

## The Role of Water in Human Conflict and Politics: A Strife 4-Part Series

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### Part I: Water – A Wellspring of Conflict?

Paula Hanasz

Water wars; they seem inevitable in an age of non-traditional security threats and problems such as climate change requiring collective action. But water is rarely a single cause of conflict. Certainly, water can be a stress multiplier in a conflict, but violent conflict can also affect the equitable distribution of water, and thus exacerbate tensions. In other words, it's complicated. Conflict is never straightforward, and neither is water governance.

Nonetheless, the fear of water wars persists. The logic is obvious to the point of a truism: water scarcity combined with rapidly increasing populations and the consistent growth in demand for food and energy will lead to competition between states over freshwater resources. This competition, the thinking goes, is likely to culminate in violent clashes over control of this precious, finite and irreplaceable resource.

Commentators such as Brahma Chellaney have built careers making this very argument.<sup>1</sup> He argues that Asia may be on the brink of water wars fuelled by China's accelerating consumption of water, energy and food, and its powerful upstream position vis-à-vis weaker, already volatile states on the Mekong and Brahmaputra Rivers (i.e., India and Bangladesh on the former, and Myanmar, Laos, Cambodia, Vietnam and Thailand on the latter).

Compelling though it is, the water wars thesis

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<sup>1</sup> Brahma Chellaney, *Water, Peace, and War: Confronting the Global Water Crisis* (Rowman & Littlefield Publishers, 2013).

has been widely discredited by scholars.<sup>2</sup> No war has ever been solely over water. Rather, hydropolitics, the geopolitics of water, is regarded by academics and policymakers to be complex. It is no longer possible to simply say that water causes conflict.

In recent years, water scholars, including many affiliated with the London Water Research Group<sup>3</sup> based at King's College, have shown that more often than not, there can be cooperation over a shared river *and* conflict over it at the same time.<sup>4</sup> The Indus River is a great example of this. The conflict between India and Pakistan following independence from the British Empire included disputes over the shared rivers of the Indus basin, and eventually resulted in the signing of the Indus Waters Treaty in 1960. Although the treaty still has its critics in both countries, it continued to function throughout the two wars between India and Pakistan.

Another important point is that water conflict is not always so bad, and water cooperation is not always what it seems. Disputes can force states to negotiate mutually agreeable outcomes, but at the same time, international treaties can cement an inequitable status quo. For example, India signed in 1996 an agreement with Bangladesh over the sharing of waters of

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<sup>2</sup> Paula Hanasz, 'Water War - What is it Good For?', in *APPS Policy Forum* (19 March 2014), online at <http://www.policyforum.net/water-war-what-is-it-good-for>.

<sup>3</sup> London Water Research Group, online at <https://lwrg.wordpress.com>.

<sup>4</sup> Paula Hanasz, 'Understanding Water Cooperation and Conflict', in *Global Water Forum* (2 December 2013), online at <http://www.globalwaterforum.org/2013/12/02/understanding-water-cooperation-and-conflict>.

the Ganges River, but this arrangement greatly favours India and continues to be a source of resentment within Bangladesh.<sup>5</sup>

Just because water is not unequivocally a wellspring of conflict, that is no reason for complacency. Tensions over shared water resources are real and require our attention. The current conflict in Syria, for example, has been exacerbated by decades of weak governance in the water and agriculture sectors, and a lack of preparedness for severe drought.<sup>6</sup> Water, in other words, is often one piece in a very complex puzzle of conflict.

The puzzle of water-related conflict does not necessarily reveal a picture of states contra states. Firstly, the notion of state's priorities and approaches to water management as being homogenous is incorrect because subsets of national actors have different values and agendas. Secondly, most water-related violence happens at the sub-national level between tribes, sub-national governance units such as states or municipalities, rural and urban populations, water use sectors, etc.<sup>7</sup>

For example, the disputes between Indian states over shared rivers are arguably more heated and entrenched than water disputes that India has with neighbouring Nepal or Bangladesh.<sup>8</sup> Similarly, disputes can arise between, for instance, industrial water users and agricultural water users, or between urban consumers and environmental conservationists. The Murray-Darling basin in Australia provides an illustration of tensions between water use sectors – farmers at odds with the city of Adelaide and the policymakers in Canberra

wishing to reserve some river flow for environmental purposes and Aboriginal cultural rights.

An American water governance expert, Ken Conca, argues that while most conflicts over water occur at the local level – at the scale of a city, say, or the watershed – they are also often driven by powerful global forces. For example, Conca argues that, '[t]he growth of industrial fish farming is fuelled by changing consumer tastes in rich countries. Big hydroelectric projects in remote locations often power industrial processing facilities that plug into the global economy, while bypassing local economies and imposing a heavy burden on local communities.'<sup>9</sup>

Another red herring in the puzzle of water conflicts is the issue of scarcity. Looking solely at factors such as the volume of water available per capita does not take into account spatial variability in water resources within countries and the technological or economic adaptation of nations at different levels of development.<sup>10</sup> Some states such as Israel are relatively arid but can still maximise their per capita allocation through technologies such as desalination plants; others, like India, have abundant water resources but lack apparatus and ability to distribute these resources efficiently or equitably.

