

The Protection of Water During and After Armed Conflicts

This summary report has been prepared by the Geneva Water Hub, as an input paper for the Global High-Level Panel on Water and Peace.

The report provides a summary of a one day senior experts workshop and a conference both convened by the Geneva Water Hub with the Platform for International Water Law of the Faculty of Law of the University of Geneva on 14 June 2016. The analysis, results and recommendations in this paper represent the opinion of the participants and are not necessarily representative of the position of any of the organizations.

The Geneva Water Hub is developing a hydropolitics agenda to better address water-related conflicts and promote water as an instrument of peace (www.genevawaterhub.org) with support of the Swiss Agency for Development and Cooperation (SDC) and the University of Geneva. The analysis and recommendations in this note represent only the opinion of the participants.

This document is a summary paper for the Global High-Level Panel for Water and Peace - it is not intended for wider circulation.

For more information, please reach out to the Geneva Water Hub – Global High-Level Panel on Water & Peace – Secretariat at contact@genevawaterhub.org.

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1. Summary

The role of water in wars has a long history and remains a central problem in a number of current armed conflicts. While water sometimes constitutes a causal factor of disputes (amongst a range of other aspects), it is more often used as a political or military tool during armed conflicts. To improve the understanding of the strategic role that water and water supply infrastructures play in armed conflicts and to reflect on possible ways to improve the protection of water under international law during and after armed conflicts, the Geneva Water Hub, together with Platform for International Water Law of the Faculty of Law of the University of Geneva, convened an expert roundtable on 14 June 2016. A public conference followed the expert roundtable on “Water in Conflicts”. This report summarizes the main discussions and findings of these two events.

The report starts with a brief background on the role of water resources and infrastructures play in armed conflicts, primarily focusing on the current conflicts in the Middle East. A particular feature of these conflicts is the increasing role of non-state actors which, despite their lack of legitimate statehood, aim to provide state-like services. This note then moves to the field of international law and introduces some major principles and rules of International Humanitarian Law (IHL) that protect water during armed conflicts. There are a number of principles and norms that relate directly or indirectly to the protection of freshwater resources, drinking water installations, dams and dykes. These norms are applicable both during international and non-international armed conflicts.

The report also discusses their application and major obstacles of enforcement in current conflicts. The role of water resources in conflict resolution and peacebuilding activities is reflected upon. Water provides a range of potential benefits: it can be used as a platform for cooperation and confidence-building between communities, local authorities and governments. Additionally, providing access to water and other natural resources is a necessary prerequisite for the restoration of agricultural livelihoods and food security, and a crucial part of reintegrating ex-combatants. Water issues have, therefore, also increasingly been incorporated in peace agreements.

The report makes the following recommendations for consideration by the Global High-Level Panel for Water and Peace:

Before an armed conflict:

1. Enhanced cooperation in the management and protection of transboundary water resources is key to ensure international peace and security.
2. Joint institutional mechanisms and common water infrastructures play a crucial role in preventing conflicts over water.
3. Networks of national and local water specialists should be established in times of peace to increase the resilience of water and electrical installations in case of a conflict eruption.

During international and non-international conflicts:

1. The awareness about the principles and rules of IHL protecting water resources during international and non-international armed conflicts has to be increased. The resolution adopted in May 2016 by the United Nations Environment Assembly (UNEA II) on the “Protection of the environment in areas affected by armed conflict” could provide a possible entry point to further the discussion on the protection of water and the environment in armed conflicts, and to raise the issue of water protection to the highest political levels.
2. A list of water and electrical infrastructures that must not be the object of military operations should be developed. When electrical facilities are used to supply water to the civilian population, these installations must not be targeted.
3. Water infrastructures are protected by the same principles and norms during international and non-international armed conflicts. In this context, it is important that the Panel send a strong signal that principles of IHL such as the principles of distinction and proportionality must be applied during both international and non-international armed conflicts. It must be ensured that the populations are never again affected by attacks on water infrastructures which could affect their survival or cause them to move away.
4. Considering the increasing number of non-state actors (NSAs) in armed conflicts, there is a need for a more thorough reflection of the obligations of these actors from the perspective of IHL. Concretely, regarding non-

state actors, the work of the NGO “Geneva Call” which reaches out to NSAs through “Deeds of Commitment” could be a good example to draw upon.

5. A recommendation was made to establish an independent international body aiming at gathering data and information on destruction and cuts of water supplies. This body would focus on humanitarian aid and technical assistance to local companies in water projects during protracted armed conflicts.
6. A mechanism for monitoring the compliance with international humanitarian law and reparation for victims of violations constitute another area in which legal development should be explored. Insufficient respect for applicable rules is the principal cause of suffering during international and non-international armed conflicts. This mechanism should be neutral, independent and impartial. It would be desirable that the mechanism could make legally binding decisions rather than simply being able to make recommendations.
7. River basin organisations such as the Organisation pour la mise en valeur du Fleuve Sénégal (OMVS) were cited as examples of cooperation during armed conflicts. During the conflict between Senegal and Mauritania, the only place where Parties at the conflict could speak was the OMVS. It is interesting to note that water institutions can be “protected from conflicts”.

