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The Impact of Water Weaponization on Human Security: A Case Study in the Sahel

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Abstract

Climate change and armed conflict are two concepts that are increasingly linked together in today's world, and even more so in regions where natural resources are already scarce to begin with. This research aims to give perspective on one of the phenomena that takes advantage of both armed conflict as well as climate change: water weaponization. King's (2023) framework of water weaponization is used to analyse whether this has an impact on the human security in the Sahel region in Africa. The human security theory is used in order to provide a much-needed personal perspective of this increasingly popular nexus. Through discourse and content analysis on NGO output, this research strives towards answering the following question: How does the weaponization of climate change impact human security in the Sahel according to NGOs? After a thorough analysis of the documents, it is concluded that food security seems to be most impacted by water weaponization in the Sahel. However, since the scholarship on the topic is still very limited, more research is needed in order to draw more valid conclusions.

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1. Introduction

The fourth largest lake in the continent of Africa, Lake Chad, is drying up. Starting in the 1960s, the lake has shrunk by approximately 90% due to intensive use of the body of water as well as the effects of climate change (Riebe & Dressel, 2021; Usigbe, 2019). While the lake's basin covers a wider area, the lake itself is located within the national borders of Cameroon, Chad, Niger and Nigeria, and the drying conditions of the lake have had a massive impact on the area (Asah, 2015; Riebe & Dressel, 2021). In part, this immense impact leading to one of the most severe humanitarian crises in the world, which can contribute to the growing insurgency led by extremist organisation Boko Haram that has brought increasing conflict to the region (Usigbe, 2019; Kusumawardani, 2017). Due to the region's high dependency on the fresh water provided by the lake, which is now largely controlled by Boko Haram, the insurgent organisation holds power over the local population dependent on the resource. This way, the climate change-induced water scarcity can be used for strategic goals set by the organisation.

On top of this crisis, the Sahel houses another one east of the Lake Chad Basin: The Central Sahel Crisis, which takes place in an area including Burkina Faso, Mali and Niger – making this the second conflict in which the people of Niger are involved. In this conflict, climate change also plays a significant role, and where in the previously described conflict the lake is drying up, there is not such a massive body of water available here to provide drinking water. The “unpredictable weather patterns, droughts, floods and land degradation” all have their added influence on the people living in the Central Sahel (UNHCR, 2020, p. 1). On top of this, the threat posed by violence and economic insecurity has caused millions of people to flee their homes, which makes them either internally displaced or refugees in neighbouring countries, leading to another humanitarian crisis (UNHCR, 2020). With these two humanitarian crises going on in the Sahel region, an area clearly heavily impacted by conflict and climate

change, it is no surprise that these countries are among the ones with the lowest development indicators in the world (UNICEF, 2020). Therefore, it is important to better understand the nexus between armed conflict and climate change in order to be able to better deal with the impacts of the climate-conflict nexus. In order to provide in such an understanding, this dissertation takes this important nexus as a starting point of its research.

Climate change has, ever since its global discovery in the 1970s and 1980s, increasingly sparked interest, both politically and academically speaking (Gupta, 2010). Since then, many different actors have engaged with the concept, from academics to politicians, and from laypeople to environmental experts (Gupta, 2010, O'Neill et al., 2020). Over time, all these different people have held various opinions about the topic, but some have managed to use this phenomenon to their advantage, and among them are insurgent groups, as in the first example above. These organisations have managed to use essential natural resources, such as water, to serve their own political or military objectives in the insurgencies they lead. An example of this would be using drought and water scarcity in their recruitment campaigns and other political efforts. In order to shed more light on this phenomenon, this dissertation examines how this weaponization of water impacts human security, with a focus on one case study on the Sahel region in Africa, with specific attention for the cases of the Central Sahel crisis and the Lake Chad conflict, which is analysed through the perspective of non-governmental organisations (NGOs). This is done by analysing NGO output in light of the human security theory and King's (2023) theory on water weaponization. This research could prove useful in filling the immense gap in case studies on the personal level surrounding the climate-security nexus identified by Su & Gagné (2019) as well as the gap of water weaponization in general. This because the literature on the topic is incredibly limited and therefore the phenomenon is extremely understudied (King, 2023). Additionally, a clearer understanding of this impact of weaponization of natural

resources – and more specifically water – on human security could very well contribute to the development of policies better able to mitigate this impact.

The first chapter of the dissertation presents an overview of academic debates surrounding the climate-security nexus, and more specifically the relationship between climate change and armed conflict, while it works towards the main theory presented on water weaponization developed by Marcus D. King, a leading scholar on the topic (King, 2015; King & Burnell, 2017; King, 2023). In the next section, the human security will be elaborated upon in order to provide a theoretical framework that can be applied to analyse the human security in the Sahel. The following section discusses the methodological aspects of the research and aims to provide clarity regarding reliability and validity. Here, a rationalisation behind the case study selection as well as the selection of the methods of analysis will also be offered. Then, the actual analysis is executed in the way described in the methodological chapter. Examples of water weaponization are gathered from the documents published by NGOs regarding the Lake Chad conflict as well as the Central Sahel crisis, and the impact of these events will be expressed through the human security model. In order to be able to give a conclusion on this the analysis explores how human security is influenced in the Sahel. After, the analysis is thoroughly presented, the next chapter covers a short discussion, in order to present the limitations to the research, after which the final conclusion of the dissertation is given.

2. Literature Review

Since scientists discovered human-induced climate change in the late 1970s, an exponential growth can be seen in the amount of research done on this phenomenon. This research has collectively indicated that climate change intensifies vulnerability of populations and scarcity of essential natural resources (Birkman et al., 2022; Bowles et al., 2015; King & Burnell 2017; Cole, 2021). Where scarcity of resources has often led to cooperation between

nations or peoples – and this is also still the case – both scholars and politicians are now also more engaged by the negative consequences of water, or even resource, scarcity. Therefore, after the introduction of climate change to the global political agendas, and its securitization, an increasing number of academics started focussing on the climate-security nexus, and more specifically, the climate-conflict nexus. However, the focus in early research has been mainly on the causal relationship between a worsening climate and conflicts, despite many other relevant angles that could potentially be explored (Koubi et al., 2013; Nordås & Gleditsch 2015). More recently, scholars have also started researching the potential impact of a changing environment on ongoing conflicts, influencing its intensity and the changing impacts on states, militaries and the people, but the literature on these topics are still limited and overshadowed by the causal relationship mentioned above. Starting with the more widely covered topic of the causal relationship between climate and conflict, the literature slowly works towards the authors that have focussed on the relationship between ongoing conflict and a changing climate.

2.1 Pre-Conflict and Climate Change

In the early days of environmental research, the Malthusian theory on population growth, which argues that the exponentially growing global population will exceed the food production which then leads to catastrophes like war or famine, lay a foundation for the Neo-Malthusian theory (Mellos, 1988). This theory states that the diminishing supply of renewable natural resources can potentially contribute to the instigation of armed conflict in several manners (Koubi et al., 2013; Homer-Dixon, 1994). As opposed to this interpretation, the Cornucopian theory acknowledges that resource scarcity can indeed impact human life, but challenges the Neo-Malthusian scholars by arguing for a resilient population capable of adaptation to the changing environmental factors. It also states that through this adaptation, mitigation, and at times even prevention, of the consequences of increasing shortage of natural resources is possible (Koubi et al., 2013). In addition, the Cornucopian scholars, mention

that several other aspects play a significant role in the start of an armed conflict in addition to climate change (Theisen, 2008; Koubi et al., 2013; Hauge & Ellingsen, 1998).

Building on this latter theory, more recent literature has explored this causal relationship more extensively. And contrary to the earlier theories, such as the Neo-Malthusian theory, which pointed toward a positive causal relationship between scarcity of renewable natural resources and the instigation of conflict, the current loose agreement only suggests an indirect relationship, indicating social, political and economic factors to be the main drivers (Koubi et al., 2013; Homer-Dixon, 1994; Raleigh, 2010; Theisen, 2008; Hauge & Ellingsen, 1998; Van Weezel, 2019; Unfried, Kis-Katos and Poser, 2022; Schulman, 2021; Von Uexkull and Buhaug, 2021). De Châtel (2014) showcases an example of this in her Syrian case study where a four-year long drought from 2006 to 2010 decreased people's financial means even further, mainly for the rural population. Sparking the already existing grudges held against the government authorities, and leading to the first protests that eventually led to the Syrian Civil War. In this way "rural poverty [and by extension climatic events] has been argued to be a catalyst in the Syrian uprising" and therefore the conflict (Augsten et al., 2022, p. 10).

Von Lossow (2016) also identifies this as a way for water to interact with ongoing conflict, and coins this effect as the water functioning as a trigger for conflict. This is often referred to as a water conflict or water war, which "are usually driven by scarcity and competition over dwindling water resources [and] are about their management, utilisation, and distribution, accelerated by shrinking supplies and increasing demands" (Von Lossow, 2016, p. 84). While the scholarship is still undecided about whether a significant relationship between water scarcity and the initiation of a conflict can be drawn, Von Lossow (2016) gives the case of the Grand Ethiopian Renaissance Dam, sparking tensions between Ethiopia, Sudan and Egypt, as an example (Brown et al., 2007; Koubi, 2013; Van Weezel, 2019; Unfried, Kis-Katos & Poser, 2022; Von

Uexkull & Buhaug, 2021). Although this has not yet led to a conflict, Sudan and Egypt have engaged in joint military drills in early 2023 (Farhat, 2023).

Contrary to these similar conclusions, there are several case studies that do point to a significant relationship between the two concepts, however, these cases often lack generalisability and can therefore not make a strong enough argument for the positive causal relationship between resource scarcity and the start of a conflict (Unfried et al., 2022). On the other side of the spectrum, there are also still scholars that do not at all find a causal relationship between the phenomena, or at most a highly limited one (Benjaminsen & Svarstad, 2021). This leads to the conclusion that while, the scholarship is still divided at times, there is more and more research being conducted pointing toward a more indirect relationship that includes political, social and economic elements to be significant as well. Taking this into account, von Uexkull and Buhaug (2021) have proposed that climate change and violence, share a vicious circle with vulnerability. According to this model, (1) vulnerability shapes the exposure and resilience towards climatic events, (2) climate related impacts increase the risk to armed conflict, and lastly (3) armed conflict influences the vulnerability of a population to potential environmental disasters. Due to the enormous impact armed conflict usually has on society, the authors mark this as the common, but not exclusive, point of entry. While this does indicate that while climate change can potentially spark an armed conflict, another relationship between climate change and armed conflict can be observed. Moving away from the causal relationship, this alternative relation refers to the impact climate change can have on armed conflict when it is ongoing.

2.2 Ongoing Conflict and Climate Change

The literature on this second conflict stage is far more limited than on the previous section, but recently Augsten, Gagné and Su (2022) delved deeper into human experiences marked by both climate change and ongoing armed conflict. In this research, they found that “climate risk has contributed to intensifying violent conflicts in parts of Western Africa” (Augsten et al., 2022, p. 7). The

authors go on to explain that within this region, the rural areas are especially vulnerable to the threat that climate change poses due to their dependency on agriculture for their livelihoods. This can easily be illustrated through the situation of the nomadic pastoralists in northern Mali in 2019 after heavy rain which led to the flooding of pastures and the destruction of both crops as well as houses (ICRC, 2020). This prevented the pastoralists from using their usual grazing fields, but due to the insecurity caused by the armed conflicts in the region travelling to further pastures was also no option. Settling in alternative locations, close to the already scarce fresh water, tensions rose with the local fishermen and farmers, who were also trying to make ends meet. In this dire situation, the pastoralists were forced to sell their animals much cheaper than usual, which heavily impacted their financial situation (ICRC, 2020). This loss of income then heavily impacts a household as this makes essentials such as food and healthcare less accessible for them.

A group that is even more vulnerable to these threats are the women in this region, often due to the traditional gender roles assigned within a household. This causes their lives to be interconnected with nature and they are, for example, responsible for the retrieval of water (Augsten et al., 2022). This way, phenomena such as water scarcity, add to the work load of the women. But even if women are farmers, the gender roles cause them to have smaller land plots or working shorter hours, which limits their income significantly and therefore also their ability to provide security for a family (Chandra et al., 2017). On top of this, when suffering from conflict and climate change, the risk of being trafficked, or a victim of violence increases significantly, making women more and more vulnerable (Augsten et al., 2022). This risk is increased due to the longer distances they have to travel, often alone, in order to retrieve food or water, and the increased violence on the roads caused by the conflict (Chandra et al., 2017; Spring, 2012).

