

Water, Peace & Security



Susanne Schmeier (IHE Delft), Chris Baker (Wetlands International), Judith Blauw (Deltares), Charles Iceland (World Resources Institute), Karen Meijer (Deltares) and Rolien Sasse (independent consultant)

Are water and conflict linked and what actually links them?

Conflict risks around water have increasingly made headlines in the past years. And policy-makers and their advisors have also been vehemently warning of conflicts that will occur around (increasingly scarce) water resources. Media has raised concerns that “water wars between countries could just be around the corner” (The Guardian 2012) and that “the world will soon be at war over water” (Newsweek 2015; see also SciDevNet 2018, Newsweek 2018). And the policy community, especially around diplomacy and defense circles, has warned that “access to vital resources, primarily food and water, can be an additional causative factor of conflicts” (CNA 2007) and that in the near future, many countries “will experience water problems – shortages, poor water quality or floods – that will risk instability and state failure” and thus lead to tensions (Office of the Director of National Intelligence, 2012, iii) and “will contribute to instability in states” (Office of the Director of National Intelligence 2012). Lately, these discourses have also been linked to migration. In the context of the refugee and migration debate especially in Europe, a number of policy-makers have identified natural resources and namely water crises as a key contributor to conflicts and instability, ultimately making people leave their countries. Responses by policy-makers that clearly target the migration dimension of the water conflict nexus include, for instance, the Lake Chad Conference organized in Nigeria and attended by a significant number of high-level policy-makers from Europe in February 2018.

These alarmist reports try to make us believe that water can be directly linked with insecurity and conflict. It narrates that water resources get increasingly scarce and the benefits derived from them – from water supply to electricity generation and from food production to industrial uses – decrease. As individuals, communities, provinces or entire states experience such (perceived) water challenges and fear for their benefits, they engage in competition over these resources with other actors. This can lead to minor disagreements or full-fledged violence. Examples most commonly referred to include violent clashes over water between herders and farmers in different countries in West Africa and around the Horn of Africa as well as the verbal threats of war by Uzbekistan against Tajikistan over the Rogun Dam or by Egypt against Ethiopia over the Grand Ethiopian Renaissance Dam. At the same time, it can lead to situations in which governance structures erode as state legitimacy is questioned, with people sometimes turning towards other activities than those for which they require water resources – ranging from leaving their lands to joining violent groups. The rise of Boko Haram in the Lake Chad Region is a frequently quoted example for this. And it can lead to the destabilization of governments that cannot (anymore) live up to people’s expectations regarding the supply of water and other basic services on which government legitimacy partly relies. Examples referred to include the conflict in Syria and recent protests in Iran.

These claims about water being inevitably linked to insecurity and conflict are, however, often shortsighted and alarmist but miss the bigger picture. **Water and water-related challenges do not necessarily and inevitably lead to disagreements, conflicts and insecurity.** While there is a causal link between water and security threats, other factors ultimately determine how this link plays out and whether water-related challenges indeed lead to disagreement, open conflict, displacement or instability. And, even more importantly, **something can be done to prevent such escalation.**

This is where the Water, Peace and Security partnership engages: **The Water, Peace and Security partnership develops new tools and services to understand the origins of water-related security risks, to call for action**

Water, Peace & Security



where required and to support such action being taken in an effective and timely manner. It thus provides the knowledge base for effective policy action towards cooperation and peace over water and beyond.

For any policy action on water and conflict, it is, first and foremost, important to understand the link between water and conflict and the different factors that determine its existence, its intensity and its timing. This requires understanding the pathways between water and conflict (PBL 2018). And as the link between water and conflict can play out at different governance levels in different manners – from relations between individuals to the community, the intra-state, the national and the transboundary and at times even the global level – these governance levels have to be added to the analysis.