After an armed conflict:

1. The role of water in post-conflict and peacebuilding initiatives needs to be strengthened. Management and protection of water resources and reparation of water installations should be included in UN peacekeeping missions.
2. Cooperation among relevant actors, including international organisations, should be encouraged, with respect to post-conflict environmental assessments and remedial measures.
3. Water should be included in peace agreements, since it is an important stabilizing factor.

2. Introduction

This report provides a summary of two events convened by the Geneva Water Hub on 14 June 2016: an expert roundtable on “The Protection of Water During and After Armed Conflicts” and a conference on “Water in Conflicts,” where results of the first event were presented and discussed with a broader audience. The aim of both events was to contribute to a better understanding of the strategic role that water and water supply infrastructures play during and after armed conflicts, and to reflect on possible ways to improve water protection under international law.

The structure of the paper follows the sequence of sessions of the roundtable event, starting with the background of how water resources and infrastructure are used in armed conflicts, paying particular attention to the current wars in Syria and Iraq. This is followed by reflections on the principles and rules of international humanitarian law (IHL) protecting water installations and supplies in armed conflicts as well as possible avenues for enhancing the protection of water under international law. Finally, the range of peacebuilding benefits that can be derived through cooperation over water, as well as the role of water during peacekeeping initiatives will be reflected upon. The report concludes with an outline of recommendations for the Global High-Level Panel for Water and Peace presented by the experts during the roundtable discussion.

3. How are Water Supplies and Infrastructure used as Strategies of War

Violence over freshwater resources has a long history and remains an issue of regional and global concern today. In World War II, for example, hydroelectric dams were routinely bombed as (strategic) targets by a number of parties to the conflict. Water has also been used as a weapon in other parts of the world. In the 1990s, Saddam Hussein drained the marshes in southern Iraq to destroy the livelihoods of Shiites to punish them for rising up against his regime.

The strategic role of freshwater in conflicts remains rather prevalent in the total number of observed water-related violent conflicts in recent years (Gleick and Heberger, 2014). While this growing number of cases can probably partly be explained by a bigger awareness of the importance of this resource and better information in this field, at the same time one can observe water-related violence in a number of the most recent conflicts in North Africa and the Middle East. While water in these conflicts is not necessarily a cause of conflict, water is often used as a military or strategic tool.

One can distinguish between different roles that water plays in violent conflict. Firstly, water can be the cause of disputes between different (state or non-state) parties, in this case one would speak of a “water dispute” or “water war” in a narrow sense. Most often, water is one of the contributing factors leading to armed conflict, but not the only one. Inequality in the distribution of natural resources and risks of shortages are among the other contributing causes of tension and conflict between states. The Darfur conflict, characterized by rivalry between local communities and tribes for access to arable land and water resources, is a prime example of such a complex relationship between armed conflict and the access to natural resources (UNEP, 2007). As research since the 1990s has shown, “water wars” have never occurred in modern times and therefore, scholarly discussions have either focused on the cooperation potential of water resources (Wolf et al., 2003) or the role of water as a weapon or military target (Gleick and Heberger, 2014). Furthermore, as intra-state water conflicts seem to be the most frequent form of water-related conflicts, much of the discussion that, for a long time, focused on inter-state conflicts has also shifted.

Based on the observation that water is an issue of international peace and security, and that current armed conflicts are increasingly happening at the intra-state level, the discussion during the first part of the roundtable focused on these new conflict trends. In doing so, it dedicated particular attention to the ongoing armed conflicts in Iraq and Syria. In both countries, state and non-state armed groups have repeatedly targeted water infrastructures, such as water treatment plants, piping systems and storage facilities.

During the discussion particular attention was paid to the role of the Islamic State (IS), which since 2014 has seized large parts of Syria and Iraq. In the course of their military advances, the armed groups have seized a number of important dams on the Euphrates and Tigris Rivers and repeatedly used water as a weapon against armed forces and the civilian populations (von Lossow, 2016). The meeting also discussed that most of the 450 000 civilians under siege in Syria are due to the governmental forces and affiliated militias. Taking control of water resources along rivers, particularly in the upstream stretches, provides an important strategic dimension for water in conflicts, as the force exercising control over such water resources can harm downstream areas (e.g. through withholding runoff or releasing too much water causing floods). IS has used water as a weapon in three different ways: by withholding water, by flooding, and by contaminating water supplies. For example, after capturing Fallujah Dam in early 2014, IS first closed the floodgates before reopening them and flooding large areas downstream to stop advancing government forces. In doing so, they caused significant harm to farmland, livestock and infrastructure between Fallujah and Abu Ghraib.

While using water as a military tool, IS, at the same time, is also interested in protecting water resources and infrastructure to ensure a reliable supply of water and electricity to the population in order to legitimize its presence and to establish a state-like functioning entity (caliphate). Furthermore, the group also generates revenue from water (and electricity) services provided within the territories controlled by them. In this context, IS represents a type of “hybrid actor”, oscillating between armed group and service provider.

Although the anti-IS coalition has been able to regain control of a number of significant dams along the Euphrates and Tigris, the Tabqa dam in Syria still remains under their control. There is a danger that if IS is forced to withdraw from these areas, the group could open the floodgates of the dams under its control to flood downstream areas as a last display of its power. This, in turn, would have serious and incalculable humanitarian consequences.