In other words, water-related disputes do not arise out of a lack of water *per se*, but rather the misallocation or mismanagement of existing water resources.<sup>11</sup> When the distribution of finite resources is perceived as unjust, that is when disputes begin.

More importantly, water is rarely, if ever, the single cause of conflict. It is, however, a stress multiplier. In the context of other socio-political disruptions, the lack of water or the

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<sup>5</sup> Paula Hanasz, 'Sharing Waters vs. Sharing Rivers: The 1996 Ganges Treaty', in *Global Water Forum* (28 July 2014), online at <http://www.globalwaterforum.org/2014/07/28/sharing-waters-vs-sharing-rivers-the-1996-ganges-treaty>.

<sup>6</sup> Anders Jägerskog, 'Don't Blame the Drought!', in *Stockholm Water Front*, No. 1 (May 2016), pp. 12-13.

<sup>7</sup> Aaron T. Wolf et al., 'Managing Water Conflict and Cooperation', in *State of the World 2005* (The Worldwatch Institute, 2005), p. 87.

<sup>8</sup> Paula Hanasz, 'The Politics of Water Governance in the Ganges-Brahmaputra-Meghna Basin', in *ORF Issue Brief* (3 November 2015), online at <http://www.orfonline.org/research/the-politics-of-water-governance-in-the-ganges-brahmaputra-meghna-basin>.

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<sup>9</sup> Ken Conca, 'The New Face of Water Conflict', in *Navigating Peace*, No. 3 (November 2006), p. 3.

<sup>10</sup> Shira Yoffe et al., 'Geography of International Water Conflict and Cooperation: Data Sets and Applications', in *Water Resources Research*, Vol. 40 (2004), p. 2.

<sup>11</sup> Paula Hanasz, 'The Problem with Problems of Water Scarcity in South Asia', in *Global Water Forum* (25 February 2014), online at <http://www.globalwaterforum.org/2014/02/25/the-problem-with-problems-of-water-scarcity-in-south-asia>.

inequitable distribution of water, can tip the often fragile socio-political stability off-kilter. Even the renowned scholar Aaron Wolf, who proposes the idea that water is largely a vector of cooperation, warns that 'the lack of a clean freshwater supply clearly does lead to instability which, in turn, can create an environment more conducive to political or even military conflict.'<sup>12</sup> Wolf adds that 'water-related disputes can also engender civil disobedience, acts of sabotage, and violent protest.'<sup>13</sup>

Resentment about water allocation can combine with and exacerbate other existing tensions. The effects of climate change – another stress multiplier<sup>14</sup> – in conjunction with a population boom could, for example, lead to shortfalls in water supply in the Middle East and contribute to mounting discontent.<sup>15</sup> But environmental stresses alone are not enough to cause conflict.

Both Syria and California have faced severe drought in recent years. But only in Syria has the fabric of society almost completely disintegrated. Why? Mismanagement and lack of foresight have left the country ill prepared to cope with such a drought. In contrast, although the Californian drought is taking its toll too, the broader system of food production which is affected is more resilient to shocks: the USA is better equipped than Syria for dealing with natural disasters and the federal government structure is able to provide somewhat of an economic safety net. Resilience, then, is the factor that determines whether water stress can be contained or whether it will add to other stress multipliers and boil over into conflict.

The relationship between water and conflict flows in more than one direction. Water can be

a stress multiplier in conflict, as we just saw, but violent conflict can also exacerbate the water situation. The effects of an existing or ongoing conflict can worsen the access to water for those who need it most, such as internally displaced persons. Water-dependent livelihoods, such as those in irrigated agriculture, could also be disrupted by conflicts that damage infrastructure or blocks access to water sources. This might set off a chain reaction across sectors, exacerbating the conflict further. After all, water security is inextricably linked with food security and, thus, human security.<sup>16</sup>

Once conflict, no matter what its catalyst, encroaches on the availability of and access to environmental resources, it may become intractable. Grievances over control of natural resources may contribute to the onset of conflict, revenues from natural resources may finance conflict, and combatants often target or otherwise damage the environment.

In recent conflicts in Iraq, we have seen dams captured by militias; the threat of destroying the dam is used as a 'stick' against downstream population, while the promise of continuous water supply is a 'carrot'. The 'weaponisation' of water and water infrastructure in this way is not a novel tactic; it has been employed by various groups in various parts of the world for centuries. But attacking water infrastructure in war time for military gain is no different from attacking or capturing other civil infrastructure and as such does not strictly fit into the understanding of water-related conflict.

Once violent conflict subsides, peace is often fragile: countries with past resource-related conflicts are, according to Environmental Peacebuilding,<sup>17</sup> more likely to relapse, and to do so twice as quickly. Many parts of sub-Saharan Africa, for example, have been ravaged by conflicts over natural resource extraction, and unable to rebuild social and economic stability through subsequent droughts and

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<sup>12</sup> Aaron T. Wolf, 'Conflict and Cooperation Along International Waterways', in *Water Policy*, Vol. 1, No. 2 (1998), p. 9.

<sup>13</sup> Wolf et al., *State of the World 2005*, p. 88.

<sup>14</sup> National Research Council of the National Academies, *Himalayan Glaciers: Climate Change, Water Resources, and Water Security* (Washington D.C.: The National Academies Press, 2012), p. 89.