The **first dimension that needs to be understood is the nature of water as a risk.** Water can be too little, too much or too dirty – with water scarcity playing a particularly important role. Water scarcity can occur due to natural conditions (such as changing rainfall patterns, droughts), likely exacerbated by global climate change. In most cases, however, water scarcity and its impacts are at least partly due to man-made causes, often relating to unsustainable land use, the alteration of ecosystems such as wetlands, excessive water abstraction or other forms of inadequate water management and governance choices. Increasing water demand makes societies more vulnerable to water scarcity. There can also be too much water, such as in the case of floods – whether naturally induced due to extreme weather events or occurring due to human mistakes. And water can also be available, but at a quality that prohibits any human (or other) use, ultimately also making it scarce, though not in absolute terms. It is thus the change in water resources and the impact this has on the environmental, social and economic context that matters. The Water, Peace and Security partnership therefore builds on a comprehensive range of water-related data, including data on precipitation, droughts or water-related infrastructure but also socioeconomic, political and conflict data. This includes the use of existing global datasets, data derived from satellite imagery and outputs from global hydrological models.

The **second dimension that needs to be understood is water-related insecurity** – both in terms of human (in)security and conflict. While earlier academic research on water and conflicts has largely focused on the international level and thus inter-state “water wars” (Starr 1991, Bulloch/Darwish 1993, Frey 1993, Gleditsch 1997), empirical evidence shows that the local and the intra-state level are much more prone to violence related to water (while at the international/basin level, water – if at all – tends to lead to a deterioration of bilateral relations with the respective negative effects e.g. on trade and thus economic opportunities or on regional stability; Wolf 1995, Elhance 1999, Wolf 2003). Yet, while this has been scientifically investigated, the linkages themselves are not well understood. And besides the different levels at which conflicts can potentially occur, conflict does not equal violent conflict. It can range from verbal disputes to localized violence and from the delegitimization of governments and related instability to the occurrence of violent groups as well as from diplomatic tensions affecting regional relations to acts of terrorism – and many more. The Water, Peace and Security partnership contributes to understanding the conflict dimension by analyzing a range of conflict data in relation to water and beyond, relying on global and regional datasets as well as in-depth case studies of specific regions.

Both the water and the conflict dimension have been defined by numerous researchers and academics. What is, however, largely lacking – and what is one of the root causes of alarmist claims that water-related challenges such as droughts necessarily lead to conflict – is a thorough understanding of the pathways between the two. **The question is thus how water and conflict are linked – and what actually links them.**

The link between water and conflict is never direct and straightforward. Instead, the causal pathway between the two resembles more a meandering river with numerous arms than a straight canal. And it is influenced – if not determined – by a number of intervening factors that will ultimately determine the link between water and

Water, Peace & Security



conflict in its direction, its extent, its timing and its intensity. This in turn determines the policy actions that need to be taken in order to address any existing or emerging conflicts and risks.

While it is impossible to develop a catalogue of all factors potentially intervening along the causal chain between water and conflict, a few key categories can be identified that are most likely to have an impact somewhere along this chain. Among them are (in no particular order and acknowledging their interdependence with each other) the water resources use structure, the socioeconomic context in the community/country/region as well as governance (of water resources directly and of a community/country/region more generally).

The way how water resources are being used is a key factor along the water conflict chain. If water resources are used by different actors in ways in which the use by one actor negatively affects the opportunities of other actors, conflict is more likely to occur. This is commonly seen when large dams or irrigation infrastructure are constructed along rivers as examples of the planned Fomi Dam and the increased irrigation development through the Office du Niger in the Niger Basin or the developments in the Blue Nile Basin with the Grand Ethiopian Renaissance Dam and the agricultural water needs downstream demonstrate.

The socioeconomic situation in a community, a country or an entire region **is another key factor determining how different actors can cope with water-related change.** With agriculture accounting for an average of 70% of freshwater use worldwide, countries with large parts of populations depending on agriculture as their main source of livelihood are particularly vulnerable to droughts – especially if occurring in combination with other factors such as low levels of development, already persistent food insecurity or weak governance.