With regard to potential measures that can be employed to protect water infrastructure and the civilian population dependent on them, it was concluded that so far only the military interventions by a US-led anti-IS coalition have shown some success, regaining control of a number of dams that were previously held by IS. Considering that this military intervention has been launched without any UN mandate, the question of the legitimacy of these interventions was raised. The subject was taken up again in the second part of the roundtable, during which the legal perspective was more closely examined.

While the actors of these new types of conflicts are an important factor, the participants also discussed the fact that international and non-international armed conflicts, such as those observed in the Middle East, are also increasingly being fought in urban areas where water resources are crucial for a number of adjacent services, and where water delivery systems are intertwined with other infrastructures that may themselves be legitimate targets. For example, water storage and delivery systems in cities like pumping stations or purification plants very often depend on electrical systems. Longer power disruptions as a result of armed conflicts will therefore often result in temporary or long-term water interruptions for the civilian population, also impacting other urban infrastructure like health care or education. These interconnecting factors increase the vulnerability of water delivery systems in times of armed conflicts. The experts therefore discussed possible entry points for increasing the resilience of critical infrastructure in urban centres, and for improving the humanitarian situation of civilian populations in conflict settings. Based on the experience of

the International Commission of the Red Cross (ICRC) in Iraq and Syria, it was recognized that the success of the ICRC's work has been based on the long-term presence of such organizations in the region, particularly their involvement in the field prior to the outbreak of the conflict itself. Such organizations have built up well-established networks and good relations with local actors. Only where reliable partners (e.g. in form of water boards) exist, the ICRC is able to deliver drinking water and provide other humanitarian aid.

Establishing and strengthening ties with local organizations and networks was therefore identified as an important aspect in improving the protection of water infrastructure during armed conflicts. In this context, there was criticism that local capacities in Syria have to date not been sufficiently recognized as partners by the international aid community. It was furthermore discussed that more accurate information on the damage to water infrastructure and a better knowledge of the situation on the ground are required to tailor humanitarian interventions in Syria and Iraq. For example, by clearly marking water facilities on publicly available maps (e.g. in the form of three orange circles suggested in Article 17 of *Annex 1 of the 1977 Additional Protocol to the Geneva Conventions of 12 August 1949 and Relating to the Protection of Victims of International Armed Conflicts* (hereinafter First Protocol)), the information would be more likely to come to the attention of the armed parties involved and increase the protection of water facilities during armed conflicts. Drawing a list of water and electrical facilities would also confer a protection against military attacks to specific objects that are essential for the delivery of water services to the population.

Finally, the role of religion was briefly reflected upon during the discussion. The question of whether and how religion could be used to persuade or raise awareness of groups such as IS to better protect water resource infrastructure during conflicts was raised. While there was a lot of scepticism over whether this would be feasible – considering that some armed groups might not really rely on religious principles if it does not serve their interests and it could also enlarge religious divisions – it was agreed upon that water has an important spiritual side that is often neglected and that it could, under specific circumstances, help to build bridges between religions. It was finally stressed that in order to “get a foot in the door” with groups like IS, and to be able to improve the humanitarian situation of civilians, one would have to, at least to some degree, use Islamic principles as a basis for discussion. However, it was also acknowledged that this would require more in-depth knowledge and insight into the compatibilities of humanitarian and religious (Islamic) law as a basis of a more informed discussion for possible entry points¹.

4. Does International Humanitarian Law Provide Sufficient Protection for Water in the Different Roles that it May Play in Armed Conflict?

The second part of the roundtable discussion focused on the principles and rules of IHL that protect water during armed conflicts (see Annex 1 for a list of relevant instruments dealing with the protection of water during and after armed conflicts). There are a number of principles and norms that relate directly or indirectly to the protection of freshwater resources and water infrastructures. The introductory presentation to this session proposed two possible ways to approach the subject of water in conflicts and international law: either by talking about compliance with existing principles of IHL (assuming that the body of law is sufficient to protect water resources) or, arguing that the international regime protecting water resources and installations should develop a more coherent regime and create additional complementary norms. The experts agreed that the issue of compliance with norms of IHL should be part of the recommendations of the Panel.

The next discussion reflected on the main principles of international law applicable to the protection of water facilities which are based on IHL, Human Rights Law (HRL) and, to a lesser degree, on International Environmental Law (IEL). The exchanges on the IHL principles and rules focused on the conduct of hostilities rules such as the principles of *distinction*, *proportionality*, and *precautionary measures* as well as specific norms pertaining to the protection of water in its different roles.

First, the principle of distinction stipulates that in times of war one has to distinguish between military objectives and combatants on the one hand and civilians and civilian objects, on the other hand, and, that only the former are legitimate military targets. Precisely, Article 52 of the First Protocol defines a legitimate military target as one “which by [its] nature, location, purpose, or use makes an effective contribution to military action and whose total or partial

¹ In this regard see the ICRC publications on IHL and Islamic law available at: www.icrc.org/en/international-review/article/islam-and-international-law

destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.” Consequently, an attack by any armed group or force requires that it meet the above conditions. This said, in the case of water installations such as dams, Article 56 of the First Protocol and Article 15 of the Second Protocol states that these installations “shall not be made the object of attack, ***even where these objectives are military objectives***, if such attacks may cause the release of dangerous forces and consequent severe losses among the civilian population.”