<sup>15</sup> K.M. Campbell et al., *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change* (Center for Strategic and International Studies/ Center for a New American Security, 2007), pp. 60-61.

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<sup>16</sup> Paula Hanasz, 'Water, Security, and the State', in *Reinventing Peace* (18 March 2015), online at <https://sites.tufts.edu/reinventingpeace/2015/03/18/water-security-and-the-state>.

<sup>17</sup> See the Environmental Peacebuilding website, online at <http://environmentalpeacebuilding.org/about/about/#sthshash.bg4QRImB.dpuf>.

famines.

As discussed above, the availability of and access to natural resources such as water can exacerbate or be exacerbated by conflict. The complexity of such conflicts has led to the development of a new discipline – environmental peacebuilding – which ‘integrates natural resource management in conflict prevention, mitigation, resolution, and recovery to build resilience in communities affected by conflict’.<sup>18</sup> Environmental peacebuilding is a growing field.

In conclusion, wars between nation-states over freshwater resources are unlikely, but sub-state conflicts are not. Moreover, the cause and effect between conflict and water availability are not always clear or unidirectional. The same water resources can simultaneously be a source of conflict and an instrument for cooperation. In the coming decades, we will see more complex disputes develop, not only between groups of people, but also water-use sectors and urban versus rural populations. These resentments over water allocation may function as stress multipliers in other socio-political conflicts, which in turn could worsen the access to water resources for those most vulnerable. The conflicts we do see will certainly be more complex and requiring nuanced approaches, such as those that can be applied based on research within the emerging academic field of environmental peacebuilding.

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## Part II: Dams as Centaurs

Filippo Menga

In Greek mythology, the Centaur was a creature with the head, arms, and torso of a man and the body and legs of a horse. The Italian thinker Niccolò Machiavelli used the image of the centaur to delineate the traits and attitudes of a good ruler, the Prince, who would know how to use his strength (or force), but also his intellect. A Prince had to be respected to obtain obedience, as in the ideal case of Roman Emperor Marcus Aurelius, who ‘possessed many qualities which earned him

great respect, all his life he succeeded in holding both of these [the soldiers and the populace] in check and he was never hated or scorned’.<sup>19</sup>

Although this might at first sound as a conceptual overstretch, the image of the centaur can be useful to metaphorically represent one of the least philosophical and more down-to-earth (or water) structures of our time, major dams.<sup>20</sup> In order to prove so, some context is needed.

Dams are, perhaps, the most spectacular way to tame water resources. They can serve multiple purposes, such as generating hydroelectricity, controlling water flows, and allowing irrigated agriculture and urban development. As illustrated by the work of the US-based NGO International Rivers, we are currently witnessing a new boom in the global dam industry. But things have not always been this way. Following the first boom in the early and mid-twentieth century, the number of dams being built worldwide started to decline in the 1970s. Sanjeev Khagram proposes four arguments to explain this phenomenon.<sup>21</sup>

The first is technical, due to the overexploitation of rivers and the subsequent scarcity of suitable sites where new dams could be built. The second is financial, and is related to the shortage of funding for this kind of projects, which are notoriously very costly. On top of that, the hydropower sector is frequently linked with corruption. Transparency International, an NGO which monitors corporate and political corruption, dedicated its 2008 Global Corruption Report to Corruption in the Water Sector, noting that the ‘hydropower sector’s massive investment volumes (estimated at US\$50–60 billion annually over the coming decades) and highly complex, customised engineering projects can be a breeding ground for corruption in the design, tendering and execution of large-scale

<sup>19</sup> Niccolò Machiavelli, *The Prince* (New American Library, 1958), p. 108.

<sup>20</sup> The International Commission on Large Dams (ICOLD) defines a major dam as a dam with a height of 150 m or more from the foundation, a reservoir storage capacity of at least 25 km<sup>3</sup> and an electrical generation capacity of at least 1000 MW.

<sup>21</sup> Sanjeev Khagram, *Dams and Development* (Cornell University Press, 2004).

<sup>18</sup> Ibid.

dam projects around the world'.<sup>22</sup> The third reason is economic, and refers to the viability of cheaper alternatives (such as natural gas power plants), while the fourth is political, and stems from public protests against dams and the emergence of the environmental awareness paradigm inspired by the Green movement.

As a result of the growing opposition to large dams, in 1997 the World Bank (which is the single largest investor in large dams worldwide) ignited the work of the World Commission on Dams (WCD). This body had the responsibility of reviewing the development effectiveness of large dams, along with their social, economic and environmental impact. The work of the WCD resulted in a report, published in 2000, which noted that 'Dams have made an important and significant contribution to human development, and the benefits derived from them have been considerable', and yet, '[i]n too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment'.<sup>23</sup>

While all this might lead one to think that the large dam business was staring at a gloomy future in the early 2000s, the trend changed, and hundreds of new, extremely costly and controversial projects have been launched in the last few years. China and India, in particular, are now leading the dam movement worldwide, driven by the prospect of producing more clean hydroelectricity while also increasing their agricultural production to meet growing energy and food needs.

Ten years after the release of the WCD report, a special issue of the journal *Water Alternatives* identified the new drivers of dam (and hydropower) development, including a rise in water and energy demands, climate change, the increase in the price of carbon fuels, and the

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<sup>22</sup> Transparency International, *Global Corruption Report 2008: Corruption in the Water Sector* (Cambridge University Press, 2008), p. xxv.