Additionally, it is explained that the lack of strong governance, as well as state support, heavily impact the population in these circumstances

negatively. In part, and most relevant to the Sahel, this is because this lack of strong government presence, gives way to, for example, insurgent groups that aim to occupy territory (Augsten et al., 2022). When such groups enter the area, this usually only increases the violence in the region, which only intensifies the issues mentioned above. An example of this is described by Sherpa (2007), who “suggests that many of the outcomes of conflict, such as gender-based violence and forced migration are rather deliberate strategies of war to destabilise families and communities” (p. 10). Another example from both Iraq and Yemen, is that water infrastructure is often targeted, decreasing the water available for either drinking, sanitation, or irrigation (ICRC, 2020).

2.2.1 International Law

Despite the lacking volume of academic literature on this topic of targeting water infrastructure, there are various international documents that regulate ongoing war, and take into account the environment as well. And while men at war have long been held to certain customs and rules, only about 150 years ago the foundation for international laws regarding war have been laid down in the form of the Lieber Code in the United States during the American Civil War (Gleick, 2019). This code was the first to protect unarmed citizens as well as certain infrastructure, such as wells, or commodities, like food (Lieber, 1863). One year later, the first Geneva Convention was developed and building on the Lieber Code, it also ensured the protection of non-combatants, but added onto this, among other things, that wounded combatants and prisoners of war should also fall under this same protection (Schindler and Toman, 1988). Several years later, the St. Petersburg Declaration was added to the international body of war legislation, and this document stated that for every action, a clear military purpose was required (St. Petersburg Declaration, 1868). Supporting this addition, the Brussels Protocol states that it is illegal to cause “any destruction or seizure of the enemy’s property that is not imperatively demanded by the necessity of war” (Brussels Declaration, 1874, p. 2).

The foundation laid by these documents, was used during the important Hague Conventions and Hague Declarations of 1899 and 1907, which had the purpose of making war more humane in so far that is possible (Gleick, 2019). In article 5 these declarations also protect basic infrastructure was also taken into account, including water systems. After the Second World War, this legislation was expanded and specified in the Fourth Geneva Convention. However, the main and most detailed laws against the destruction of water-infrastructure was implemented only in the additional protocols to the Geneva Conventions in 1977 (Gleick, 2019). These state that it is not allowed to “attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as [...] drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population” (Additional Protocols II, 1977, art. 54, paragraph 2). To this, no exceptions can be made for whatever reason. Adding onto this, article 15 of Protocol II prohibits the attacks on infrastructures that contain forces that could pose threat to people, including dams and dykes. On top of these important and relatively detailed documents there are multiple others which protect not only water infrastructure but nature in itself as well (Gleick, 2019).

While these international documents do clearly state that targeting or using water systems in order to harm civilian population is prohibited in any case, and despite both government, and non-government actors being bound by these laws, these illegal acts are still taking place. For example, there are records of Islamic insurgency groups using these tactics, despite the fact that also Islamic law clearly prohibits the misuse of water as is discussed in the following section. In order to dive deeper into the misuse of water by Islamic insurgent groups, the following section discussed the role of water in Islamic law.

2.2.2 Islamic Law

Just like in international law, Islamic law contains provisions to protect the civilian population and the natural environment from destruction and violence.

According to the Quran, people must share fire, pastures as well as water with other people as these things are co-owned by all (King, 2023). For the act of charity, one can therefore share water and food with for example their elders to do a good deed. When providing people with, for example, a clean water system, so that they can benefit from this in the long term, it is said to create benefits for the giver, even after death, while hoarding water is considered a sin. This indicates that water, and the sharing of it, plays a significant role in the Islam.

More importantly, Islamic law was based on the distribution and right surrounding drinking water, and this is also where the word Sharia originates from (King, 2023). In this law, it is stated that “no legal person or ruler [...] may appropriate a river, for example, or try to sell or rent its water. Nor may tax be taken directly on such natural resources, only on the produce resulting from their exploitation” (Wilkinson, 1990, p. 60). Based on this incredible importance of water, every person has the right to enough drinking water for themselves and their animals (King, 2023). On top of this, people have the right to water their agricultural lands in order to be able to farm their crops. In addition to this incredible importance of water in Islamic law, it also plays a significant role in the day-to-day religious practice, such as praying.

As such, the use of water as a weapon by Islamist extremist groups such as Islamic State and Boko Haram is particular at the least (King, 2023). And while it does have to be mentioned that these groups do also invest in long-term provision of water, their abuse of the resource cannot be ignored. Interestingly, the groups use theology in order to justify the weaponization of water, as they portray the Day of Judgement as a flood (King, 2023).

Combining this extensive body of literature, both academic and legal, there seems to be a slight mismatch between the two, as the academic literature most focusses on causal relationships, whereas international humanitarian law, logically, concentrates on connection between conflict and the environment during the conflict. Following the legal body of literature, this research will focus on the relationship conflict holds with the climate, and more specifically

water, while it is ongoing. Within this conflict phase, the use of water, whether that be for weaponization or targeting, will be the main focus of the dissertation, which is also the most regulated within international humanitarian law. This because, surprisingly, the literature on this topic is incredibly limited compared to other areas of interest. In the following section, the literature that has been published on the topic of water weaponization and targeting is given in a comprehensive overview in order to build a foundation for the research conducted in the analysis section.

2.3 Water Weaponization

While water weaponization can hardly be seen as a new phenomenon, dating back to the Mesopotamian civilisation, it still is severely understudied (King, 2023; Water Chronology, 2023, Daoudy, 2020). However, in 2002 Chalecki laid a foundation for further research into the topic. In this work she defined environmental terrorism as “the unlawful use of force against *in situ* environmental resources so as to deprive populations of their benefit(s) and/or destroy other property” (Chalecki, 2002, p. 48). This definition sets environmental terrorism apart from both eco-terrorism and environmental warfare, with environmental terrorism differing from the former through targeting the environment as opposed to serve an environmental cause, and from the latter as being executed by rebel groups compared to governmental actors (Chalecki, 2002). In addition to the provided definition of environmental terrorism, in her article, Chalecki (2002) also proposed a framework in which resources could either serve the purpose of a tool or that of a target, building on the work of others (Schwartz, 1998). As a tool, resources would be manipulated into becoming the weapon itself, whereas in the function of a target, they would have a more indirect impact on the consumers of the targeted water source. Among the resources that could potentially be used in such a way, water fits both categories. Later, Gleick (2006) places the weaponization of water under Chalecki’s environmental terrorism banner.

Following, and expanding on, the framework Chalecki (2002) had built, Von Lossow (2016) states that water can either be used as a target or as a weapon, in addition to its function as a trigger mentioned above. According to him, water as a target “describes the – intentional or unintentional – damage or destruction of (sensitive) components of the water infrastructure” (Von Lossow, 2016, p. 84). He also describes that, when used against the local population, the targeting of water can be used as a show of strength and determination, potentially weakening support for the opponent (Von Lossow, 2016). However, when a political goal of the perpetrator is not clear to its population, their own support might also decline, due to a sentiment of unjustified violence (Kiras, 2007). Finally, the framework concludes with water used as a weapon in conflict, and this is described as “water resources directly (ab)used as an instrument of war, as a tool, in order to achieve strategic political and tactical military goals by targeting the population, addressing the opponent’s political leadership and confronting the opposing military” (Von Lossow, 2016, p. 84).

From this statement, it can be said that different aims can be served through the weaponization of water, and Von Lossow (2016) distinguishes three different motives: 1) the strategic political dimension, 2) the tactical military considerations, and 3) the psychological effect. The strategic political dimension revolves around furthering the political objectives of the perpetrating actor. This dimension “is motivated by the will to demonstrate power, increase one’s authority and, as a consequence, consolidate one’s position in the territories under control” (Von Lossow, 2016, p. 85). Within this dimension, influence can also be acquired, or damage can be done, in areas beyond the reach of the attacker, without direct attacks, occupation, or control, due to the long reach of water. Secondly, the tactical military considerations and purposes of the water weapon are of more influence on the battlefield, in either defensive or offensive manoeuvres (Von Lossow, 2016). Defensively, one could flood an area of land in order to protect one’s own positions, whereas offensively, denying opponent forces access to water by cutting them off the supply to drive

them away from their positions, could be an example. Finally, the third dimension is the incredible psychological effect that water weaponization can have on people. Which can be compared to Chalecki's phenomenon environmental terrorism discussed above. This entails, that "just the potential use of its enormous destructive force poses an existential threat that can be upheld over the long term" (Von Lossow, 2016, p. 85). This indicates that with or without deployment, the water weapon can hold immense power over people and their behaviour and potentially creating fear under the general public.

Alternatively, Gleick and Heberger (2014) earlier proposed a typology more concerned with actors and patterns in conflicts. This typology distinguished between military tools and military targets which are both utilised by state actors. Then, terrorist purposes which this typology attributes to non-state in which domestic violence and cyberterrorism are included, and lastly, development issues in which both state actors as well as non-state actors can be involved. This categorisation did however, receive criticism for its inclusion of the terrorism dimension due to the subjectivity that comes with the term (Zeitoun et al., 2014). On top of this, the categorisation has a too significant focus on the types of actors rather than on political consequences and the impact on populations according to critics (Daoudy, 2020).

Also diving deeper into the phenomenon of natural resources, and more specifically water, being used to serve political and military objectives, King (2015) developed a more comprehensive framework in which the different forms of weaponization are categorised. In the early stages of this framework, King (2015) defined a weapon as "a means of gaining an advantage or defending oneself in a conflict or a contest" (p. 155). This could be used by "a nation or a group, a weapon can take the form of an item, action, or offensive capability used or intended to kill, injure, or coerce" (King, 2023, p. 15). In his first categorisation developed in 2015, he expanded Von Lossow's framework and differentiated between five ways to instrumentalise water to be utilised in conflict to further political and military causes; these are 1) strategic

weaponization, 2) tactical weaponization, 3) psychological terrorism, 4) extortion and incentivisation, and lastly 5) unintentional weaponization. Later, in an article written for the Center for Climate and Security, in cooperation with Burnell, the framework was narrowed down to three categories. In this version, psychological terrorism and extortion and incentivisation are replaced by the category ‘coercion’, and unintentional weaponization is placed under tactical weaponization (King & Burnell, 2017).

Agreeing with the criticism on the typology developed by Gleick and Heberger (2014), and extending this to the framework of King (2015) and King and Burnell (2015), Daoudy (2020) developed her own typology. This typology does not focus on the actors behind the water weaponization, but rather on “control over resources and infrastructures” (Daoudy, 2020, p. 1351). She differentiates between the use of water with the purpose of creating domination and legitimacy, military targets and goals, or military tools, and the use of water as a tool of cooperation, taking into account earlier criticisms and King’s definition of a weapon (Daoudy, 2020, King 2015).

Recently, King (2023) updated his framework again which now contains six categories, them being: strategic weaponization, tactical weaponization, coercive weaponization, instrument of psychological terror, instrument of extortion or incentivisation, and lastly unintentional weaponization. In the section below, these latest categories are discussed more in details to provide a comprehensive overview.

2.3.1 Strategic Weaponization

Within this category, there exist two dimensions: the use of water for a spectacular purpose and the second is rent collection for water provision. King and Burnell (2017) describe the former to be mainly focussed on gaining control over a large or important area, which can be either actual control or virtual. In order to reach this point, the threat of flooding the area or the threat of denying access to water is usually sufficient in order to reach the goal according to King and Burnell (2017). For the second dimension, the authors indicate that water

can be used as a commodity, and can therefore also generate income when provided to the subjugated population for payment. These financial assets collected through water, can then be used to fund various insurgent activities, including salaries for officers or the acquisition of weapons. Finally, any action that target or impact densely populated areas, industrial centres or critical infrastructure can be categorised as strategic weaponization.

2.3.2 Tactical Weaponization

This second category regards water as the medium of violence, where “water is employed against targets of strictly military value within a confined battlespace” (King, 2023, p. 17). This does, however, not mean that it is used solely on the battlefield, but it can also, for example, target dykes or levees in order to target the enemy forces through inundation. Another way of applying tactical weaponization would be to deny opposing forces the access to water through the destruction or poisoning of wells. A more widely used form of this category, though less relevant for this research, would be the use of water cannons on protestors for example, in an attempt to control a crowd.

2.3.3 Coercive Weaponization

While this category might seem to have some overlap with strategic weaponization, King (2023) defines it to be “the use of water provision to fund territorial administration or weapons acquisition with aspirations of achieving legitimacy” (King, 2023, p. 16). This is mainly aimed at non-combatants in situations where government support in the region is lacking, and instead violent extremist organisations can provide the local population with basic needs such as clean and healthy water. This would aid these organisations’ success through building their legitimacy in the region, “by demonstrating moral superiority over those who represent the state, supplant the functions of the state at the local level, and spreading a persuasive message” (Kiras, 2007, p. 193).