The lawful targeting of military objectives is further restricted by the principle of *proportionality*, which prohibits an attack against such objectives if this is expected “to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated” (Art. 51 (5) (b) of the First Protocol). The discussion revealed that defining a legitimate military target or assessing proportionality can be difficult in specific contexts, including when it comes to water resources. For example, if groundwater resources are in the surrounding area of a military facility, would the attack of the latter be proportionate? The answer to such a question is likely to depend on a number of issues, such as the information available to a military commander at the time of an attack. It was however stressed that any military commander has a legal obligation to weigh the relative military advantages of an attack against the potential damage to civilian objects, and also to gather adequate information on potential indirect effects, as required under the additional rules on precautions (Art. 57 of the First Protocol).

Within the debate on the principles of distinction and proportionality, the suggestion to draw-up a list of water infrastructure that must not be considered military targets was discussed². Such a list could contain electrical facilities, sewage and treatment installations, and consumables which are necessary for the delivery of water services to the population. Although a number of problems would come with such a list – such as the inherent risks that the objects listed could become specific targets, as well as the very large number of objects that have both a civilian as well as a military use – there was agreement that the exercise of drafting such a list could be useful as a practice to consider the different purposes of water infrastructure in urban conflicts and to reflect on existing norms. In addition to the existing norms of IHL referring to the protection of dams, dikes and objects indispensable to the survival of the civilian population³, the list could contain additional objects related to water and electricity that must not be targeted during armed conflicts for their direct and indirect impacts on the civilian population. This list would reflect an agreement between the parties of a conflict to spare these facilities. Nevertheless, it was recognized that it would ultimately be very difficult to define a list that the international community could agree upon.

Finally, some military manuals define the principle of *military necessity*. For example, the US Navy Manual states that a combatant may only use the level of force “required for the partial or complete submission of the enemy with a minimum expenditure of time, life and physical resources” (US Navy, 2007: 5-2). In other words, military necessity means that combatants can do whatever is necessary to achieve their legitimate military objective, provided that they do not violate any other rules of IHL. Although at first glance the principle seems to provide an attacker with the right to apply any measures that are required to successfully conclude a military operation, the principle is nevertheless subject to a number of restrictions. For instance, the attacks against hydropower dams in the German Ruhr area by the British Royal Air force (the so-called “dam busters”) had been regarded as legitimate military targets under the military necessity requirement at the time. However, as these attacks also caused devastating floods and the deaths of over a thousand civilians, it is questionable whether these attacks did not violate the norms of distinction and proportionality. Also, the practice of organizing a siege of a city employed by different non-state armed groups as well

² The debate over proceeding through lists dates back to the discussions within the delegations who drafted the First Protocol (for example whether Article 52 should contain a list of military objectives, an option which was not retained).

³ It is prohibited to attack “works or installations containing dangerous forces, namely dams, dykes [...] even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population” (Art. 56 of the First Protocol, see also Art. 15 of the Second Protocol). Moreover, “it is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive” (Art. 54 of the First Protocol, see also Art. 14 of the Second Protocol).

as governmental forces in the current conflicts constitutes a violation of the IHL and violates the prohibition to use starvation as method of war.

As non-state actors like IS increasingly exercise effective control over large land areas, where they also control important water infrastructures, it was pointed out that beyond the above outlined principles, the law of occupation may also apply provided that the conflict is of an international character through a foreign army occupying a part of the territory of another state, a condition which is not met in the case of IS in Syria or Iraq.

Referring back to the discussion about water infrastructures and the fact that IS controls dams without actually being able to operate them (lack of technical expertise), the question was raised whether IS would, under current international law, have to accept external help to be able to operate water infrastructures (like dams) for humanitarian purposes. It was argued that the principle of precaution could apply, requiring IS to accept such assistance in order to avoid harm that could be caused to civilians by non-action. Having said this, in practical terms, it would virtually be impossible to find national or international actors that would willingly supply such technical and financial support and that these actors could themselves face prosecution for, for instance, supporting terrorist groups.

During the discussions it was furthermore noted that the main purpose of international humanitarian law so far has not been to protect water or water facilities during war per se, but rather in relation to the civilian population dependent upon them for its survival or for the harm it may cause (Articles 54 and 56 of the First Protocol and Articles 14 and 15 of the Second Protocol). Natural resources and the environment are only protected by few and rather weak legal provisions during international armed conflicts (Arts. 35.3 and 55 of the First Protocol).⁴ The prohibition of causing widespread, long-term and serious damage enshrined in Articles 35.3 and 55 of the First Protocol of 1977 is part of the body of rules applicable only to international armed conflicts. Non-international armed conflicts are not, however, free from any legal constraints. The International Court of Justice (ICJ) recalled that “States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives.”⁵ The principles of necessity and proportionality must incorporate environmental considerations. This being said, the lack of specific provisions on the environment is a major weakness of the legal regime applicable to non-international armed conflicts.

The rules of IHL have been developed partly to minimize suffering of the civilian population and, therefore, the environment has not been a prioritized concern. However, as human dependence on a healthy environment is increasingly recognized, there is a need to re-think these rules and allow IEL to inform the application of IHL. Principles and norms of IEL should also inform the application of Article 8 (2) (b) (iv) of the Rome Statute of the International Criminal Court (ICC, 1998) which states that “intentionally launching an attack in the knowledge that such attack will cause widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated” constitutes a war crime.