<sup>23</sup> The World Commission on Dams, *Dams and Development: A New Framework for Decision-Making* (Earthscan, 2000), p. xxviii.

abovementioned emergence of new funders.<sup>24</sup> Although all these motives seem valid, it is worth mentioning that there is a number of low-impact and non-structural alternatives to dams (such as small hydroelectric power plants, infiltration galleries and wells, and seasonal dams) that would not cause, for instance, regional controversies and the displacement of thousands of people, and would not even require the huge investments necessary to build a large dam.<sup>25</sup> Then why do governments still tend to prefer taking the hard road? Here is where the centaur can provide analytical insights to understand this phenomenon.

As Bent Flyvbjerg effectively sums it up, megaprojects have to be considered as both political and physical animals to appreciate the rationale behind their construction.<sup>26</sup> The performative effects of dam building, those that are clearly visible such as the diversion of a river or the generation of hydroelectricity, epitomize the strength of the centaur, its animal side. Yet, there is also a hidden and more abstract dimension that accompanies the construction of a large dam and that corresponds to the sapiens part of the centaur, its ideological production. I am referring to what can be termed the 'dam ideology', or in other words, the process through which ruling elites use the symbolism of major dams to gain legitimacy and bolster a sense of national identity and patriotism.<sup>27</sup> This aspect, I argue, should be considered, along with the ones mentioned above, as a driver of dam development. In fact, if we apply this analytical lens to some of the current regional controversies triggered by dam building, we can further our understanding of the issues at stake

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<sup>24</sup> This special issue was appeared under the title *WCD+10: Revisiting the large dam controversy*, with guest editors Deborah Moore, John Dore and Dipak Gyawali; it was published as *Water Alternatives*, Vol. 3, No 2 (June 2010).

<sup>25</sup> Elizabeth Brink, Serena McClain & Steve Rothert, *Beyond Dams: Options and Alternatives. A Report* (American Rivers & International Rivers Network, 2004).

<sup>26</sup> Bent Flyvbjerg, Nils Bruzelius & Werner Rothengatter, *Megaprojects and Risk: Making Decisions in an Uncertain World* (Cambridge University Press, 2003).

<sup>27</sup> Filippo Menga, 'Building a Nation through a Dam: The Case of Rogun in Tajikistan', in *Nationalities Papers*, Vol. 43, No. 3 (2015), pp. 479-494.

and of the apparently uncompromising attitude of the actors involved.

The Grand Ethiopian Renaissance Dam currently under construction on the Blue Nile in Ethiopia, which, when finished, will be the largest dam in Africa provides great example. Beyond electricity generation, flood control and grand irrigation schemes, the discursive weight of the ideology attached to the dam suggests that the Otherness is as important as the Self. The fact that Egypt, a neighbouring and rival country, opposes the dam, can reinforce among its proponents the idea of the necessity of its construction. Matters related to self-determination, sovereignty, the assertion of power, the control of nature and, above all, patriotism and national identity, are all part of the discursive constructions surrounding the dam. Furthermore, at the domestic level, the dam can be portrayed as a nationally cohesive element that unites the population around a national idea of progress and success. While this phenomenon has been studied in the past by environmental historians (some iconic examples are the Hoover Dam in the United States, the High Aswan Dam in Egypt and the Marathon Dam in Greece), scholars studying transboundary water relations have so far overlooked what appears as a twenty-first century revamp of high modernism, that is 'a strong, one might even say muscle-bound, version of the beliefs in scientific and technical progress that were associated with industrialization in Western Europe and in North America from roughly 1830 until World War I'.<sup>28</sup>

This seems to be happening not only in the Nile, but also in other river basins around the world. In Central Asia, for instance, Tajikistan is building the large and controversial Rogun Dam (strongly opposed by neighbouring Uzbekistan), whose meaning has now gone beyond that of a simple multi-purpose dam. The Tajik President Emomali Rahmon has often reiterated that the dam is Tajikistan's national idea. It therefore seems difficult to imagine a government giving up on a national

idea, even though this might cause regional tensions.

This is not to say that large dams should be analysed only for their discursive impact. Rather, both dimensions of dam building development – the performative and the discursive – should go hand in hand if we are to fully understand its meaning and to effectively address its necessity. Less controversial alternatives to large dams do exist, but their symbolic and discursive impact is of course negligible compared to that of a megaproject. After all, the centaur wouldn't go very far without his legs, and yet, it is his mind that sets the direction.

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### **Part III. Transboundary Rivers and Climate Change: Testing Times for Hydro-Diplomacy to Attain and Maintain Cooperation**

Ashok Swain

Water is a basic condition for life and it also plays a fundamental role in human development. The global water crisis is of such magnitude that it is growing into an issue of global common concern. This perspective puts the focus on transboundary rivers: approximately half of global fresh water is available through 276 international basins around the world. Overall, 145 countries have territories that include at least one shared river basin. However, national politics complicates the policies towards the enhanced 'river basin management' of such shared rivers. Thus, while dealing with the management of the transboundary rivers, political issues are often overshadowed by integrated water resources management (IWRM) terminology that has contributed to a failure of achieving global water governance.<sup>29</sup>

The management of transboundary rivers in different parts of the world cannot follow a particular golden principle of the value of water; its demand and supply varies from one

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<sup>28</sup> James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition have Failed* (Yale University Press, 1998).