2.3.4 Instrument of Psychological Terror

Whether an event falls under this category is completely dependent on the intent of the violent extremist organisation, and rarely this event would fall under this category exclusively, as it can be used strategically, tactically or even to coerce. This because, while the definition of terrorism is highly contested, according to the terrorism literature, there are widely accepted elements defining terrorism: it requires the action to be violent, aimed to inspire fear among non-combatants, and executed for a political purpose (Combs, 2023; Kiras, 2007; Schmid, 2011). The fear among civilians would in this case be surrounding relatively easy targets such as wells and aimed at the “use of the threat of denial of access or purposeful contamination of the water supply to create fear among noncombatants” (King, 2023, p. 16), which can also be referred to as hydro-terrorism.

2.3.5 Instrument of Extortion or Incentivisation

On the other hand, weaponization of water can also be used, not to inspire fear, but influence people’s behaviour, either forcing or incentivising them to act in the interest of the violent extremist organisation. In essence, they are using “water provision to reward the behaviour of subject populations and support legitimacy of the perpetrator” (King, 2023, p. 16). As seen above, this type of action aims to gain support and legitimacy in an attempt to secure the legitimacy of the organisation and with that reach their long-term goals (Kiras, 2007). In addition, incentivisation also shows the credibility of an actor as a governing authority to the local and ‘occupied’ population (King, 2015). An example of this would be the ‘water mafias’ who reward people’s loyalty by providing sufficient and clean water (King, 2023).

2.3.6 Unintentional Weaponization

“Unintentional weaponization describes an outcome when use of the water weapons causes collateral damage to civilians or the ecological system” (King, 2015, p. 157). Here, “the perpetrator’s initiation of the act is intentional, but the

outcome is not” (King, 2023, p. 18). Examples of this could be the lack of control over an intended flood, and triggering forced migration, or the indiscriminate impact of the destruction of water infrastructure (King, 2023). In cases of unintentional weaponization crises surrounding food insecurity, famine or epidemics are relatively likely to follow the water weaponization event.

While it is recognised that this framework come with its downsides, such as the concerns raised by Daoudy (2020) and Zeitoun et al. (2014) regarding the use of terrorism as a category, it has to be addressed that the category is now no longer called terrorism but psychological terror. This lessens the negative subjective connotation, and would therefore no longer be an obstacle for the usage of this framework in this research. Additionally, King’s (2023) is the most elaborate typology presented and is therefore considered most appropriate for this project.

Within the body of literature surrounding the climate-conflict nexus, however much research is done into various sub-topics, one aspect that is lacking according to Gagné and Su (2019). This lacking, or severely understudied, perspective identified is the one where the populations experiences are highlighted, giving personal insight into this nexus. With this, Gagné and Su (2019) have identified a gap in the literature and call for case studies into the personal perspective of people living under the double impact of both climate change and armed conflict. In order to provide such a personal perspective on the topic of water weaponization, this research will use the human security theory to identify how certain events impact people’s lives on a personal level. In the below section, this human security theory is discussed in order to be able to utilise this in the research analysis.

3. Theoretical Framework: Human Security

The human security theory is part of the broadening and widening of the security dimension, aiming to make the individual the referent object rather than the state, which in some cases threatens the security of its citizens and others

(Persaud, 2016). This shift in security thinking, has not only taken place in academics but also in the policy arena, making it a topic of concern for organisations like the United Nations (UN), but also for nation-states and other institutions. “For too long, the concept of security has been shaped by the potential for conflict between states. For too long, security has been equated with threats to a country’s borders. For too long, nations have sought arms to protect their security.” (United Nations Development Programme (UNDP), 1994, p. 3). This is why, as a response to “a crisis of underdevelopment, of global poverty, of ever-mounting population pressures, [and] of thoughtless degradation of environment” the United Nations Development Programme published the Human Development Report of 1994 (UNDP, 1994, p. iii). In which it puts forward a people-centred framework for development, that aims to reshape the global policy dialogue and broaden and deepen the notion of security (UNDP, 1994; Persaud, 2016). Since its introduction, the human security phenomenon has gained significant attention in the academic world, but within this an imbalance arose, highlighting certain topics like anti-personnel landmines while human security research only started focussing on issues like gender-based violence from 2010 onwards (Hampson, 2012).

Due to this growing body of literature, the human security literature diverted into three different conceptions: the first focussing mostly on the natural rights and the rule of law, the second on the humanitarian aspects, and the last on social justice (Hampson, 2012). The first perspective concerns itself with human rights such as the right to live and right to freedom, and aims for the protection as well as the promotion of these rights. The humanitarian conception revolves more around international law, and therefore argues for the deepening and strengthening of these laws surrounding, for example, genocide and war crimes. In addition to this, this perspective aims to protect civilians both through the abolishment of dangerous weapons as well as humanitarian help. Lastly, the social justice viewpoint sets itself apart from the former two by broadening the scope of human security significantly, making it more

controversial than the other two interpretations, as it broadens human security by including economic, environmental and social factors among others. However, this broadening of the theory has also brought various criticisms, one of them stating that by including these other disciplines, there are too many factors considered important, leading to a lack of priority, which could potentially lead to having to choose between multiple factors considered important (Khong, 2001; Newman, 2010; Tadjbakhsh & Chenoy, 2007). On top of this, other scholars worry more about the methodological difficulties created by a theory this broad (Mack, 2001). As the inclusion of many variables makes isolation impossible, Mack (2005) worries that because of this, relationships between certain variables are harder, if not impossible, to detect.

Then, on top of the diverting conceptions of human security, scholars can also not find agreement on a definition of the concept, making human security a contest concept (Hampson, 2012). At the base, there is the differentiation between a more positive or negative definition. An example of a negative definition of human security is given by Hampson (2012), stating that human security can be defined “as the absence of threats to various core human values, including the most basic human value, the physical safety of the individual” (p. 231). Alternatively, Alkire (2003) proposes a positive definition, arguing that “the objective of human security is to safeguard the vital core of all human lives from critical pervasive threats, in a way that is consistent with long-term human fulfilment” (p. 2). The Commission on Human Security, however is of the opinion that the definition should be even more all-inclusive, stating that human security aims to “protect the vital core of all human freedoms and human fulfilment” (Report of the Commission on Human Security, 2003, p. 2). While these definitions are relatively similar, the extent of the broadening of human security does still lead to disagreement.

However, aside from the definitional issues, there is another major unresolved issue regarding human security and the implementation and research thereof. This issue has to do with the fact that different people might regard

different factors to be part of the ‘vital core of human life’ (Hampson, 2012). Meaning that people in rich and developed countries might have a very different interpretation of core values in life than people in the global South (Khong, 2001). This ties in with the critique on the theory, that it would hold neo-colonial aspects (Persaud, 2016). This, in part, has to do with the assumption that Western countries would decide on when human rights, for example, are not upheld in the case of humanitarian intervention (Ayoob, 2004).

In order to give a comprehensive framework that can be of use in the following sections, the broad interpretation and the framework behind it are discussed in the next paragraphs. The broader interpretation is chosen due to the nature of the research and the results that are aimed for, namely analysing how certain events impact people’s lives. For this, a broad framework with multiple categories taken into account gives a more all-encompassing and complete analysis, and many of the methodological critiques mentioned above are less relevant, taking away some downsides of the theory. In the document originally proposing the human security framework and theory, the Human Development Report of 1994 by the UNDP held seven categories by which human security can be impacted. Those being (1) economic security, (2) food security, (3) health security, (4) environmental security, (5) personal security, (6) community security, and lastly (7) political security (UNDP, 1994). In the section below, these are all discussed shortly.

3.1 Economic Security

This first category is considered vital for human security, as it assures the basic income of a household, giving more access to resources that can influence other types of security within the framework. And while ideally speaking this income would be the result of work the people do in order to sustain themselves, but when this is not the case, a government support system is an option that can provide for people’s economic security, in case such a system is in place (UNDP, 1994). One of the most severe effects of economic insecurity identified

by the UNDP (1994) is homelessness, and with it the consequences of being without a home.

3.2 Food Security

While food security seems to speak for itself, there are two main factors that play a part here: the availability and the accessibility of the food (UNDP, 1994). The availability regards the physical presence of the food in the area of residence of people, which is influenced by factors such as national or regional food production, and if that is too low, import dependency. On top of this, the accessibility is also essential in ensuring food security, since famines can still occur even when there is plenty of food available (UNDP, 1994). An example of this, given in the Human Development Report (UNDP, 1994), is when inflation makes the food expensive enough that people are no longer able to afford the food available. Therefore, this accessibility is tied to economic security, as households need sufficient financial means in order to be able to buy food in case, they cannot produce this themselves.

3.3 Health Security

Also tying in with the previous category, health security, of course, surrounds the physical as well as mental health of people (UNDP, 1994), and is therefore heavily impacted by other categories such as food security and environmental security. This because people's health can easily be impacted by, for example, malnourishment but also environmental factors such as polluted water, or even the lack of sanitation as this can lead to, on occasion, lethal diseases or sicknesses (UNDP, 1994). In this category, the UNDP (1994) identifies, several communities, among whom poor people, rural communities, but also children and pregnant women, to be the most vulnerable to the threats posed in this category as these people either require more healthcare than average or have problems accessing health care.

3.4 Environmental Security

This category involves all threats that could potentially be posed to people by the environment they live in. Examples of these are desertification and salinisation of land, but also air pollution, deforestation, and shrinking (clean) water supplies (UNDP, 1994). In recent years these effects have been felt more intensely than before due to the increasing level of climate change, which is in part human induced. In developing countries, where climate change is felt more intensely than in other areas, this is a category that significantly impacts people's lives and threatens either their livelihood – for example for farmers, fishermen or pastoralists – or their personal security – for women who have to walk further in order to provide drinking water for their families (UNDP, 1994). Through climate change and all its consequences, environmental security is highly interconnected with the other categories this chapter touched upon.

3.5 Personal Security

This form of security protects the physical human being insofar that it aims to protect people from physical violence. This physical violence can come from various sources, like organised crime, war or conflict, or even the state in the form of torture (UNDP, 1994). In addition to these forms of violence that are consequences of government, or at least organised, actions, another significantly common forms of violence are domestic violence, rape and even child abuse (UNDP, 1994). Suffering from this more significantly than others are women, as threats to their personal security are more common due to the stereotype of their gender characteristics and the role they traditionally play in a household (UNDP, 1994). While personal security is mainly influenced by external factors, it does influence some of the other categories in the framework. An example of this is health security, this because wounds caused by physical violence can potentially lead to decreased health or ability, or even sickness.

3.6 Community Security

This form of security aims to prevent harm done by communal traditions, as a community is supposed to provide security to individuals and not harm them (UNDP, 1994). This is however also where one can imagine that certain people might find this an oppressive thought, since this means that outsiders to the community decide on whether this tradition does or does not pose a threat to individuals (Khong, 2001; Hampson, 2012). An example of this is female circumcision, also called female genital mutilation, which in many developed countries is usually considered a horrible practice, but is to many communities and tribes a generations honoured tradition (UNDP, 1994). Additionally, being within a community can also cause one to become involved in disagreements or conflicts between multiple communities, which can result in ethnic strife. In this way being a part of the community can potentially pose a threat to the individual, decreasing their security (UNDP, 1994).

3.7 Political Security

Political security is the seventh and final category in this human security framework. It concerns itself with whether human rights are upheld in the region analysed, tying in more with the two other perspectives on human security described above where international humanitarian law and human rights were of more importance (Hampson, 2012; UNDP, 1994). It does also relate heavily with the other categories as human rights do protect people in all of these categories in order to ensure that they can live free from oppression and inhumane living conditions. One other aspect that is quite significant in the political security realm is that people should also have the freedom to express their political opinion without the fear of persecution by the state or any other actor (Peoples & Vaughan-Williams, 2010).

Following the proposal of this framework, researchers have found common elements that remain constant throughout (Tadjbakhsh, 2013). The first being the freedom from want, which advocates for “conditions that allow for

protection of basic needs, quality of life, livelihoods and enhanced human welfare” (UNDP, 2022, p. 35). In this, food security, health security and economic security can easily be recognised. The second commonality is the freedom from fear, allowing for “conditions that allow individuals and groups protection from direct threats to their safety and physical integrity, including various forms of direct and indirect violence, intended or not”, which clearly highlights personal, community and political security (UNDP, 2022, pp. 35-36). Lastly, freedom from indignity assures “conditions where individuals and groups are assured of the protection of their fundamental rights and allowed to make choices and take advantage of opportunities in their everyday lives”, which can also be reached through political security (UNDP, 2022, p. 36).

As can clearly be seen, these elements and categories are heavily interconnected and therefore all have influence on each other. In order for people to be truly secure, all the above categories need to be satisfied at least to a certain extent. To which extent and in what way is important to determine before one plans to implement the framework in practice. However, the United Nations (UN) does not intend for a one fits all set of criteria as this is too contextual (UNDP, 2022). Therefore, this is beyond the scope of this research, and shall thus not be further addressed.