Referring back to the observation made during the first part of the roundtable discussion, namely that urban areas are increasingly the venue of current conflicts, potential norms strengthening the protection of water and electrical installations were reflected upon. While there is neither a specific law forbidding fighting in urban areas nor specific principles applicable to conflicts in cities, the same IHL principles as in any other context apply putting greater duties of parties to the conflict in urban areas.

Overall, it was concluded that from an international law perspective it is more valuable to focus on how specific norms of IHL should be interpreted and, even more importantly, how to strengthen compliance with these norms instead of formulating new rules or conventions.

⁴ Article 35.3 prohibits “to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.” Article 55 states that: “1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural and thereby to prejudice the health or survival of the population.2. Attacks against the natural environment by way of reprisals are prohibited.”

⁵ ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, *I.C.J. Reports 1996*, p. 226 at para. 30. See M. Tignino, *Water During and After Armed Conflicts. What Protection in International Law?*, Brill Research Perspectives in International Water Law, vol. 1 (4), 2016, pp. 24-25.

5. Enhancing the Protection of Water During and After Armed Conflicts Under Peacebuilding, Cooperation, and Enforcement Frameworks

The introductory session to this last part of the roundtable discussion emphasized that the issue of water in conflicts and peacebuilding has received increasing attention at the global level, and that a number of important milestones have already been reached. Among them the UN Secretary-General's report on peacebuilding from 2009, which lists the provision of basic water and sanitation services as a priority in the immediate aftermath of conflict; the resolution on access to safe drinking water and sanitation as a human right that was adopted by the UN General Assembly in 2010 (UN General Assembly, 2010); and the Sustainable Development Goals (SDGs) adopted in 2015 which, among other issues, focus on the availability and sustainable management of water and sanitation (Goal 6).

Despite these milestones, water resources and infrastructure are still threatened in many conflicts today. Conflicts impact water in numerous ways: impacts include a number of direct effects arising from military action such as toxic hazards, weapons and military operations or collateral damage. They furthermore comprise indirect impacts, such as the breakdown of institutions and infrastructure, which can create longer-term environmental problems impacting human health, livelihoods and economic development for decades to come.

Water therefore not only requires attention during armed conflicts, but also in the aftermath of conflicts and during peacebuilding operations. Water issues are today more reflected in peace agreements than they have been in past decades. Since 2005, natural resource provisions have been included in all major peace agreements and eleven of these agreements have even made specific reference to water issues (UN DPA & UNEP, 2015). Although these peace agreements sometimes establish processes to address water-related problems, which themselves have in some cases been underlying causes or aggravating factors in the preceding conflicts, they usually do not contain any monitoring or implementation mechanisms. A range of additional factors complicate the restoration of water services and infrastructure in post-conflict peacebuilding contexts. For example, in many cases there is a lack of information and baseline data regarding water quantity and quality, and on the condition of essential water infrastructure. Furthermore, in many post-conflict contexts a large number of actors provide different water services, often with the tendency to bypass (weak) state actors, hence failing to contribute to long-term development.

Considering the range of peacebuilding benefits that can be derived through cooperation over water issues, it was stated that a greater focus should be put on water in post-conflict and peacebuilding contexts. As such, water can be used as a platform for cooperation and confidence building between communities, local authorities and governments. Additionally, providing access to water and other natural resources is a necessary prerequisite for the restoration of agricultural livelihoods and food security, and a crucial part of reintegrating ex-combatants.

During the further discussion, three main questions were addressed:

1) **Is there room for the development of an international instrument on the protection of water during and after conflict?**

It was argued that such convention should exclude issues of compensation for any violation committed as well as criminal prosecution as these constitute a red line for many countries. In this context the idea of the development of an international fund was raised (through which urgent environmental assistance could be financed).

It was furthermore stressed that more systematic monitoring of damage to infrastructure has to be conducted during conflicts to be able to tailor humanitarian assistance. In establishing such a monitoring mechanism states should consider a number of issues: it should focus on broader environmental and conflict issues (not narrowly on water) and also be based on cooperation between state actors and civil society.

Another possible entry point for the development of an international instrument mentioned during the discussion was the United Nations Environment Assembly (UNEA) resolution on the "Protection of the environment in areas affected by armed conflict". The resolution, which was proposed by Ukraine and co-sponsored by the Democratic Republic of Congo, Jordan, Iraq, South Sudan, Norway, Lebanon, Canada and the EU and its Member States, was adopted by consensus at UNEA-2 in May 2016. The UNEA resolution urges states to comply with the environmental provisions of IHL, among other things. It was argued that one advantage of the UNEA resolution is that such an approach would not only include legal experts but a broad range of other societal actors and encourage states to take ownership of any subsequent process.

It was agreed upon that any possible international instrument should not narrowly focus on water resources but rather take a broader approach of environmental aspects. Cooperation with local actors is

essential to ensure the delivery of water services which depend not only on the resource, hardware and consumables but also on the maintenance staff. Protection of the water source, a water treatment plant or a reservoir is of little use if the distribution network is destroyed and vice versa. The 2015 ICRC Report calls for the acknowledgement of “the complexity of urban systems and their dependence on large-scale, interconnected infrastructures that rely on the availability of qualified staff to ensure service delivery” (ICRC, 2015: 5).

2) Is water included in peace treaties concluded after an armed conflict? And how could such treaties be implemented?