Another key element along the causal chain between water and conflict is **governance**. This can relate directly to the governance of water resources or indirectly to more general governance challenges that nonetheless influence the link between water and conflict. An example of the former is Iran. The over-abstraction of water resources especially for agriculture (under the government's strategy of absolute food self-sufficiency, combined with the tolerance towards inefficient irrigation infrastructure and the lack of willingness to address the issue of over-allocated water rights) has led to water shortages that affect people and the country's economy and increasingly lead to people expressing their criticism towards the government's practices. An example of the latter can be found in the recent breach of the Xepian-Xe Nam Noy Dam in Laos. The breach of the dam and the fact that the Lao government seems to have neither warned people soon enough of the looming catastrophe nor has developed and enforced legislation and procedures for protecting its population from the potential negative effects of rapid large-scale infrastructure development by foreign investors has led to emerging criticism among Lao people. This has the potential to undermine the government's legitimacy as people increasingly question the government's overall growth and development approach (DW 2018).

It is the combination and the interaction of these factors along the causal chain that matters. If, for instance, a region is facing competition over the use of water resources and water users do not have alternative economic opportunities, it will be difficult to reconcile the uses. This will be even more so the case if there is no integrated water resources planning due to shortcomings in the water resources governance and management system. The competition occurring as a consequence of this situation is likely to lead to conflicts if no or only weak conflict resolution mechanisms exist in the community or the country.

This complex chain can be illustrated by the example of Iran: The country is located in a dry region and has always struggled with limited water availability due to little rainfall and thus naturally unfavorable conditions. At the same time, a number of different actors depend on the use of (scarce) water resources – ranging from households for domestic supply to industries and agriculture. Their respective water (over)use was further incentivized by government policies while other political factors impeded efficient and effective water management: Since the Iranian Revolution in 1979, the government supported the extension of irrigated

Water, Peace & Security



agriculture with the aim to make the country food self-sufficient. These policy decisions have put strains on Iranian water resources that most likely outweigh those induced by the natural conditions in the country. At the same time, investments in efficient water infrastructure have been lagging behind, leading to high water losses in urban water supply and in the agricultural sector. A reconciliation of competing interests over scarce and inefficiently managed water resources is further made difficult by the fact that the system of water rights in Iran remains unclear and the government has shied away from touching it as this would affect powerful actors' interests. As a consequence, the competition over water resources has led to conflicts between sectors (agriculture, industry and domestic water supply) as well as provinces, some of them erupting violently in the past years. Moreover, these water-related challenges have featured prominently in the recent protests against the government. Overall, this example illustrates that it is rather the combination of lopsided policy choices and a lack of capacity or willingness to address water rights and allocation mechanisms – in combination with other, non-water-related governance challenges – that has led to insecurity and conflict in Iran rather than the natural conditions alone.

A similar example from the transboundary level can be found in the Nile River Basin: While natural conditions are indeed unfavorable in many regards and population growth and economic development in the region put pressure on water resources in the basin, it is largely other factors that have led to the disagreement over the use of the Blue Nile between the riparian states escalating. They include the high dependence of downstream Egypt on water resources for agriculture, a linkage of water to national security consideration by Egypt's elites as well as development and policy choices in upstream Ethiopia that are largely driven by national economic development concerns. And it is these intervening factors that have led the disagreement over water between both countries.

But other avenues are possible. The various factors determining the link between water and conflict can also be of such nature that they foster cooperative management rather than conflict, as the example of the Orange Basin demonstrates: The Orange River Basin, shared by Lesotho, South Africa, Botswana and Namibia, has experienced a situation in the past years that would have led proponents of the water-conflict hypothesis to expect serious conflicts to break out. While Lesotho and South Africa have a water sharing arrangement and the required infrastructure in place since the late 1980s and share the Orange River's water resources between them, Botswana – situated further downstream – has been facing a severe drought in the mid-2010s. This drought has challenged water supply in the capital city, put food security seriously at risk and affected the country's overall economic development substantially. Botswana therefore increasingly expressed its interest in and its claims for a share of the river's water. This constellation – in a basin characterized by water scarcity, increasing pressures of global climate change and rapid population growth – did, however, not lead to conflict. The opposite. Mainly in the interest of regional stability – and not related to water per se – the three countries agreed to extend the existing water transfer scheme between Lesotho and South Africa to Botswana and, moreover, to task the river basin organization, ORASECOM, with the preparation of the project, thus allowing all riparian states – including downstream Namibia – to participate in the planning process.