4. Methodology

Drawing on the information presented in the previous chapter, the following research question has been developed: How does the weaponization of climate change impact human security in the Sahel according to NGOs? The following section aims to explain why this question and its elements were selected as opposed to other possibilities. On top of this, this chapter provided more clarity about the research process of the dissertation, effectively clarifying the way the above research question will be answered.

4.1 Research Question

For the research question, the main variables that were deliberately chosen within the climate-security nexus are weaponization, human security – with which comes the theory that the United Nations has developed surrounding this phenomenon –, the Sahel region in Africa and lastly the NGOs. The concept of weaponization has been selected for the research, in favour of for example securitisation, in order to narrow down the scope of the research and limiting the outcomes to focus on the conflicts instead of the whole security spectrum. And while militarisation, for example also could serve this narrowing purpose, weaponization still is considered more favourable due to its inherent focus on how water is used as a tool by actors whereas militarisation focusses more on involving the military in the climate crisis (Gilbert, 2015). Another reason for electing weaponization over militarisation is that – as is discussed below – in the Sahel region that is involved in conflict, most government forces and institutions have abandoned the regions of conflict, and thus would not be directly involved in the conflicts.

Then, the human security theory was chosen as a model of analysis in order to shed light on the personal perspective within the climate security. This because it has recently been discovered that “case studies that highlight people’s experiences of [the climate-conflict nexus] are at best scarce [which] limits our understanding of the micro dimensions” (Su & Gagné, 2019, p. 2). Therefore, the personal level on which the human security theory operates provides a beneficial framework in order to fill this gap identified by Su and Gagné (2019). Within the selection of this theory, the broad interpretation of human security is chosen in order to be able to analyse any impact weaponization might have on the people’s experiences. This version of the theory can detect the impact in more aspects of life and therefore, will be able to give a more complete analysis and conclusion.

Following this, the region in which the case studies are selected, the Sahel, has been selected for both its geographical location, which makes the area

incredibly vulnerable to the effects of climate change through the desertification, decrease of precipitation, and an increase of the average temperature (ND-GAIN, 2023). On top of this, the area has been in conflict for the better part of a decade with the growth of the Islamic insurgency group Boko Haram in the area. Making this area, unfortunately, perfect for the study of the climate-conflict nexus. While there are of course also other areas in the world where similar climate conditions can be found in combination with Islamic insurgencies that could have been selected for this research. However, the limited literature available on water weaponization is often focussed on countries such as Syria and Iraq, and in order to add to the literature, the Sahel has been chosen for the lack of literature on the topic in this area (King, 2016).

Lastly, the NGOs have been selected to be the publishers of the texts that are going to be the object of analysis. Like mentioned before, the literature suggests that more research in the climate-conflict nexus should account for the personal perspectives, and through the selection of NGOs, the research aims to provide this in order to have a relevant and necessary contribution to the existing body of literature. This is because, it is suspected that the NGO output will provide sufficient civilian testimonies in order to analyse their concerns and take these into account in the conclusion.

4.2 Case Study Selection

Following this justification of the selection of the Sahel, the following section explains why the case studies within the Sahel are chosen. Within the Sahel, there are still various different countries that can be selected as multiple are engaged in conflict, whether internally or externally, and the entire region, like mentioned before, is vulnerable to the effects of climate change. However, after a careful analysis of the ND-GAIN index, the lake Chad conflict – with Chad, Niger, Cameroon and Nigeria involved – and the Central Sahel Crisis – with Mali, Niger and Burkina Faso involved, have been selected. In addition to their obvious involvement in conflict, all these countries are situated in the bottom twenty percent of the ND-GAIN index, indicating that the countries are

incredibly vulnerable to climate change and among the countries least prepared to deal with its impact. Adding to this their immensely low score on the development indicators, this region is critical, and therefore could benefit from increasing research into the region. On top of this, these two cases are the main conflicts currently ongoing in the Sahel and thus make the best candidates for case studies in this research, as both a changing climate and ongoing armed conflict are a prerequisite for the case studies. While both cases are analysed during the analysis, the discussion of the results, and the conclusion, there will not always be a clearcut separation between the cases. This because of the similarities the cases hold, making the Sahel as a region a more cohesive region of analysis in which these two case studies take place.

4.3 Data Collection

In this project, the data that is collected in order to conduct the analysis, consists of NGO reports and the output that is posted on their webpages that describe the situation in either conflict, and in some cases both. The aim with these sources is that they give an overview of the conflicts, examples of instances where water has been weaponized within those conflicts, and personal experiences of the population in the region. This in order to provide the much-needed personal perspective that has been identified as too limited in the literature (Su & Gagné, 2019). In the event that these personal experiences are lacking, expert testimonies – of NGO employees – given in the texts could also be beneficial in addition to the general perspective given by the NGOs. These various perspectives could give a more clear and complete perspective on the situation and therefore, might also prove to give a more reliable result.

Since the body of data with the criteria mentioned above alone would still be too sizeable to be feasible to analyse within the allocated time for this research, more criteria have to be in place in order to narrow down the available texts. First of all, the documents would have to be written in either English or Dutch, this because these are the languages that the researcher speak fluently, and thus prevents translating errors. Second, a set of criteria for the limitation

in the publishing NGOs needs to be developed. Starting with the necessary credibility of the NGO, the ones selected for the research need to have a good reputation within the international community. This limits the chances that

	Documents	Pages
Amnesty International	1	6
ICRC	6	32
International Rescue Committee	3	43
MSF	4	20
Norwegian Refugee Council	1	8
Save the Children	2	17
UNICEF	2	22

Table 1 Data collection, documents and pages per NGO.

information in the texts is false or incomplete, which can then lead to an invalid conclusion. Then, the NGOs need to be present in the Sahel area and be able to give a first-hand perspective on the situation, in order to ensure some personal or

expert perspectives are given and provide the essential personal touch to the research. This way, the personal perspective can be given without having direct access to the area of analysis, which is not feasible for a master dissertation. Combining all these criteria for the NGOs of which reports and web pages are to be used for the analysis of this research, the following NGOs have been selected: Amnesty International, International Committee of the Red Cross (ICRC), International Rescue Committee, Medecins Sans Frontières (MSF), Norwegian Refugee Council, Save the Children and UNICEF. As shown in table 1, the number of documents found according to the criteria varies per NGO, this because not all the selected NGOs have the same amount of output available relevant to the research. However, the length of the relevant text is also worth mentioning as this, in the end, is of course more important than the number of documents. While the number of pages is still not equal or even similar, this selection of documents is relevant to the topic and, when analysed, is expected to provide an answer to the research question. What is to be expected in the documents is a certain amount of bias towards a certain subtopic, for example, MSF is likely to place its focus on health security, where Save the Children and UNICEF are more likely to veer their attention towards children

in the area. It is however, expected that due to the variety of the selected NGOs that this will not have a significant effect on the conclusion. The final selection amounts to 19 documents and 148 pages.

4.4 Analysis

In order to analyse the above-mentioned documents and reach an answer to the research question, the necessary information needs to be extracted through a research method. In this case, both the discourse and content analysis method are used (Scribbr, 2023). This way analysis can be done both on the topics covered by the NGOs but also on whether the NGOs reflect the personal or expert stories of civilians or NGO workers, but also on the content of the documents. This includes whether climate change or conflict are mentioned and whether, according to the NGO, a relationship is held with one of the human security categories. Additionally, the content analysis can give clarity about the events of water weaponization in the area, and whether this has any influence on the human security or personal experiences of people living in the conflicts. In order to extract the data from the documents consistently, the program nVivo 14 is used, this software allows the document to be coded, and can later extract the relationships between the codes. For this sort of analysis, a code book has been developed to ensure consistent coding over the entire process. This code book also aims to minimise the inconsistency during the coding process. In this code book, the codes are listed including a description of when the code is applicable to a piece of text and when it should be used. When creating the code book there is of course a subjectiveness bias in the creating of the codes themselves and during the coding process as personal views might cause the researcher to code certain pieces of text differently than someone else. While the code book does aim to minimise this, and its foundation of theory does too, subjectiveness bias cannot be completely eliminated. However, the researcher is aware of this type of bias and attempts to minimise this, by strictly keeping to the codes identified in the code book.

The main code clusters that are included in the set of codes, are based on two theories, of which the first is King's (2023) framework of water weaponization that has been mentioned above. With these codes, the goal is to find events of water weaponization in the Sahel, in order to be able to come to a conclusion. In these instances, the type of weaponization is coded as well as a general code for weaponization, this to ensure it is clear how many events of water weaponization are identified and to then be able to analyse whether these events include different types of weaponization. The second cluster of codes regards the human security framework. Here it is important that every time one of the categories is mentioned, this is coded, in order to find out what factors influence the human security factors and thus also in which ways weaponization can potentially impact it. On top of this, there is a set of codes that tracks the times certain actors are given space to share their experiences, this to ensure these testimonies are registered and to be able to shed light on what topics are most important according to them. Then, there is another set of clusters to record the countries that the events mentioned in the texts happen in, this to discover where the focus of the NGOs lies and whether the situation might be worse in one conflict than the other. The last cluster is that of the NGOs, which help to track certain preferences or patterns in the data provided by the different organisations. A complete overview of the codes can be found in appendix 1.

When this coding is completed, an analysis is done in order to determine the relationships that are found in between the different codes and code groups. In the first section of the analysis, there will be a focus on the discourse analysis regarding the publishing NGOs and what they have decided to portray in their output. This includes where there are expert or personal experiences given by NGO employees or civilians respectively, or how well weaponization and human security are covered. Then, the analysis deepens the understanding of the stories told by civilians, shedding light on what is most important to them, and also what are the main threats perceived by them, among which weaponization is also explored. The following part, aims to discover how

human security is influenced and impacted, this can be either by other factors within the framework or any other code, or code group, that is seems to hold a relationship with. Lastly, the analysis discusses water weaponization and the relationships it forms with other codes, taking the results from the previous sections and adding on the missing relationships. This gives a complete overview of the influence water weaponization has and therefore, this part is essential as without it, no conclusion can be reached.

4.5 Limitations

Like any research project, this one also comes with its own limitations, of which there are two significant ones that are discussed here: this being a Masters dissertation, and thus comes with limited resources and time, and secondly, the fact that this research is mainly based around case studies, which naturally have a low external validity (Gerring, 2004).

Starting with the consequences of the restraints placed on this project in the form of time and resources, as these are quite significant in this case. This because, the ideal method to be used for researching personal experiences of people dealing with the consequences of climate change and conflict, is ethnography, and not the discourse and content analysis that are currently used (Suryani, 2013). In the case that ethnography would be possible, the true experiences of these people could be recorded, and much more first-hand information would be available, increasing the relevance of the results. However, this would take significantly more time than the six months that have been allocated for the dissertation, and would require financial resources, which are not available. While it is the intention of the researcher to obtain information directly from the areas of interest through analysing documents that have been published by people on the scene and experts in the field, this information can, of course, not compare to true first-hand sources.

Additionally, the research is limited through the use of the case study method, with its low generalisability as the number of cases studied is extremely limited (Gerring, 2004). However, as has been mentioned before, within the

climate-conflict nexus, a need for case studies regarding personal perspectives has been identified as only a limited number have been done (Su & Gagné, 2019). This indicates that while the generalisability of this specific piece of research might indeed be low, the results will contribute to a wider understanding of the personal perspectives when looking at the bigger picture and therefore still giving some form of relevance to the results.

5. Case Studies

As has been explained before, the main case study in this research is surrounding the Sahel region in Africa for multiple reasons, and within this larger case study, two conflicts will be the main focus. This chapter aims to give a concise overview of some background information for both conflicts, starting with the Lake Chad conflict, followed by the one in the Central Sahel.