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<sup>29</sup> Ken Conca, *Governing Water* (MIT Press, 2006).

basin to another.<sup>30</sup> Thus, it can be safely argued that 'one-shot approach of management within the context of IWRM is far too simplistic to be useful, or applicable' for sustainable management of international rivers.<sup>31</sup> In spite of its huge significance for global peace and development, the available knowledge on how to manage transboundary waters is quite weak.<sup>32</sup> Moreover, the existing knowledge and institutions on governance of international rivers are becoming increasingly volatile because of greater demand and a decreased supply of fresh water. Adding further to the problem, the threat of global climate change has started undermining the on-going regimes and institutions of water sharing and management of transboundary rivers.<sup>33</sup>

### *The Climate Change and Transboundary Water*

The controversy over the science of global warming and the procedures adopted by the Intergovernmental Panel on Climate Change (IPCC) in collecting data fails to undermine the decades of climate research confirming the overall global climate change. Doubts and denial have given way to debates about the scale and impact of climate change, particularly in the developing countries. Agricultural production in the Southern hemisphere may become highly vulnerable to climate change, given the other multiple stresses that affect food systems in these regions. Moreover, some countries and societies are better in formulating adaptation strategies for land- and water-use practices that buffers them against the negative consequences of climate change. To address the adverse effects of climate change, the effectiveness and coping abilities of existing institutions also matter. Within this context, there is a general recognition that the developing countries will be the hardest hit by the impacts of climate change, as they tend to depend more on the natural environment for

their livelihoods and have limited coping mechanisms and adaptive capacity.

While the exact impact of climate change is not yet known, it will have a clear bearing upon access to shared water resources as it affects hydrological cycles at all geographical scales, from global to local. Some regions will become much drier, some wetter. Variations in precipitation are already leading to more and severe droughts and floods, changes in the groundwater recharge, high evaporation from fresh water systems, and alteration in river runoff. Increasing number of high and untimely floods will threaten the safety of dams and other water infrastructure projects; severe droughts will drastically reduce water supply, irrigation and hydropower generation. Climate change is thus set to make water management challenges more complicated in terms of providing safe drinking water, adequate sanitation, improved food production, and in generating hydropower and ecosystem protection.

Moreover, climate change may have a serious impact on overall availability of river water flow in international basins. Some parts of the basin will experience higher flows and others lower flows placing significant strain on existing agreements and structures for the management of shared water resources, whether at local, national or international level, and thereby increasing the need for serious conflict management institutions and practices. As can be seen, the ongoing climatic changes will make it impossible for a 'business as usual' approach, which emphasizes building large projects to increase water supply in managing shared river systems. Increased freshwater variability will introduce a greater uncertainty, which can pose serious new challenges to the on-going practices of water sharing and management in transboundary river basins.

### *New challenges for hydro-diplomacy*

The influence of hydro diplomacy has helped several disputing countries to not only agree on their portions of shared river water, but also to

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<sup>30</sup> Ashok Swain, *Managing Water Conflict: Asia, Africa and the Middle East* (Routledge, 2004)

<sup>31</sup> Olli Varis, Cecilia Tortajada & A.K. Biswa, *Management of Transboundary Rivers and Lakes* (Springer, 2008).

<sup>32</sup> Anton Earle, Anders Jägerskog & Joakim Öjendal (eds.), *Transboundary Water Management: Principles and Practice* (Earthscan, 2010).

<sup>33</sup> Anton Earle et al., *Transboundary Water Management and the Climate Change Debate* (Routledge, 2015).

look other areas of cooperation.<sup>34</sup> In 1994, water played a critical role in the signing of a peace agreement between Israel and Jordan. India and Pakistan, in spite of more than six decades of bitter rivalry, have only had lasting cooperation over the sharing of Indus River water resources. Thus, international rivers are not only expected to induce riparian conflict, its water resource can also bring engagement and cooperation in the basin. Many competing riparian countries in the South, most notably the basin countries of the Mekong, Amur, Jordan, Syr Darya, Ganges, Mahakali, Nile, Komati, Limpopo, Okavango, Orange, and Zambezi rivers have signed sharing arrangements in the 1990s. The signing of these river agreements had brought a fundamental shift over the possible impact of shared water on riparian relations, a likely phase of cooperation rather than conflict. Hydro-diplomacy is still being endorsed to take precedence over state-centric politics and decision-making over international water resources.<sup>35</sup>

Most of these recently concluded river agreements have been possible as the riparian countries saw advantages in cooperating to pursue further development of shared water resource to meet their growing demand. In some cases like the Nile, Mekong, Jordan and Zambezi rivers, diplomatic pressures and financial aid and grants from the international community had also facilitated the success of hydro-diplomacy. However, these river water agreements are in grave danger if they fail to receive institutional support for proper water management at the basin level.