This reconfirms that the simple equation water-related challenges equals insecurity and conflict does not hold. Instead, it is thus evident that **it is the intervening factors that determine the link between water and conflict**. These factors determine whether water-related challenges – most commonly in the form of change (hydrological change, sudden extreme events, increasing water demand due to economic, demographic and life-style changes or change caused by infrastructure development) – lead to conflict (and if so to what extent) or whether they can be prevented or mitigated. They thus also determine which policy action – from short term emergency intervention to long term institution building and from technical capacity building to diplomatic negotiation support – will be effective in a given context.

Water, Peace & Security



This is why the Water, Peace and Security partnership studies the pathways between water and conflict and the intervening factors. Based on this, it also advises relevant stakeholders to take appropriate action to prevent the deterioration of such situations. It does so by providing a comprehensive package of tools and knowledge that allow for global level analyses of potential water-related conflict hotspots and in-depth local analyses of those, for raising awareness among policy makers on required actions and for advice on which options are available to come to agreed action that can address both the natural and the socio-political aspects of the threat and thus ensure security, peace and sustainable development.

References

- Bulloch, J. & Darwish, A. (1993): *Water wars: Coming conflicts in the Middle East*, London: Gollancz
- CNA (2017): *The role of water stress and instability in conflict*, December 2017, https://www.cna.org/CNA_files/pdf/CRM-2017-U-016532-Final.pdf
- Deutsche Welle (DW) (2018): *Laos disaster reveals the ugly side of hydropower in Southeast Asia*, 25 July 2018, <https://www.dw.com/en/laos-disaster-reveals-the-ugly-side-of-hydropower-in-southeast-asia/a-44822877>
- Elhance, A. (1999): *Hydropolitics in the 3rd World: Conflict and Cooperation in International River Basins*, Washington DC: United States Institute of Peace Press
- Frey, F. (1993): The political context of conflict and cooperation over international river basins, *Water International*, 18, 1, 54-68
- Gleditsch, N. (ed.) (1997): *Conflict and the environment*, Dordrecht: NATO ASI Series
- Newsweek (2015): *The World Will Soon be at War Over Water*, 24 April 2015, <https://www.newsweek.com/2015/05/01/world-will-soon-be-war-over-water-324328.html>
- Newsweek (2018): *War for water? Syria, Iraq and Turkey will next fight for rivers, report says*, 27 July 2018, <https://www.newsweek.com/war-water-syria-iraq-turkey-will-next-fight-rivers-report-says-1046349>
- Office of the Director of National Intelligence (2012): *Global water Security*, 2 February 2012, https://www.dni.gov/files/documents/Newsroom/Press%20Releases/ICA_Global%20Water%20Security.pdf
- PBL (2018): *Linking water security threats to conflict*, The Hague, August 2018, http://www.pbl.nl/sites/default/files/cms/publicaties/3039%20Linking%20water%20security%20threats%20to%20conflict_D EF.pdf
- SciDevNet (2018): *Renaissance Dam water conflict will pass down generations*, 13 August 2018, <https://www.scidev.net/global/water/opinion/renaissance-dam-water-conflict-will-pass-down-generations.html>
- Starr, J. (1991): Water wars, *Foreign Policy*, 82, 17-36
- The Guardian (2012): *Water wars between countries could be just around the corner, Davey warns. Energy secretary tells conference that growing pressure on water resources could worsen existing war and lead to new ones*, 22 March 2012, <https://www.theguardian.com/environment/2012/mar/22/water-wars-countries-davey-warns>
- Wolf, A. (1995): *Hydropolitics along the Jordan River: Scarce water and its impact on the Arab-Israeli conflict*, Tokyo: UN University Press
- Wolf, A., Yoffe, S. & Giordano, M. (2003): International waters: Identifying basins at risk, *Water Policy* 5, 29-60