5.1 Lake Chad Basin Conflict

For this research, a case study on the Lake Chad region, and the larger, Lake Chad Basin region is conducted in order to assess the impact of water weaponization on human security in the Sahel region. Lake Chad used to be one of the largest lakes on the African continent, with a size of about 25.000 km² but due to climate change the lake shrank to not even a fifth of its original size (Shanmugha, 2021). Bordering the lake, and the larger Lake Chad Basin, are four countries: Chad, Nigeria, Cameroon and Niger. In the area, people are mostly dependent on activities such as fishing agriculture, livestock, hunting and pastoralism for their livelihoods, making them reliant on the increasingly changing weather patterns. The fact that lake is shared between communities from four different countries, creates an international community between the people living by and around the lake (Samuel, 2022). Many trading relationships were formed before the conflict and families were interconnected over the borders through marriages and religion, the exchanges in the area flourished. This does however, not mean that the area did not have its challenges as banditry and a lack of government presence did cause insecurity and marginalisation,

respectively (Samuel, 2022). On top of this, abductions, highway robberies and cattle rustling further added to a sense of insecurity to the personal security of the local population (UNDP, 2022). However, this does not compare to the period when the violent extremist organisation Boko Haram gained traction in the area and began taking charge. The rise of this insurgent group started in the Nigerian area surrounding the lake and it aims to form an Islamic State in the Sahel surrounding the Lake Chad region. In 2009 this came to a clash with government forces, which led to Boko Haram using more and more targeted killings and guerrilla tactics in order to gain the upper hand over the government (Onuoha, 2012). The aforementioned marginalisation in the area by the central government, fuelled resentment against government officials and institutions, giving way to Boko Haram go grow and flourish in the area (International Rescue Committee, 2023a). This has led to roads no longer being safe to travel and trading is becoming increasingly harder, detaching the smaller communities from their former close partners (Samuel, 2022). After twelve years of Boko Haram rule in the area, 11 million people are in need of humanitarian assistance, 3.2 million were forced to leave their home lands, and 3 million people are now food insecure of which 400.000 children are extremely malnourished (Samuel, 2022). Clearly, the combination of intensified violence and conflict, combined with the consequences of climate change that the region has been experiencing for decades, makes this area very vulnerable to any situation which exploits either one of these, making this the perfect case study for this research.

5.2 Central Sahel Conflict

In addition to the case study on the Lake Chad region, the second conflict in the Sahel is the Central Sahel conflict which started in Northern Mali in 2011 and later spread to neighbouring countries Burkina Faso and Niger (UNCHR, 2020). Following this violence in 2011, in 2012 Islamist groups and Tuareg separatists conquered parts of the region after a military coup, this made that the violence became more inter-communal and attacks by insurgent groups became more frequent (UNHCR, 2020). This inter-communal violence is mainly between the

farmers and pastoralists, with the former being nomadic and the latter, both competing for natural resource like water for animals and irrigation, resulting in clashes between the two communities (ICRC, 2020). Slowly these occurrences of violence, by mainly the insurgent groups, also started spreading to Burkina Faso and Niger, spreading through the Central Sahel region (Global Centre for the Responsibility to Protect, 2023). As the groups started gaining more territory, and were in need of income, forced taxes were implemented and violence started to increasingly be targeted towards civilians and civilian infrastructures (Global Centre for the Responsibility to Protect, 2023). Ultimately, the violence and insecurity in mainly Mali and Burkina Faso led people to flee their homes, making them internally displaced if not having to flee their country in to the neighbouring countries (UNHCR, 2020). The consequence of this is that millions of people are currently displaced in the countries and around the area, making this one of the worst refugee crises of the world. This issue of displacement also spreads the humanitarian crisis with them, this because at times, the fleeing people are not living in refugee or displacement camps, but hosted by local communities, who share their limited resources with, sometimes, many more people than are included in their own original communities (International Rescue Committee, 2016). These issues make people of the entire region vulnerable to the impacts of the violence. Recently, due to increased government efforts to handle the spreading violence in Burkina Faso, violence against civilians has supposedly increased in the form of people going missing and extrajudicial killings of people who are suspected to work with the insurgents (Global Centre for the Responsibility to Protect, 2023). Similarly in Mali, recent developments have violence has increased against civilians, however, this time the people suspected to collaborate with the government are the victims. This violence against the local population is said to be used in order to either draw them into the ranks of the insurgents, or forcefully displace the people not willing to cooperate (Global Centre for the Responsibility to Protect, 2023). In addition to this violence, the region also has

to deal with the intense consequences of climate change, leading to more extreme weather events, even warmer temperatures, less predictable precipitation, resulting in droughts and heavy rains (Climate Diplomacy, 2021). Like could be seen in the example of the pastoralists and farmers, these climatic occurrences can have an impact on increased violence and with this add to the already unsafe environment for the people living in the Central Sahel. This double impact that the literature calls the climate-conflict nexus can definitely be felt here.

6. Analysis

Taking both areas discussed above, this chapter discusses the analysis through the results of the text analysis, focussed on both the content and the forms of discourse that are present in the selected documents, are presented and discussed. This discussion aims to analyse the outcomes of the text analysis and attempts to answer the research question given in the methodology chapter. The analysis starts with a dissection of what the different NGOs have focussed their reports and webpages on. Then, it moves on to analyse the experiences of civilians living in the affected areas, after which it is determined how the human security codes interact with the other codes, among which the countries, actors and conflict. Lastly, the analysis delves into the relationships the documents hold between weaponization and the other codes in order to come to a conclusion.

6.1 Non-Governmental Organisations

Starting with the discourse analysis on the different documents collected, all documents were given one code linked to the NGO that published the content either on one of their web pages or in one of their reports. This way, it can easily be seen whether certain NGOs focus more on certain topics or actors than others. In this section of the chapter, it is discussed how different NGOs engage with

different actors, countries, the human security theory, conflict and weaponization.¹

First of all, the interaction with different types of actors – such as civilians, NGO employees, state- and non-state actors – is measured and interpreted. While state- and non- state actors we never given the opportunity to tell their story, in the other groups of actors, differences can be seen between the NGOs. These differences show as organisations such as Amnesty International and Save the Children gave approximately equal opportunity for both civilians and NGO employees to add perspective to the content, both with a slight benefit for their employees, whereas the ICRC, International Rescue Committee and UNICEF gave focussed significantly more on the civilians. MSF was the only organisation that gave considerably more space to NGO workers to contribute to the narrative. This shows that the ICRC, International Rescue Committee and UNICEF portray a more personal narrative whereas MSF provides an expert perspective.

Then, while in the most cases NGOs have provided country specific information for most, if not all, countries included in the case studies, the countries of the Central Sahel are clearly more common in the documents, indicating that the conflict-climate nexus is a more immediate problem for NGOs in the region than in the Lake Chad area – including Chad, Cameroon, Niger and Nigeria. This does, however, not necessarily mean that the humanitarian situation is worse in one of these areas, but it means that this phenomenon is better covered by NGOs. Surprisingly, Niger – being included in both regions – does not stand out in the number of codes it received, meaning that the coverage of Niger is not excessive in either conflict area. While, this imbalance can lead to a suspicion less reliable results, it is believed that all countries have been represented enough to conduct the analysis,

Additionally, when looking at the human security theory and categories, food security – and with that the lack of food and drinking water – was discussed

¹ The data that this analysis is based on can be found in appendix 2, table 2.

the most overall and political security the least. However, the different NGOs show a stark contrast in what was the category of security mentioned the most. Expectedly, MSF focussed mostly on health security, indicating that “the lack of clean water and high concentration of people in the region results in the spread of parasitic infections, skin diseases, and water-borne diseases like diarrhea” (MSF, 2021, p. 3). Whereas the ICRC mentioned that “the effects of climate change, including reduced rainfall, desertification and the loss of livelihoods by communities, are keenly felt” (ICRC, 2022b, p. 2). Which indicates, along with the fact that this was the most common concern mentioned that changing climate – and thus environmental security – are an incredibly important factor to the ICRC in this region. The International Rescue Committee prioritised the heavily interrelated economic security and food security in their content. An example from one of their reports states that “more frequent [climate] shocks force people to leave their homes and destroy their sources of income, forcing them to compromise on their food consumption (IRC, 2023, p. 8). The Amnesty International report was mostly interested in the personal security of women and girls in IDP camps. While similarly, UNICEF was mostly interested in the personal security and freedom of violence for the young population in the areas. And lastly, children in the region could count on Save the Children to call attention to the fact that “millions [are] now struggling to access nutritious food, safe drinking water, health care education and other social services that have been seriously disrupted” (Save the Children, 2020, p. 7). Overall, the text analysis seems to indicate that the selected documents point toward security issues in all categories of analysis, but mainly to the ones related to food and drinking water, the environment and personal security, with to a less extent health and economic security issues.

Another interesting insight is one related to conflict and the people causing violence and posing a threat to other people. The analysis generally shows that non-state actors are more often indicated to be the instigators of violence over state actors, which logically follows from the case studies that

discussed that state actors are mostly withdrawn from the conflict areas and non-state actors or insurgent groups now control parts of the region. However, the analysis gave one outlier from this conclusion, which is the story portrayed by Amnesty International. Here government forces – or those collaborating with or working for them – are described to be the main source of harm. As “thousands of women and girls who survived the brutal rule of the Boko Haram armed group have since been further abused by the Nigerian security forces who claim to be rescuing them” (Amnesty International, 2018, p. 1). This gives an interesting perspective on the situation as normally one would expect the insurgent groups to be the main source of harm, but apparently this is not always the case. And while the other documents do also mention that state actors are on occasion responsible for violence towards civilians, this is greatly outnumbered by events where non-state actors are the sources of threat. This leads to a conclusion that in general non-state actors are responsible for the violence in the area, but on occasion state actors are also involved.

Lastly, and most importantly, the topic of water weaponization is relatively poorly represented by the NGOs. Only Amnesty International, the ICRC, the International Rescue Committee and UNICEF have recorded instance of water weaponization and only in very small numbers. While it needs to be acknowledged that it is quite a niche and narrow topic and code, such little instances of documentation were not expected. In addition to this, it is often unclear which of King’s categories (2023) is applicable to the events as the motivation behind them is hardly ever recorded, and potentially not even known. The events that were included in the documents mostly described the poisoning of water sources with several different substances including fuel, animal carcasses and human corpses as well as attacks on water points by armed groups (ICRC, 2022a; UNICEF, 2023; IRC 2016). Both of these types of events lead to a diminishing amount of drinking water available. A completely different approach to the weaponization of water is described by Amnesty International (Amnesty International, 2018). In this case, due to the immense lack of water

and food, women are raped by armed forces in exchange for food and water, which of course has an immense impact of the physical as well as mental wellbeing of a woman, endangering their personal security (Amnesty International, 2018). As depicted by these examples, the weaponization of water described in the articles is impactful on the lives of the local population.

All in all, this part of the analysis shows that the NGOs paint the picture of a humanitarian crisis in both the Central Sahel and the Lake Chad Basin regions. The population is impacted over the whole spectrum of the human security theory and even natural resources are weaponized against them. In this, civilians as well as NGO workers share their experiences giving a personal and an expert perspective on the situation. The following section of the chapter analyses the situation from a personal perspective, focussing on the statements given by the civilian population.

6.2 Civilians

As has been discussed above, nearly half of the NGOs gave significantly more attention to the anecdotes of victims of the humanitarian crisis than any other actor. In order to examine this, and to provide the much-needed personal perspective, this section analyses the stories told by these civilians, including their main concerns within the human security spectrum, the conflict and violence that they have fallen victim to, and finally their description of events of water weaponization.²

In the testimonies of the local population the main concerns that are addressed, concern food and personal security. Indicating that they experience a lack of sufficient food and water of a healthy quality, and fear violent attacks on their personal being. As an example, a woman in Nigeria told the International Rescue Committee: “[the insurgents] told us that if we ‘tried anything stupid’, they would kill us. They came shooting and shouting at people to surrender to them” (IRC, 2016, p. 5). Another adult woman who fled her

² The data that this analysis is based on can be found in appendix 2, table 3.

village states that “the armed men arrived, [and] they beat and killed all the men they found there” (ICRC, 2022a, p. 2). Later, she describes that “children were crying and asking for drinking water, people lost their lives because of thirst” (ICRC, 2022a, p. 2). Someone else shared that their “biggest problem is food: [they] can’t find enough to eat. [They] don’t have any money-making activities to buy enough food” (IRC, 2016, p. 2). This statement includes the economic security of the household into their struggle to feed themselves properly. A herder from Burkina Faso, includes even more factors – including economic and environmental issues – into their lack of sustenance: “the rains were scarce. There is no more food. With the lack of grazing, the sheep are getting thinner and this forces us to sell them at a loss. I used to have twelve sheep, but now I only have one left.” (Save the Children, 2022, p. 2). Interestingly, these personal experiences give the same weight to the different aspects of security being affected, with personal and food security being of most concern and community and political security posing the least direct threats. One of the two main outliers is the environmental security, which is mentioned in the documents significantly more than by the civilians. This can, however, be explained by the fact that many people living in these areas are not familiar with the concept of climate change, they only notice the weather being different than before (ICRC, 2020). Another potential explanation could be that environmental security issues usually play a part in causing the main security issues they are experiencing and therefore being less relevant for the description of their current situation. The other differing factor is health security, which was mentioned relatively often over the entirety of the documents, but mentioned much less by the local people. It is suspected that this is because of the lack of personal perspective of MSF, the NGO that is most concerned with health-related security issues. However, despite these two outliers, generally speaking, the main concerns of the local population and the NGO community within the human security framework are food security and personal security.