Global climate change has added increased uncertainties to the smooth functioning and survival of these recent transboundary water agreements. As Arnell argues, climate change may affect both the demand and supply sides of the balance.<sup>36</sup> With increasing temperatures,

sizeable reductions in precipitation, and the melting of glacial sources of major river systems, less water supplies will be available to the agricultural sector. Climate change will not only decrease the supply of river water, it may also enhance its demand in domestic, irrigation, industrial and ecological use. Thus, climate change induced scarcity and uncertainty of shared water resource in the arid and semi-arid regions can possibly limit the potential of hydro-diplomacy. It is true that the projected impacts of global climate change over fresh water supply might be huge and dramatic, but in a transboundary basin, the effects on the runoff might vary depending on the location. This further enhances the uncertainties and anxieties over the water availability in the shared river systems. Most of the existing river agreements do have provisions to meet near-term shortfalls in the river flow. However, climate change can potentially bring long-term changes to water availability, which requires water regimes and institutions to be flexible and robust enough to cope with the emerging situation.

Climate induced changes in water supply might demand comprehensive adjustments in the ongoing water sharing arrangement of shared rivers. The institutions overseeing water sharing must be adaptable enough in re-allocating fluctuating water flow for various sectors. Thus, the task of hydro-diplomacy amid climate change entails both getting the disputing riparian countries to sign river sharing agreements but also to ensure these countries support establishing regimes and institutions which will have the provisions for information sharing, conflict management mechanisms, and flexibility to adjust to the runoff variations in the long term. Moreover, mitigating or adaptive actions at bilateral or even sub-basin levels to address the impacts of climate change in a transboundary river basin are unlikely to achieve the objective of sustainable peace and cooperation over shared water resources. The emerging and unprecedented situation demands basin countries to cooperate and act collectively and jointly. In the face of global climate change, a successful basin-based initiative is required to facilitate better integration of demand and supply and to promote meaningful participatory processes. Business as usual for hydro-

<sup>34</sup> Ken Conca & Geoffrey D. Dabelko (eds.), *Environmental Peacemaking* (Woodrow Wilson Centre Press/ The Johns Hopkins University Press, 2002).

<sup>35</sup> Benjamin Pohl, et al., *The Rise of Hydro-Diplomacy: Strengthening Foreign Policy for Transboundary Waters* (Adelphi, 2014).

<sup>36</sup> Nigel W. Arnell, 'Climate Change and Global Water Resources', *Global Environmental Change*, Vol. 9, suppl. 1 (October 1999), pp. 31-49.

diplomacy and a singular focus upon bilateral negotiation and arrangements is no longer an option in the transboundary river basins.

### *Responding to new challenges*

The unfolding effects of climate change will further increase water scarcity, in the form of long-lasting drought and seasonal variation. People need a responsive state to attend to their basic need for water. When climate change makes it difficult for the state to meet demand for water, conflicts over a narrowing resource base are less readily resolved; instability and violent conflict within states may feed instability and conflict between states within the basin. Efficient and good water management in the face of climate change is also part of peace-building effort – both in preventing countries from returning to armed conflict, and in helping avoid relapse after a period of violence.

Despite the risk that climate change induced water scarcity poses to social wellbeing and economic growth, in most countries there has been alarmingly little progress towards managing freshwater sustainably. Significant economic and political resources are needed to develop technologies and infrastructure that provide better water management at the basin, national, and transboundary level.

To reach agreement on meeting the competing and fluctuating demands for water in a transboundary basin is, in fact, not an easy task. Hydro-diplomacy thus needs to adopt a total resource view where river water is seen as a key input for development and growth in the basin. The challenges are not only limited to the technical and economic sectors, but also include crucial water sector reform, which is political in nature. Moreover, the task of hydro-diplomacy will not be anymore limited to basin-based regimes and institutions, but also entails achieving effective water governance in the face of climate change and influencing the supporting pathways from local, national and international policies and practices.

In the past, river-sharing issues could be effectively covered by a few negotiators trained specifically to deal with water issues. But today,

hydro-diplomacy needs to involve itself not only in an increasing range of fields (such as energy generation, food production, human rights, and health issues) but also hydro-diplomacy should also reflect sufficient knowledge about possible impacts of climate change (such as precipitation pattern, glacier melting, temperature increase, rising sea water encroaching fresh water system). Many developing riparian countries, not only have to survive with the existing power asymmetry vis-à-vis regional powers in the basins, they also suffer from a lack of competent 'hydro-diplomats' who can address climate change issues while carrying out negotiation over shared water resources.

Hydro-diplomacy is needed to acquaint itself well with increasingly diversified climate change policy processes. River water negotiators are required to have sufficient knowledge of the climate change phenomenon and the possible impact of climate change on human, society, country and region. They also need to have an overview of the existing and emerging schools of thought regarding climate change and its impact on water availability and demand.

It is also crucial to identify and classify important actors and groupings and their positions on climate change and water management issues. Moreover, hydro-diplomacy must have overview of increasing legal and policy documents, which are coming out by international and regional organizations on the impact of climate change on water resources and possible mitigation and adaption measures.

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### **Part IV: ISIS and the Flood. The Hydro-politics behind the Rise (and Fall) of Daesh** Harris Kuemmerle, Guest Editor, *Strife*

The average person can only survive 3-7 days without water before ultimately (and inevitably) succumbing to a painful death. Likewise, there is not a single nation-state on earth whose day-to-day existence is not entirely and utterly dependent upon the economic, agricultural, political, cultural, and fundamentally life giving qualities of that all-important molecule. Water

is the lowest common denominator. There is no substitute, and there is no cure for its absence. In a very real sense, governments live by the tap, and die by the tap; and the so called Islamic State are no exception.