Water has been integrated into some peace treaties, for example, the Darfur Peace Agreement, concluded between the Government of the Sudan, the Sudan Liberation Movement/Army, and the Justice and Equality Movement in 2006 (Darfur Peace Agreement 2006). However, the aspects integrated in peace treaties often lack any means of implementation on the ground. The reasons for this are diverse, but one problem is that there is often a disconnection between the people that negotiate and draft peace agreements and those responsible for their implementation. A further problem is the lack of interest and resources for monitoring and implementation. Considering that it is not always in the interest of state actors to implement peace treaties and to provide the necessary funding for the collection of field data, the question was raised as to how financial and technical resources could be mobilized.

3) Do judicial and quasi-judicial bodies play a role in the promotion of the respect of international law during and after international and non-international armed conflict?

The example of a London based NGO from Syria, the Syrian Observatory for Human Rights (SOHR), which gathers data for the purpose of collecting evidence for possible post-war prosecution, was mentioned. The organization relies on a network of local people that regularly report on attacks, numbers of dead or injured civilians and other war issues. Despite the problem of verifying sources, it was discussed how such networks could be supported and whether such a trend could be replicated in other war areas.

6. Recommendations for the Global High-Level Panel for Water and Peace

Based on the discussions outlined in the previous paragraphs, a number of recommendations were made for consideration by the Global High-Level Panel for Water and Peace:

Before an armed conflict:

1. Enhanced cooperation in the management and protection of transboundary water resources is key to ensure international peace and security.
2. Joint institutional mechanisms and common water infrastructures play a crucial role in preventing conflicts over water.
3. Networks of national and local water specialists should be established in times of peace to increase the resilience of water and electrical installations in case of a conflict eruption.

During international and non-international conflicts:

1. The awareness about the principles and rules of IHL protecting water resources during international and non-international armed conflicts has to be increased. The resolution adopted in May 2016 by the United Nations Environment Assembly (UNEA II) on the “Protection of the environment in areas affected by armed conflict” could provide a possible entry point to further the discussion on the protection of water and the environment in armed conflicts, and to raise the issue of water protection to the highest political levels.
2. A list of water and electrical infrastructures that must not be the object of military operations should be developed. When electrical facilities are used to supply water to the civilian population, these installations must not be targeted.
3. Water infrastructures are protected by the same principles and norms during international and non-international armed conflicts. In this context, it is important that the Panel send a strong signal that principles of IHL such as the principles of distinction and proportionality must be applied during both international and non-international armed conflicts. It must be ensured that the populations are never again affected by attacks on water infrastructures which could affect their survival or cause them to move away.
4. Considering the increasing number of non-state actors (NSAs) in armed conflicts, there is a need for a more thorough reflection of the obligations of these actors from the perspective of IHL. Concretely, regarding non-state actors, the work of the NGO “Geneva Call” which reaches out to NSAs through “Deeds of Commitment” could be a good example to draw upon.
5. A recommendation was made to establish an independent international body aiming at gathering data and information on destruction and cuts of water supplies. This body would focus on humanitarian aid and technical assistance to local companies in water projects during protracted armed conflicts.
6. A mechanism for monitoring the compliance with international humanitarian law and reparation for victims of violations constitute another area in which legal development should be explored. Insufficient respect for applicable rules is the principal cause of suffering during international and non-international armed conflicts. This mechanism should be neutral, independent and impartial. It would be desirable that the mechanism could make legally binding decisions rather than simply being able to make recommendations.
7. River basin organisations such as the Organisation pour la mise en valeur du Fleuve Sénégal (OMVS) were cited as examples of cooperation during armed conflicts. During the conflict between Senegal and Mauritania, the only place where Parties at the conflict could speak was the OMVS. It is interesting to note that water institutions can be “protected from conflicts”.

After an armed conflict:

1. The role of water in post-conflict and peacebuilding initiatives needs to be strengthened. Management and protection of water resources and reparation of water installations should be included in UN peacekeeping missions.
2. Cooperation among relevant actors, including international organisations, should be encouraged, with respect to post-conflict environmental assessments and remedial measures.
3. Water should be included in peace agreements, since it is an important stabilizing factor.

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21	Weir, Doug	Toxic Remnants of War

Annex I: Relevant Legal Documents

1. Convention (IV) Relative to the Protection of Civilian Persons in Time of War, Geneva, 12 August 1949.
2. International Law Association, “Resolution on the Protection of Water Resources and Water Installations in Times of Armed Conflict” (1976).
3. Protocol Additional to the Geneva Conventions, relating to the Protection of Victims of International Armed Conflicts, (First Protocol), 8 June 1977.
4. Protocol Additional to the Geneva Conventions, relating to the Protection of Victims of Non-International Armed Conflicts, (Second Protocol), 8 June 1977.
5. Annex I to Protocol Additional I to the Geneva Conventions of 1949: Regulations concerning identification, as amended on 30 November 1993.
6. United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (1997).
7. Statute of the International Criminal Court (ICC, 1998).
8. United Nations Committee on Economic, Social and Cultural Rights, General Comment No.15: The Right to Water (Arts. 11 and 12 of the Covenant on Economic, Social and Cultural Rights (2002).
9. International Law Association, “Revision of the Helsinki and other International Law Association Rules on International Water Resources” (2004).