Continuing to delve deeper into this, the personal security issues are often caused by violence due to the threat it posed for the physical integrity of a human being. In over a third of the personal stories, violence was mentioned to have posed a threat to the victim. And while the perpetrator was not mentioned in almost half of the cases, in, again, almost half of the cases non-state actors were mentioned as the source of violence. While state actors only engage in violent acts in a small number of anecdotes, with the main case being that of the sexual assault on internally displaced women in exchange for food. Apart from this, most cases where state-actors are involved, this portrays a clash between state and non-state actors, explaining that “fighting intensified between government forces and secessionist groups in [the] regions” (MSF, 2019, p. 29). Taking this together, this part of the analysis presents a situation in line with the background literature about the case study, which stated that government actors have left the region and non-state actors are mostly in charge in both the Central Sahel as well as in the Lake Chad Basin.

In their mention of violence, the people on occasion also describe the weaponization of water, and how the resource is used against them. While there are only three cases where this was described, compared to the times weaponization in the entire body of text analysed, these three cases are relatively a lot. Again, one of the cases where this happened is where an internally displaced woman described her experience: “One [Civilian JTF] man came and brought food to me. The next day he said I should take water from his place [and I went]. He then closed the tent door behind him and raped me.” (Amnesty International, 2018, p. 3). In this case the lack of food and drinking water – and therefore her hunger and thirst – were used against her in order to violate her. This constitutes water weaponization under the category of extortion according to King (2023), as later the woman was told by the man: “I gave you these things, if you want them we have to be husband and wife” (Amnesty International, 2018, p. 3). Although this is extortion on the smallest scale, as only one person is threatened, water is still used in order to make her act

according to the man's will. In another case where weaponization was described, a woman told the ICRC that armed men "burned the houses into straws, tore down the sleeping mats, destroyed the water containers and food. They destroyed everything" (ICRC, 2022a, p. 2). In this case, the weaponization is probably not the goal, but more part of a greater rampage. Since the inhabitants of the village fled the scene, this weaponization of water, and the overall scene of violence, could be used as a tactic of psychological terror, leading to the conquering of territory by the armed group, suggesting it would also fit under the strategic weaponization. However, since there is no account of the motivations behind the attack, this cannot be said with certainty. In order to draw a more certain conclusion on this, one would have to analyse the perspective of the armed men, which at present is not available. In yet another case of weaponization mentioned, "the water had been contaminated with dead bodies" (International Rescue Committee, 2016, p. 8). Since there is very little information available, in this case, the type of weaponization can only be analysed through speculation, as there are several possibilities. The first potential form of weaponization would be tactical, this would be an option as in the account by the civilian, she stated that "the daily sound of gunfire and bombs frightened [her]" (International Rescue Committee, 2016, p. 8). This suggests that armed forces are present in the area, and thus the poisoning of the water with human remains could be intentionally placed in order to create a disadvantage for the opposing forces. Another, less likely option would be that it was used as psychological terror, where just like the previous example the aim was to drive people from living in the area, which, in case this was the objective would have been successful since "only the elderly were living there" (International Rescue Committee, 2016, p. 8). This option is less likely, as it seems illogical to want to gain territory, which in this case would have contaminated water. Since the area is extremely arid, and water is already scarce, one would not destroy a water source that they would later intend on using. Lastly, it is possible that the weaponization of these water sources was

unintentional, that the goal of the disposal of the remains was not to contaminate the water, but to simply get rid of the bodies. And while this also may seem less likely, it can simply not be concluded with certainty due to lacking information. In the end, it can be seen that in practice water weaponization can be used to reach multiple objectives and that there is indeed a lasting impact on the victims of this weaponization.

All in all, the testimonies of the civilian population, give a lot of value to analysis and research as this truly gives the personal perspective on the case that is needed. This makes it possible to explore their worries, concerns and stories. In this case they show that the population is mostly worried about the availability of food and water, and effect that violence has, or can have, or their personal security and this is mostly caused by non-state actors.

6.3 Human Security

Following from the above analysis, it is important to explore what influences the human security factors in these cases. This in order to find out whether water weaponization has any influence on this. For this to become clearer, the codes related to human security are going to be analysed against themselves, but also with the weaponization codes, as well as the violence and conflict codes. In addition to this, a comparison will also be made between country codes in order to determine whether a certain human security element is of more concern in different countries.³

Starting with analysing the interconnectedness of the separate variables of the human security theory, the main focus will be on the factors that have been deemed most concerning to the civilians. This means, the starting category is food security, which according to the analysis is the most immediate issue posing a threat to people. Food security came out to be related most to economic security, which is clear from quotes indicating that “people are facing malnutrition and more people are being pushed into poverty every day” (ICRC,

³ The data that this analysis is based on can be found in appendix 2, table 4.

2022a, p. 1). This is a connection that can be expected as people are reliant on their income in order to be able to afford food for themselves and their families, with as a consequence that “an estimated 33 million people in the Sahel are classified as food insecure. Impoverished communities struggle to safely [...] secure a basic income” (ICRC, 2019, p. 2). “With food and income ranking as people’s top concerns, access to earning opportunities and markets are vital in tackling the growing hunger” (International Rescue Committee, 2016, p. 4). Alternatively, the food supply of communities is also dependent on the agricultural success of the farmers, as well as the success of fishermen and herders. “Insecurity deprives farmers from accessing their fields and herders to access pastures, pushing them further at risk of being food insecure” (International Rescue Committee, 2023b, p. 10). Here it can also be seen that this relationship between food and economic security is not a standalone relationship but is also influenced by factors such as personal insecurity, which prevents people from moving freely which limits their ability to earn an income through trade or herding. Similarly, “climate change [contributes] heavily to the economic turmoil the populations in the Sahel are facing and impact massively their access to food” (International Rescue Committee, 2023b, p. 13). This also links to the high number of links found between the environmental code and food security. Which of course is to be expected, as climate change influences the ability of people to make money by working the land or engaging with animals, and since most of the rural population in both the Central Sahel and the Lake Chad Basin gets their income from these types of work, climate change therefore indirectly impacts the food security of these people as well. One other factor that is heavily interrelated with food security is health security, which is demonstrated when “each year between July and October, food shortages and heavy rains trigger a spike in malnutrition and malaria in Niger, especially in the southern regions” (MSF, 2019, p. 67). Again, this relationship is to be expected, since people suffering from malnutrition have a more vulnerable immune system and are therefore more likely to contract diseases or face harsher

consequences of them. Taking all these factors into consideration, it is easy to say that food security in the Sahel is dependent on a lot of factors and also influences other dimensions of security.

The type of security considered most important and lacking apart from food security, as mentioned before, is personal security and therefore the threat posed to people's bodily security. While this factor is not as highly interrelated as food security, there are still a significant number of links with other dimensions. One of them being with food security, which has also been briefly explored above, but another more direct example of how these concepts interact more directly in the example of the internally displaced women who were raped after having been given food. Here food security, or the lack thereof, directly impacts the personal security of these women as their hunger allows them to be lured in such a trap. In the case that enough food would have been available to these women, they would never have accepted such an offer and would therefore be less vulnerable to such threats to their personal security. Another occasion on which the availability of food and water has an impact on personal security has to do with the distance that needs to be travelled in order for people to be able to collect the food or water. A villager explains: "we used to leave home at five in the morning to reach distant pools to fetch water. We would only get back at around noon and then get on with other household chores. Now, we can eat breakfast with our children and have access to water less than a fifteen-minute walk away. We no longer need to face the dangers associated with having to walk to distant water sources" (ICRC, 2022b, p. 6). These dangers posed by the water collection process are also felt when "armed men threaten women on their way to water points by firing warning shots" (UNICEF, 2023, p. 5). This incredible distance, which can sometimes be up to 35 kilometres, of course plays an incredible role in the life of a woman – who is responsible for water collection – and their security (International Rescue Committee, 2023b). In some cases, these distances to water points are not only caused by scarcity but enlarged due to climate change, when "climate change and lack of

infrastructure forces people to walk [great distances] to these basic commodities” (International Rescue Committee, 2023b, p. 7). In addition, “the herders and their families had been looking forward to no longer having to face danger and harsh climate to fetch water from sump pits and small wadis far from their homes” (ICRC, 2022b, p. 2). Confirming that this is a problem in this community as well. In another case, “natural hazard comes at a heavy human and financial cost” (International Rescue Committee, p. 6). An example of such a natural hazard is an abundance of water in the shape of a flood, taking human lives. In this way, it can be seen that also the second most mentioned threat is very interrelated with other human security aspects. This connectedness is important to be aware of, as this hints towards the various ways in which human security can be impacted, and when impacting one, the human security of a person might be impacted over the entire spectrum due to the fact that impacting one category, other parts of people’s lives can also be impacted.

In order to give a complete overview of the situation, the correlation between conflict, violence and the human security categories needs to be examined, since the literature indicates that conflict also greatly impacts human security, and this is an integral piece of the situation of analysis. As the conflict-climate nexus literature suggests, the analysed documents do also point towards a connection between the concepts as they have been mentioned together often. “Mali, like other countries in the Sahel region, is in the grip of an armed conflict whose impact has been aggravated by climate change” (ICRC, 2022b, p. 1). And it is even said that “climate change and conflict make an explosive mix in the Sahel” (ICRC, 2019, p. 1). Indicating that the combination of the two phenomena pose significant threats and sources of potential harm to civilians. On occasion, there is even hinted towards a direct link where “the effects of climate change are exacerbating conflict between communities [...], leading to a deepening poverty, a weakening of public service and a disruption to traditional means of survival” (ICRC, 2019, p. 1). In this case, it can also clearly

be seen that the double impact of climate change and conflict have an impact on multiple other human security factors.

Where food and economic issues were the most related factors with environmental influences, in armed conflict these are the same, meaning that – apart from environment – the most correlation was found between conflict and economic and food security, respectively. The correlation with economic security can be seen when “in situations of conflict, insecurity is the only one of the menaces people face. They may lose their homes and their livelihoods” (ICRC, 2020, p. 16). These livelihoods are lost in situations when “herders who needed to move with their animals were trapped in place. Farmers could no longer reach the fields” (ICRC, 2020, p. 36). This loss of income is of course very impactful on anyone’s life and can have devastating consequences, this because those people “lost their income and harvest” (International Rescue Committee, 2023b, p. 6). This can lead to a food crisis in which “people are facing malnutrition and more people are being pushed into poverty every day”, heavily impacting their security (ICRC, 2022a, p. 1). From this, the strong link between food and economic security itself can also be spotted again on top of their relation with conflict. However, at times, there also seems to be another relationship between the two factors, this is where “the risk of conflict grows further in some cases because of indirect, often economic, impacts of climate change” (International Rescue Committee, 2023a, p. 7). In this case, the conflict and environment are not the influencing factor, but only climate change. Which, like also explored above, influenced the financial situation people find themselves in. This worsened financial status then leaves people more vulnerable to conflict and violence, as – according to the human security report (1994) – homelessness is the most severe form of economic insecurity and leaves people without protection from people with ill intentions. In addition to this, poverty can also be a factor in one’s decision to join armed forces, as these will usually provide commodities such as food and accommodation. This way,

the interaction between conflict, climate, food security and economic security is important to analyse due to the tremendous impact it has on populations.

While conflict is most heavily linked with the above-mentioned factors, violence is however not. The violence mentioned within the analysed documents mainly had influence on the personal security of the non-combatants. This of course is again a relationship that is to be expected, as violence often – and especially in conflict – is aimed at people, and the very definition of personal security is the protection against violence. In an example “thousands of women and girls who survived the brutal rule of Boko Haram have since been further abused by the Nigerian security forces” (Amnesty International, 2018, p. 1). Here the abuse of the women portrays both the violence and the suffering of personal security of the women. In another case, people “risk being assaulted, injured or killed by improvised devices, or robbed”, which like in the previous example does not mention violence specifically, but does imply it, and the personal security of people is obviously impacted (ICRC, 2022b, p. 3). The threat of violence can become so substantial that there can arise an occasion where “the situation is most critical to the 400.000 displaced people across the country, who have been forced from their homes because of violence” (ICRC, 2022a, p. 1). Like mentioned before, homelessness and thus also displacement have a very serious impact on people’s daily lives and can therefore not be underestimated as a consequence of violence. This displacement is not only increasing the insecurity of the people fleeing, but can also be a burden on the people taking them in (International Rescue Committee, 2016) These “generous communities have taken them in, sharing what little resources and assets they have. The host population themselves are therefore very vulnerable, and the economic situation is [...] plunging them in to hunger” (International Rescue Committee, 2016, p. 4). This way, the suffering also spreads to areas that might not be in conflict or insecurity yet, and could potentially spread the harm being done.