After all, their rise occurred against the backdrop of profound underlying hydrological factors and issues in the run-up to the destabilisation of Syria in 2011, namely one of the worst droughts in half a century. A drought which was primarily the result of a confluence of factors mainly including climate change, and ineffectual and short-sighted hydrological management and agricultural policies on the part of the Assad government. Make no mistake, droughts are very bad for business, and a recent report by UN-Water (the inter-agency UN organisation designed to assist states promote water quality and availability) suggested that as many as four-fifths, or about 78%, of all jobs globally are moderately or heavily dependent upon a stable supply of water.<sup>37</sup>

This is especially true in the rural Syrian north east where the traditional reliance on agriculture is made possible by the large areas of arable land, compared to the rest of Syria. Indeed, the area of Al-Hasakeh in particular is responsible for around 75% of Syria's total wheat production.<sup>38</sup> This bounty, however, also makes the north east region heavily dependent upon reliable water supplies for life and living. Therefore, it seems likely that such a major drought would have hit Syrian employment hard as agricultural falters in its traditional regions. And indeed, the result of this drought was the large scale unemployment of around 800,000 people; which in turn resulted in thousands of young men moving from the rural areas to the cities in search of work.<sup>39</sup> This arguably both added to existing stresses and tensions and had the unintended consequence of creating a large and desperate pool of young

men for groups like Daesh to exploit.<sup>40</sup> While it would be simplistic to claim that the drought caused the Syrian uprising and resultant civil war by itself, it was an undeniable stress multiplier which Daesh were deftly able to exploit. However, water issues have also been an integral factor in the rise of Daesh beyond just fuelling destabilisation and providing the environment for a large pool of willing recruits to join their state-building project.

#### *Water as a weapon of war*

The brutality and savagery of Daesh tactics are well documented, with their latest attack in Brussels sending shock waves around the world. However, probably their least well known (and arguably most effective) strategies have been their attempts to control the dams and waters of the Tigris and Euphrates; rivers which constitute the vast majority of habitable and arable land in Iraq and Syria. Since their inception Daesh have at one time or another taken control of five dams along the Tigris and Euphrates; the Samarra, Nuaimiyah, Haditha, Mosul, and Tishrin.<sup>41</sup> This has given them the capabilities to drown entire cities such as Baghdad or shutoff the water or electricity to whole communities as a means of instilling psychological terror or controlling populations. Capabilities which have been turned into actions on numerous occasions. For example, in April 2014 Daesh closed the gates of the Nuaymiah Dam and the resulting flooding successfully unseated government forces in the area and caused water shortages for millions, and thousands to lose their homes.<sup>42</sup> Furthermore, in August 2014 Daesh successfully captured Mosul Dam, the control of which put Baghdad and almost half a million Iraqis in direct danger of flooding and electricity blackout. The danger was deemed to be so great that the Iraqi government

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<sup>37</sup> UN Water, *The United Nations World Water Development Report 2016: Water and Jobs* (UNESCO, 2016)

<sup>38</sup> Syria Needs Analysis Project, *Impact of the Conflict on Syrian Economy and Livelihoods* (ACAPS, 2013)

<sup>39</sup> Aron Lund, 'Drought, Corruption, and War: Syria's Agricultural Crisis', in *Carnegie Middle East Center* (18 April 2014), online at <http://carnegie-mec.org/diwan/55376>.

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<sup>40</sup> Ian Sample, 'Global Warming Contributed to Syria's 2011 Uprising, Scientists Claim', in *The Guardian* (2 March 2015), online at <https://www.theguardian.com/world/2015/mar/02/global-warming-worsened-syria-drought-study>.

<sup>41</sup> John Vidal, 'Water Supply Key to Outcome of Conflicts in Iraq and Syria, Experts Warn', in *The Guardian* (2 July 2014), online at <https://www.theguardian.com/environment/2014/jul/02/water-key-conflict-iraq-syria-isis>.

<sup>42</sup> Ibid.

committed considerable resources (including US assistance) to its successful recapture.<sup>43</sup>

However, Daesh is still in control of a number of other dams in Syria and Iraq and their control has given Daesh not only an effective means of combating government forces, it has also given them a powerful and coercive tool for both instilling dread and loyalty among populations.<sup>44</sup> In the words of Michael Stephen at RUSI, 'the control of water supplies gives strategic control over both cities and countryside. We are seeing a battle for control of water. Water is now the major strategic objective of all groups in Iraq. It's life or death. If you control water in Iraq you have a grip on Baghdad, and you can cause major problems. Water is essential in this conflict.'<sup>45</sup> Indeed, in a 2014 issue of *Dabiq* (Daesh's official magazine) the group claimed that 'it's either Islamic State or the flood', making clear their willingness to use water as a weapon of war.<sup>46</sup>

#### *Water as a tool of peace*

However, when the guns fall quiet and the warriors go home the prevailing state must be able to provide for the basic services of its people, including its vanquished. That ability to provide basic services is one of the most common tests of a state, and Daesh is not exempt from this. Adding to that, in the case of arid Syria and Iraq, the supply of water is of particular importance and according to one intelligence official, 'if ISIS has any hope of establishing itself on territory, it has to control some water.'<sup>47</sup> However, this control also comes with responsibilities; and crucially, costs.