1) Convention (IV) Relative to the Protection of Civilian Persons in Time of War, Geneva, 12 August 1949

Article 53 – Prohibited destruction

Any destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations.

Article 55 – Food and medical supplies for the population

1. To the fullest extent of the means available to it, the Occupying Power has the duty of ensuring the food and medical supplies of the population; it should, in particular, bring in the necessary foodstuffs, medical stores and other articles if the resources of the occupied territory are inadequate.

2. The Occupying power may not requisition foodstuffs, articles or medical supplies available in the occupied territory, except for use by the occupation forces and administration personnel, and then only if the requirements of the civilian population have been taken into account.

Article 56 – Hygiene and public health

To the fullest extent of the means available to it, the Occupying Power has the duty of ensuring and maintaining, with the cooperation of national and local authorities, the medical and hospital establishments and services, public health and hygiene in the occupied territory, with particular reference to the adoption and application of the prophylactic and preventive measures necessary to combat the spread of contagious diseases and epidemics. Medical personnel of all categories shall be allowed to carry out their duties.

2) International Law Association, “Resolution on the Protection of Water Resources and Water Installations in Times of Armed Conflict” (1976)

Article I

Water which is indispensable for the health and survival of the civilian population should not be poisoned or rendered otherwise unfit for human consumption.

Article II

Water supply installations which are indispensable for the minimum conditions of survival of the civilian population should not be cut off or destroyed.

Article III

The diversion of waters for military purposes should be prohibited when it would cause disproportionate suffering to the civilian population or substantial damage to the ecological balance of the area concerned. A diversion that is carried out in order to damage or destroy the minimum conditions of survival of the civilian population or the basic ecological balance of the area concerned or in order to terrorize the population should be prohibited in any case.

Article IV

The destruction of water installations such as dams and dikes which contain dangerous forces, should be prohibited when such destruction might involve grave dangers to the civilian population or substantial damage to the basic ecological balance.

Article V

The causing of floods as well as any other interference with the hydrologic balance by means not mentioned in articles II to IV should be prohibited when it involves grave dangers to the civilian population or substantial damage to the ecological balance of the area concerned.

Article VI

1. The prohibitions contained in articles I to V above should be applied also in occupied enemy territories.
2. The occupying power should administer enemy property according to the indispensable requirements of the hydrologic balance.
3. In occupied territories, seizure, destruction or intentional damage to water installations should be prohibited when their integral maintenance and effectiveness would be vital to the health and survival of the civilian population.

Article VII

The effect of the outbreak of war on the validity of treaties or of parts thereof concerning the use of water resources should not be termination but only suspension. Such suspension should take place only when the purpose of the war or military necessity imperatively demand the suspension and when the minimum requirements of subsistence for the civil population are safeguarded.

Article VIII

1. It should be prohibited to deprive, by the provisions of a peace treaty or similar instrument, a people of its water resources to such an extent that a threat to the health or to the economic or physical conditions of survival is created.
2. When, as the result of the fixing of a new frontier, the hydraulic system in the territory of one State is dependent on works established in the territory of another State, arrangements should be made for the safeguarding of uninterrupted delivery of water supplies indispensable for the vital needs of the people.

3) Protocol Additional to the Geneva Conventions, relating to the Protection of Victims of International Armed Conflicts (1977)

Article 35 – Basic Rules

1. In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.
2. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.
3. It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

Article 48 – Basic Rule

In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.

Article 52 – General Protection of Civilian Objects

1. Civilian objects shall not be the object of attack or of reprisals. Civilian objects are all objects which are not military objectives as defined in paragraph 2.
2. Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.
3. In case of doubt whether an object which is normally dedicated to civilian purposes, such as a place of worship, a house or other dwelling or a school, is being used to make an effective contribution to military action, it shall be presumed not to be so used.

Article 54 - Protection of objects indispensable to the survival of the civilian population

1. Starvation of civilians as a method of warfare is prohibited.
2. It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive.
3. The prohibitions in paragraph 2 shall not apply to such of the objects covered by it as are used by an adverse Party: (a) as sustenance solely for the members of its armed forces; (b) if not as sustenance, then in direct support of military action, provided, however, that in no event shall actions against these objects be taken which may be expected to leave the civilian population with such inadequate food or water as to cause its starvation or force its movement.
4. These objects shall not be made the object of reprisals.
5. In recognition of the vital requirements of any Party to the conflict in the defence of its national territory against invasion, derogation from the prohibitions contained in paragraph 2 may be made by a Party to the conflict within such territory under its own control where required by imperative military necessity.

Article 55 - Protection of the natural environment

1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.
2. Attacks against the natural environment by way of reprisals are prohibited.