Another potential source of violence causing insecurity is when “security risks along the main supply routes continue to limit the imports of basic foodstuffs on the markets that rely heavily on these arrivals to function, [which causes that] prices are at record levels” (International Rescue Committee, 2023b, p. 9). Because the food products are less frequently – or not at all – delivered to the markets, the food becomes increasingly scarce which drives up the prices. On the other hand, the products not reaching the markets, also makes that they are not being sold and therefore livelihood is lost for the person producing the goods, and therefore impacting their financial position and economic security. This way, the violence does not necessarily have to directly attack certain people but can also threaten certain roads in order to decrease the security of the people. This is an example of how, “violence in the Sahel is not only fuelling the food crisis, in many places it is instigating one” (ICRC, 2022c, p. 2). This is because in certain regions, such as “the northern regions of Burkina Faso, between 30% and 50% of land under cultivation has been lost due to insecurity” and violence (ICRC, 2022c, p. 3). Similarly, “hundreds of thousands of people have seen their livelihoods disrupted as agricultural land became inaccessible due to the threat of violence” (ICRC, 2022c, p. 3). This showcases that violence does not even have to be executed in order to influence security, the threat of violence is already enough to leave a mark on people’s lives. Summarising this “it is civilians, as usual, who bear the brunt of this spiralling violence. Not only do they face targeted killings, kidnappings, displacement, looting, death or injury from mines and harassment by the various armed groups, but also restrictions on their movements and access to basic services such as healthcare and food supplies” (MSF, 2019, p. 13).

Lastly, it is of utmost importance to the research to analyse and discuss the relation between human security and weaponization to be able to come to an answer to the research question. Since there are only limited mentions of weaponization in the body of texts, there have again not been many relations found, but the relations that have been found seem to be essential to the research.

Once again, the most linked with weaponization within the human security theory, have been laid with food security. This can be explained by the fact that the weaponization of water over often abuses water and leaves it useless for human consumption, and therefore it impacts food security through the increase of water scarcity. Especially this type of weaponization occurs a significant number of times in Burkina Faso, and more specifically in Djibo. Here, Burkina Faso [...] saw a significant ramping up of attacks on water facilities as a tactic to forcibly displace communities” (UNICEF, 2023, p. 5). This resulted in “223.000 people [having] seen their access to safe water severely restricted in March 2022 when 12 waterworks were sabotaged” (International Rescue Committee, 2023b, p. 10). These events have, however, not been limited to Djibo, but have occurred in other regions in Burkina Faso as well. “In Burkina Faso, a water crisis can be observed on a national level. In certain regions affected by conflict, water points are being destroyed, while the deterioration of water infrastructures in other places is having a severe impact on people’s daily lives” (ICRC, 2022c, p. 3). In some cases, the scarcity – while not only caused by the weaponization, it has been worsened – causes “people [to] wait in line for 72 hours to access boreholes” and “should the situation deteriorate further, [they] are facing the real possibility of people and animals dying of thirst” (ICRC, 2022c, p. 3). Through these testimonies, it is clear that the weaponization does indeed impact people’s access to drinking water that is already incredibly scarce. As far as has been recorded, “fifty-eight water points were attacked in Burkina Faso in 2022, up from 21 in 2021 and three in 2020” (UNICEF, 2023, p. 5). This shows an increasing trend and thus an increasing impact on the scarcity of drinking water and food insecurity. This trend also suggests that events like these are likely to happen more frequently in the future, increasing the impact this will have on the population suffering its consequences. In addition to this, the local water points have not been the only target of armed groups as “UNICEF-supported water trucks have been burned, and water storage facilities destroyed” (UNICEF, 2023, p. 5). Which means that

even humanitarian aid is – on occasion – under attack by armed forces. In addition to this having an impact on the food security, the health of especially children is also at stake, as “unsafe water can cause malnutrition or make it worse, no matter how much food a malnourished child eats, he or she will not get better if the water they are drinking is not safe” (UNICEF, 2017, p. 2). Again, this way the impact of water weaponization trickles through the human security framework, impacting more than immediately visible.

Another instance where water weaponization has impacted food security are in the north eastern region of Nigeria where “75 per cent of water sanitation infrastructure in conflict-affected areas has been damaged or destroyed, leaving 3.8 million people with no access to safe water” (UNICEF, 2017, p. 2). These attacks, are also important to take into account, as first of all, it signifies that water weaponization is a phenomenon that is not limited to Burkina Faso, but that also Sahelian countries are affected. More importantly, this is the infrastructure that is impacted, and therefore it can be expected that these attacks hinder more people than attacks on a single water storage place, as more water is processed in these sites, and therefore impacting the life of 3.8 million people. Another example of weaponization in Nigeria impacting food security, is the one mentioned above about the internally displaced women being raped after accepting food and water from government forces. However, this does not impact their access to food and water alone, being raped also has a tremendous impact on the physical security of a person, and therefore definitely also impacts the personal security on top of the food security. Although this is more on a personal level and does not impact millions like the previous example, it is an interesting perspective to take, as in this case water – or food – was not taken away or restricted by the men as was the case before, but given, making the interaction between perpetrator and victim completely different. This distinction, points towards the fact that this form of weaponization falls under a different and distinct category: weaponization as a means of extortion. Where the aforementioned instances of attacks on water infrastructures – whether they

are attacks on sanitation systems or water storages or points – they are most likely not used for extortion, as, like mentioned before, displacement was the goal. The categories of weaponization that more likely fit the attacks on water infrastructure and collection points are psychological terror, strategic weaponization of unintentional weaponization, like discussed previously. It is also a possibility that some of these categories overlap, as psychological terror can very well be used as a tactic in an overall strategy of weaponization. Potentially making the attacks both a means to instil psychological terror among a population, and a strategic move of weaponization in order to serve political and military objectives of the perpetrators. However, since there is not enough information to determine which one of these categories the attack actually fall into, more research is needed to provide a conclusion on this.

Relatively different from the aforementioned examples, in Mali, non-state armed groups have acted as “state-like entities that build and maintain their legitimacy in the local community by providing some basic public services, such as land and water management and justice systems” (International Rescue Committee, 2023a, p. 9). In this case, the aim is not to harm the population like was the goal in the other examples, but the aim is to gain the trust and support of the citizens of the area where these services are provided. Here, the metaphorical carrot is used rather than the stick. According to the literature, this tactic is used in insurgencies to gain the support of the people and showcasing that their leadership is superior over that of the government, since these are often lacking in those services or protection (Kiras, 2009). This support of the population and the services provided increase the legitimacy of the armed insurgency in the area or even country, and while this provision might not typically seem like a form of weaponization, but when successful it does definitely grant an advantage over their government counterpart, and therefore, according to the definition King (2023), provides in his framework, it does constitute to weaponization. Also, since water is used to gain this advantage, this action can also be classified as water weaponization. Within the water

weaponization framework, this approach can again fall under several categories. First of all, it can fall within the same category as the women raped for water, namely extortion or incentivisation, but where the previous example falls under extortion, the provision of services belongs to the other side of the coin, and therefore is incentivisation. This because, the services are provided in order to encourage the population to support the insurgency over the government, in case the water management was only conditional on support, it would start leaning more towards extortion. Since, again, not all information is provided, one cannot be completely sure whether it falls under this specific category, but with the information available, it is highly likely that this is a form of incentivisation. In the case that this is indeed incentivisation, an interesting relationship can be found between the weaponization and human security. This because the armed groups, that, according to the analysis, otherwise cause an incredible amount of harm and negative impact on the human security in the region, actually have a positive impact on the situation. Due to the water management efforts, the provision of water should be more effective and therefore, increase the food security through the rising availability of clean drinking water. Consequently, this should then also affect the personal security since people are no longer forced to travel great distances, or wait for days to acquire some drinking water. When having safely acquired the water, and having it more available, health security and economic security will also be impacted as has been determined above. Even political security is then affected as there are people making sure that the basic needs of the people are met. While having to do little with water, the justice system in mentioned in the example, can ensure safety and provide repercussions for threats to safety. One other way this incentivisation can impact people is through community security, which might deteriorate when not all communities are provided with the same services, although there is no evidence in the research for this. With all this, it is necessary to note that while supporting insurgents can definitely result in short-term benefits, it is to be expected that there might be repercussions from the state if the territory is ever reconquered.

All in all, it can be said that human security has proven to be a significant issue in both the Central Sahel and the Lake Chad Basin, for NGOs as well as for the people living in the region themselves. In this mainly the lack of food security and personal security are indicated to cause problems for the civilian population, with climate change, armed conflict and violence being significant influencing factors. However, these are not the only impactful factors when speaking of human security, as there is also an interrelatedness within the framework with various categories having an effect on each other. This way, when an event impacts one category, this can indirectly also influence the security of people more broadly. Lastly, weaponization does on occasion also significantly impact human security – especially in Burkina Faso and Nigeria – as the access to water is further restricted by the destruction of water collection points or sanitation systems, deteriorating the food security in the area. Alternatively, weaponization of water can also have a positive impact on the food security, when food is provided in exchange for support and it is used as an incentive. However, when food is provided in order to do harm, the food provision falls short compared to the harm done to the personal security.

6.4 Water Weaponization

As has been discussed before, even though it might appear to not occur as frequently as in other places in the world, NGOs have recorded a number of incidents that each have a significant impact on people living in the Sahel. While it is interesting to see that food security is impacted so greatly by water weaponization in Burkina Faso and Nigeria, and that water weaponization increases the food security on occasion in Mali, there are other relationships – or the lack thereof – that should be explored as well.⁴ Starting with tactical weaponization, as even though weaponization would indicate a military use, and the theory also assumes that more opposing combatants are involved, within the analysed texts, there has been only one mention of a potential case of tactical

⁴ The data that this analysis is based on can be found in appendix 2, table 5.

weaponization (King, 2023). Meaning that perpetrators in the Sahel either do not see, or do not use, the water weapon as something to be used against an armed opponent, but against the civilian population, and either threatening them, or making them comply with the objectives of the armed forces. It does however, have to be acknowledged that since the government forces and institutions have mostly abandoned the regions of conflict, this limits the opportunities for insurgencies or armed non-state actors to use water weaponization tactically.

Additionally, the fact that the phenomenon has, in these documents, only been recorded in Mali, Nigeria and Burkina Faso, does not mean that it does not occur in the other countries that are analysed. It simply means that the reports did not cover the phenomenon of water weaponization in those countries. Whether water weaponization is an issue of interest in countries like Chad, Cameroon and Niger remains to be seen, as more research is needed in order to determine this. However, the fact that it is happening in Mali and Burkina Faso, indicates that the Central Sahel is indeed targeted by the phenomenon, and that it is possible that also Niger has to suffer the consequences. The same goes for Chad and Cameroon, especially because the area of conflict around Lake Chad spread over the four countries is relatively small, and therefore this tool of warfare could spread more easily. Even when water weaponization as a weapon is not used in a certain area, does not mean this area does not feel the consequences, due to the fact that in the area drinking water is scarce everywhere and still needs to be shared among the same number of people. Making that in total, more people suffer than only the ones directly hit by the water weapon.

Then, the relationship between water weaponization and conflict and violence is also one important to discuss. This because one would expect that the analysis shows that there is a strong connection between both weaponization and violence as well as weaponization and conflict, but this does not appear to be the case according to the analysis. The research indicates that only one direct

connection is found between conflict and weaponization, while conflict, of course, lays at the foundation of the reason for using such a weapon, and therefore more links are to be expected. Similarly, violence is only recorded in a third of the weaponization events, while weaponization would seem to include violence. However, for example, contamination of a water source, or providing water management services to a population, of course has nothing to do with violence. This opposed to, water weaponization in a rampage, or weaponizing water by threatening the personal security of a person through warning shots or worse, rape. However, the analysis does show that – with or without violence – in most cases, weaponization in the Sahel comes from ill intention towards civilians. The analysis gave only one exception to this, which is the case of weaponization through provision of water in exchange for support and legitimacy for the armed non-state group.

On top of this, it is important to mention that, besides the influence water weaponization has on the human security framework, the impact of this weaponization is also influenced by factors such as environmental security. This because, the condition of the land due to, among others, climate change is significantly different than it has been before. Water is a resource that is already scarce in such an arid region, that has less regular precipitation and more extreme weather events than in the past. This makes that a ‘waste of water’, which water weaponization in many cases is, is more effective as a relatively greater portion of the total amount of available water is either wasted or drastically decreased in quality, compared to a region or time when more water was available to the population. This makes that water weaponization is most effective, and therefore influential, when the climate and conditions are already dry and water scarce. In this way the human security framework and water weaponization, at least to a certain extent, have a relationship of influence that works both ways.

In the end, water weaponization does have an influence on the human security of the Sahel in various ways, but while weaponization can be expected

to be targeted towards military objectives, in the Sahel, it is mostly used against the civilian population. Apart from this, weaponization is not necessarily violent but does usually affect the human security of the civilians negatively, with the analysis recording one exception. Then, the relationship between human security and water weaponization does not solely work one way, but the impact of weaponization is also influenced by human security factors, and whether this was already negatively impacted or not. Finally, the analysis clearly shows that water weaponization does indeed have an impact on the human security in the Sahel, with the most direct relationship with food security. This impact trickling down to the other human security categories – like economic security and health security, which are heavily related to food security – the impact of the water weaponization becomes greater and greater, albeit at times indirect.