If Daesh intends to survive as a state in the traditional sense then it must invest heavily in the building, upgrading, and management of

new and current water works infrastructure and delivery projects while also ensuring that the supply is sustainable. This investment will likely require substantial financial and political costs in their newly conquered regions as their inherited infrastructure becomes unfit for purpose. While at the same time Daesh will also need to be able to evolve its institutional structure in order to have the organisational bodies necessary to oversee these developments and manage the system while also making sure they are well staffed with trained personnel.

Going hand in hand with this management and governance will be dealing with issues pertaining to the equal use of the waters and Daesh will have to have systems put in place to mediate disputes over fresh water use domestically in order to prevent tensions. While also having the diplomatic presence necessary to fight for the fresh water interests of their new state among their neighbours in one of the driest regions on earth. These realities will necessitate cooperation (particularly internationally), and while there are some limited examples of this occurring, it remains unclear if Daesh will be pragmatic enough to be able to put aside ideology and cooperate long-term with those they may deem their enemy in order to keep the taps flowing.

This is a daunting list of tasks for any state, especially a new one. So how well is the new so-called Islamic State getting on with functioning as a state? While it is hard to say for sure, all indications suggest that things are not going as well as hoped. A 2014 report suggested that Daesh seemed to be unable to provide even basic services, with water only available for 3-4 hours a day in Raqqa.<sup>48</sup> Likewise, a later report from August 2015 suggested that services had improved in some areas, however, that the conflict was also taking a heavy toll on the infrastructure and the

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<sup>43</sup> Saira Khan, 'The Islamic State and Water Infrastructure', in *Tel Aviv Notes*, Vol. 10, Nr. 3 (2016), pp. 1-4.

<sup>44</sup> Ahmed Rasheed, Raheem Salman & Isabel Coles, 'Iraq Insurgents Use Water as Weapon after Seizing Dam', in *Reuters* (11 April 2014), online at <http://www.reuters.com/article/us-iraq-security-idUSBREA3A0Q020140411>

<sup>45</sup> Vidal, 'Water Supply Key'.

<sup>46</sup> The Islamic State, 'The Flood', in *Dabiq*, No. 2 (1435 Ramadan).

<sup>47</sup> Vidal, 'Water Supply Key'.

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<sup>48</sup> Liz Sly, 'The Islamic State is Failing at Being a State', in *The Washington Post* (25 December 2014), online at [https://www.washingtonpost.com/world/middle\\_east/the-islamic-state-is-failing-at-being-a-state/2014/12/24/bfbf8962-8092-11e4-b936-f3afab0155a7\\_story.html?utm\\_term=.25bd20a5110f](https://www.washingtonpost.com/world/middle_east/the-islamic-state-is-failing-at-being-a-state/2014/12/24/bfbf8962-8092-11e4-b936-f3afab0155a7_story.html?utm_term=.25bd20a5110f).

medium to long-term sustainability of those services was in doubt.<sup>49</sup>

In response the group have taken steps to ensure they meet water and electricity demands, including paying for Syrian and Iraqi government water infrastructure staff to remain at their jobs in Daesh controlled territory, taxing water, and bringing in outside assistance.<sup>50</sup> However, these are short-term solutions and will likely not by itself be enough to provide for the basic needs of the people in the longer term and much more investment in infrastructure and cultivation of domestic talent will be required to provide an adequate supply moving forward.

Indeed, the fact that Daesh appear to be relying so heavily on short-term water management solutions seems to suggest that the group still lacks both expertise in this area, and a dedicated governing body for managing the system and developing long-term policies. While also underlying all of this, is what appears to be a fundamentally unstable cultural dichotomy. With Daesh's primary ideological drive seemingly to expand the state through war, at the expense of their civic ambitions to establish a civil Caliphate becoming more secondary.

### *Concluding remarks*

Ultimately, with water's importance in war, also comes its inseparability from peace. And in order for Daesh to survive as a state they must have in place robust and effective agricultural, hydrological, and infrastructure policies to keep the waters flowing and the people alive. While also working to mediate fresh water inequalities within and without their borders. This responsibility (on top of their other duties as a de facto state) will place great strain on Daesh leadership and it seems that they still lack the expertise and stability necessary to effectively deliver on key public services and move beyond short-term solutions.

This matters because while water politics and the use of water as a weapon seem to have been a key asset of Daesh in their early years. As time moves on they will likely find water issues to be much more of a problem than an asset. Indeed, while the inability to provide basic services is not always in itself enough to topple governments, and the Daesh regime may indeed be popular with some. Daesh must also know all too well that fresh water shortages can still be a significant contributing factor to instability in a once prosperous region. Despite that, the situation in their territory seems to indicate that Daesh are largely failing both at providing those services in the short-term and in building a system which can ensure stable supplies of water and other services in the long-term, making their future as a state seem as uncertain as the waters of the rivers that support them.

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<sup>49</sup> Laith Alkhouri & Alex Kassirer, *Governing the Caliphate: The Islamic State Picture* (Combating Terrorism Center/ West Point Military Academy, 2015)

<sup>50</sup> Saira Khan, 'The Islamic State and Water Infrastructure'.