Article 56 - Protection of works and installations containing dangerous forces

1. Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.
2. The special protection against attack provided by paragraph 1 shall cease: (a) for a dam or a dyke only if it is used for other than its normal function and in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support; (b) for a nuclear electrical generating station only if it provides electric power in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support; (c) for other military objectives located at or in the vicinity of these works or installations only if they are used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.
3. In all cases, the civilian population and individual civilians shall remain entitled to all the protection accorded them by international law, including the protection of the precautionary measures provided for in Article 57. If the protection ceases and any of the works, installations or military objectives mentioned in paragraph 1 is attacked, all practical precautions shall be taken to avoid the release of the dangerous forces.
4. It is prohibited to make any of the works, installations or military objectives mentioned in paragraph 1 the object of reprisals.
5. The Parties to the conflict shall endeavour to avoid locating any military objectives in the vicinity of the works or installations mentioned in paragraph 1. Nevertheless, installations erected for the sole purpose of defending the protected works or installations from attack are permissible and shall not themselves be made the object of attack, provided that they are not used in hostilities except for defensive actions necessary to respond to attacks against the protected works or installations and that their armament is limited to weapons capable only of repelling hostile action against the protected works or installations.
6. The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces.
7. In order to facilitate the identification of the objects protected by this article, the Parties to the conflict may mark them with a special sign consisting of a group of three bright orange circles placed on the same axis, as specified in Article 16 of Annex I to this Protocol [Article 17 of Amended Annex]. The absence of such marking in no way relieves any Party to the conflict of its obligations under this Article.

4) Protocol Additional to the Geneva Conventions, relating to the Protection of Victims of Non-International Armed Conflicts (1977)

Article 14 - Protection of objects indispensable to the survival of the civilian population

Starvation of civilians as a method of combat is prohibited. It is therefore prohibited to attack, destroy, remove or render useless, for that purpose, objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works.

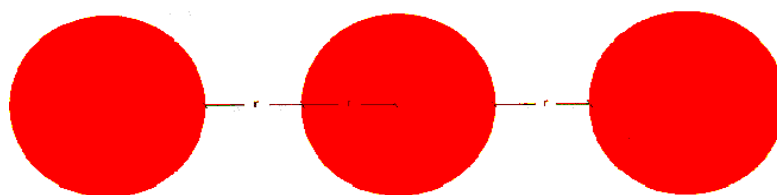
Article 15 - Protection of works and installations containing dangerous forces

Works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population.

5) Annex I to Protocol Additional I to the Geneva Conventions of 1949: Regulations concerning identification, as amended on 30 November 1993

Article 17 - International special sign

1. The international special sign for works and installations containing dangerous forces, as provided for in Article 56, paragraph 7, of the Protocol, shall be a group of three bright orange circles of equal size, placed on the same axis, the distance between each circle being one radius, in accordance with Figure 5 illustrated below.



2. The sign shall be as large as appropriate under the circumstances. When displayed over an extended surface it may be repeated as often as appropriate under the circumstances. It shall, whenever possible, be displayed on flat surfaces or on flags so as to be visible from as many directions and from as far away as possible.

3. On a flag, the distance between the outer limits of the sign and the adjacent sides of the flag shall be one radius of a circle. The flag shall be rectangular and shall have a white ground.

4. At night or when visibility is reduced, the sign may be lighted or illuminated. It may also be made of materials rendering it recognizable by technical means of detection.

6) United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (1997)

Article 29 - International watercourses and installations in time of armed conflict

International watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non- international armed conflict and shall not be used in violation of those principles and rules.

7) Statute of the International Criminal Court (1998)

Article 8 – War crimes

2. For the purpose of this Statute, “war crimes” means:

(a) Grave breaches of the Geneva Conventions of 12 August 1949, namely, any of the following acts against persons or property protected under the provisions of the relevant Geneva Convention:

(iv) Extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly;

(b) Other serious violations of the laws and customs applicable in international armed conflict, within the established framework of international law, namely, any of the following acts:

(ii) Intentionally directing attacks against civilian objects, that is, objects which are not military objectives;

(iv) Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated;

(xxv) Intentionally using starvation of civilians as a method of warfare by depriving them of objects indispensable to their survival, including wilfully impeding relief supplies as provided for under the Geneva Conventions;

[...]

(e) Other serious violations of the laws and customs applicable in armed conflicts not of an international character, within the established framework of international law, namely, any of the following acts:

(xii) Destroying or seizing the property of an adversary unless such destruction or seizure be imperatively demanded by the necessities of the conflict.

8) General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant on Economic, Social and Cultural Rights) (2002)

22. The Committee notes during armed conflicts, emergency situations and natural disasters, the right to water embraces those obligations by which States parties are bound under international humanitarian law. This includes protection of objects indispensable for survival of the civilian population, including drinking water installations and supplies and irrigation works, protection of the natural environment against widespread, long-term and severe damage and ensuring that civilians, internees and prisoners have access to adequate water.

9) *International Law Association, “Revision of the Helsinki and other International Law Association Rules on International Water Resources” (2004)*

Article 52 – Ecological targets

Combatants shall not, for military purposes or as reprisals, destroy or divert waters, or destroy water installations, when such acts would cause widespread, long-term, and severe eco-logical damage prejudicial to the health or survival of the population or if such acts would fundamentally impair the ecological integrity of waters.

Article 54 – Occupied territories

1. An occupying State shall administer water resources in an occupied territory in a way that ensures the sustainable use of the water resources and that minimizes environmental harm.
2. An occupying State shall protect water installations and ensure an adequate water supply to the population of an occupied territory.

Article 55 - Effect of War or Armed Conflict on Water Treaties

1. Treaties creating legal regimes for an international watercourse or part thereof are not terminated by war or armed conflict between the parties to the treaty.
2. Such Treaties or parts thereof shall be suspended only where military necessity requires suspension and where suspension does not violate any provision of this Chapter.