7. Discussion

The above content and discourse analysis aims to provide results with the goal to draw a conclusion whether the weaponization of water influences the human security, and its categories, in the Sahel. This with a focus on the personal perspective of the local civilians in order to determine what form of insecurity impacts them the most, and whether water weaponization has any impact on this. The result discussed above indicates that there is indeed such a relationship, meaning that water weaponization does impact human security, and mostly through food security and to a lesser extent personal and political security. The content analysis suggests that the relationship between the two concepts is more than just correlation as quotes from the analysed documents state that as a consequence of water weaponization people were left without access to drinking water, directly impacting their food security. The research does, however, also demonstrate indirect links between water weaponization and human security, as a lack of access to drinking water, like mentioned before, also seems to impact personal, economic and health security according to the analysis. Civilians did not speak about water weaponization often, but did mention it on occasion,

indicating that it does happen and has an impact on the people. In almost all cases, this impact is negative and therefore decreases the human security of the population, but in one instance, a positive outcome could be detected as water management services were provided.

This means that water weaponization, even though it is only recorded by NGOs on limited occasions and recorded by civilians in those reports even less, does seem to impact the human security in the Sahel – both in the Central Sahel and in the Lake Chad area. This can be either directly or indirectly, depending on the event of weaponization and its consequences and the type of human security that is being considered. And while the positive influence of water weaponization is worth mentioning, this seems to be a rare exception when compared to the cases where it does harm to the people living in the affected area. This way, the actors using the water weapon take their advantage from the fact that the civilian population in the area is caught between both conflict and climate change – which increases the scarcity of water of sufficient quantity and quality –, exploiting both phenomena to use the water weapon to their own benefit. In some cases, the impact of the events of water weaponization affect the lives of up to 3.8 million people, as mentioned in the analysis. Seeing as this is a significant number of people, it seems the impact of water weaponization can be quite far in reach. On other occasions, while the impact is definitely not less significant, it only impacts one person, like the case of the Nigerian displaced woman being raped. This shows that water weaponization can be used in very different ways, and can have impact on different scales and different human security categories.

As mentioned before, the existing literature on the topic of water weaponization is extremely limited, although not non-existent, and like the result of this analysis, King (2023) indicated that water has indeed been weaponized in Nigeria. However, a case study of the wider region of the Sahel with his framework has not been conducted yet, giving no material for comparison. Taking this in mind, the addition of the human security theory to

the research, makes that there is nothing to compare the research to, as this personal perspective has not been taken yet on this topic. This does mean that the research adds to the existing body of literature, adding in the climate-conflict nexus, human security scholarship but also the work on water weaponization. All this, in accordance with the requirement set by Su & Gagné (2019) who demand a more personal perspective on issues involving the climate-conflict nexus. Therefore, the gap that has been identified and filled with this research can be regarded as a starting point for increasing research on the topics of water weaponization and a more human and personal focus on the climate-conflict nexus. This increasing research is needed as more insight into the reality of these topics, can provide useful knowledge in order to tackle these sorts of problems on the ground and aid people in helping the civilians.

While this research can be a good starting point for future research, there are limitations to both the analysis and, mostly, the methods used to get to these results. The first of which is the main methods and sources used to conduct the analysis, being the discourse and content analysis of NGO output. Like mentioned in the limitations section of the methodology, the ideal method to be used for the collection of a personal perspective in a situation like this is ethnography. While this is not feasible within the time limitations of a master's dissertation, the second-best option would have been to conduct interviews with people that have been in a situation where water was weaponized, and would be able to describe their perspective on the matter. However, this was also not within the possibilities due to restrictions put on the dissertation as well as barriers including language and space. The NGO reports and the content analysis that was done on them, was an acceptable alternative, but of course cannot measure up to a true first-hand source. Another issue that comes from the NGO reports is that the information from the personal narratives has been filtered by the NGO and only part of the description is published, which could lead to the filtering out of essential information for the research.

On top of this, while there was a significant number of civilian perspectives presented in the documents, more accounts on the topic of water weaponization would have been incredibly valuable to the validity of the research. This because twelve events of water weaponization can be considered to be too small a sample size to draw a valid conclusion as these twelve cases might be exceptions to the rule or give a false representation of the number of types of cases. Following this, a higher number of civilian perspectives regarding the weaponization of water could have given more clarity about the way it impacted them, as this was often not mentioned, although implied. In addition to this, accounts of (former) insurgent members regarding the topic of research, can give an incredible insight on the reasons behind the attack, so that the events can also be classified with more certainty. This would be valuable insofar that this would expand the base of analysis, as these variables can then also be more included in the research and its outcomes. Meaning that it could be analysed whether certain types of attacks have impact on different categories of the water weaponization framework, which would increase the validity of the research.

Another limitation of the methodology, and specifically the data collection, is that the number as well as types or documents are incredibly limited. A variation in the sources could potentially result in different outcomes due to the diverging focuses that different forms of media might have. The addition of other media such as regular media reports or social media posts to the analysis can give a more complete image of the situation as there is a greater sample to collect information from. This could also give a perspective given by people inside the community through local news outlets or social media posts created by local civilians or even insurgents, instead of being displayed by a foreign, global organisation. Which could give an added layer of significance to the research and the personal perspective it aims to portray. The inclusion of these materials would, however, significantly increase the time needed for the analysis and also increase the methods needed to extract the information from

the collected sources. This diversification would make the research more valid, as it is likely to cover a wider audience within the local population and therefore recording more experiences and identify more cases of water weaponization, if they have happened.

All in all, while the mentioned limitations do have an impact on the research and its validity, and the improvements that could come from it could definitely improve the research in terms of validity, this does not mean that the results are invalid altogether. As the selected documents for this research do prove that incidents of water weaponization have happened in approximately the last decade, and that they do also have an impact on the human security in the region, whether this is impactful or millions or only a few. The credibility of the sources does help in this, as it can at least be assumed that the statements that have been made, and used in the analysis are true, signifying that in the end the research question can be answered. This answer is discussed in the following section, which also includes some recommendation for further research that can follow up on this analysis.

8. Conclusion

This research aimed to determine whether the consequences of water weaponization – according to King’s (2023) framework and definition – has an impact on the human security landscape in the Sahel region in Africa. Through a discourse and content analysis on texts – in the form of reports and web page content – published by international NGOs the research aimed to provide a personal perspective on the matter, giving space to the opinions and concerns of the local population. While there are methods better fit to explore this, within the time and resources available for this project, the methods used were more feasible and still gave results that lead to a conclusion. The perspective of the NGOs and the differences between them, also provided interesting and relevant insight into how human security is influenced in the area. This shed light on the possible ways that human security could be impacted by water weaponization, making it essential in answering the research question. In this way, the chosen

methods are providing all the necessary information for the research. All this leads to the conclusion that weaponization of water mostly impacts the human security of civilians in the Sahel region through food security, with personal and political security being impacts to a lesser extent. Adding to this that food security is also the top concern of the local population, weaponization definitely does leave its mark on the region.

Clearly illustrating this impact, this does raise questions about whether there are further impacts of water weaponization on the region and the people living in it, and whether these tactics are taken into account by actors such as the NGOs but also government institutions fighting the insurgent groups. On the other hand, it would be interesting to find out the perspective of the insurgent, or abuser of the drinking water, about their motives to use such a weapon, making the classification of the water weaponization events also more relevant to the analysis and conclusion. Another question that is raised through this research is whether the insurgents intentionally weaponize water or that it is more a consequence of other tactics and weapons they use. Lastly, it would be interesting to find out how water weaponization impacts the people within the insurgent groups, and the larger organisation as well. All these questions that are raised as a consequence of this research, can serve as further research concerns and questions in order to broaden the body of literature and knowledge on this water weaponization-human security nexus. Also adding to the larger scholarship on the climate-conflict nexus during the ongoing conflict, which could benefit incredibly from additional literature, as this is currently still limited.

Apart from broadening the scholarship on the water weaponization-human security nexus, further research could also focus on the deepening of the research done in this project, meaning that the limitations mentioned in the discussion can be taken into account and adjusted for. This would create more inclusive and elaborate results and therefore a more valid conclusion, due to a larger number of sources to gather data from, but also a more varied body of

documents. This could be done in the Sahel again, to also gather information about a larger number of events including water weaponization, or in another region in the world which is impacted by both climate change and armed conflict. However, the Sahel region is, at the moment, lacking important research being done into water weaponization and could therefore be a case study in which a significant contribution can be made to the existing literature. Adding to the literature – while this is of course always essential – is incredibly important in this case as a growing trend of water weaponization can be seen in the analysis, indicating that this issue will occur more often in the future and will thus become more impactful on people's lives.

Reflecting on the literature review, the conclusion drawn from the results adds to the existing literature in the research into the climate-conflict nexus, focusing on ongoing conflict. More specifically, this research adds to the incredibly limited water weaponization literature, as well as the literature on what factors influence human security in conflicts where climate change also plays a significant role. Due to the increasing frequency of water weaponization occurrences, more attention needs to be paid to the topic in order to gain more knowledge and build strategies against the phenomenon, making sure that this problem is tackled and mitigate the impact it has on people's lives. This not only in the academic community, but also on the policy level of the international as well as the national level, and the humanitarian spheres, in order to work towards a world where water weaponization is something of the past. This research is a starting point for this further research, points towards the importance of the topic and hopes to contribute to a future where water weaponization is actively handled. In the end, like international law states, essential natural resources, should not be used as a weapon of war, but clearly this is not reality.

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Appendix 1

Below are the codes that have been used in the coding for the analysis:

Actors: this category is not coded in itself but only the categories within it. When the groups of actors are coded, this means that these people have been given the opportunity to speak and tell their story in the document. This is order to be able to analyse which actors are given an opportunity to speak.

- Civilians
- NGO workers
- Non-State Actors
- State Actors

Conflict: this code is coded itself and used whenever conflict is mentioned or mentioned to have influence on something or someone.

Country: again, this code is not coded itself, but only the separate categories are. They are used whenever an event is mentioned to have happened in a certain country or specific circumstances are described to be present in a certain country. In this only the countries of analysis are taken into account.

- Burkina Faso
- Cameroon
- Chad
- Mali
- Niger
- Nigeria

Human Security: this category of codes follows the categories discussed in the theoretical framework and the human security theory. It is used whenever something has an impact on one of the categories of human security.

- Community
- Economic
- Environment (in the coding file this is outside of the human security code, but this was a mistake but a lot of effort to change in the end).
- Food
- Health
- Personal
- Political

NGOs: here the publishing NGOs are coded. This is one per article, in order to be able to analyse whether there is a difference of portrayal or content between the different NGOs.

- Amnesty International
- ICRC
- IRC
- MSF
- NRC
- Save the Children
- UNICEF

Violence: this category of codes is used both in the first and second tier (violence itself and its categories), and records the mentioning of violence – which can be either by state or non-state actors – and it also codes when this has an impact on anyone or anything.

- Non-State Actors
- State Actors

Weaponization: in this set of codes both the main code and the sub-codes are used in order to record the instances of the weaponization of water according to the theory of King (2023). This is also coded in combination with a human security code whenever possible in order to be able to analyse whether the weaponization has an impact on human security, which is in the end the main question to be answered.

- Coercive
- Extortion/Incentivisation
- Psychological Terror
- Strategic
- Tactical
- Unintentional

Appendix 2

	A : Amnesty ▼	B : ICRC ▼	C : IRC ▼	D : MSF ▼	E : NRC ▼	F : StC ▼	G : UNICEF ▼
1 : Civilians ▼	3	22	12	2	0	3	7
2 : NGO workers ▼	4	14	1	7	0	4	2
3 : Non-State Actors ▼	0	0	0	0	0	0	0
4 : State-Actors ▼	0	0	0	0	0	0	0
5 : Conflict ▼	0	28	19	9	6	4	7
6 : Burkina Faso ▼	0	10	19	8	4	4	10
7 : Cameroon ▼	0	0	3	1	3	0	0
8 : Chad ▼	0	0	10	1	4	1	0
9 : Mali ▼	0	24	17	2	6	3	3
10 : Niger ▼	0	9	19	3	4	3	2
11 : Nigeria ▼	8	3	17	3	3	1	2
12 : Environment ▼	0	42	30	18	2	3	2
13 : Community ▼	1	11	8	3	0	3	1
14 : Economic ▼	1	33	36	5	3	4	1
15 : Food ▼	9	37	36	18	3	17	13
16 : Health ▼	4	7	11	24	0	9	8
17 : Personal ▼	15	21	27	11	2	7	14
18 : Political ▼	2	8	7	0	1	3	1
19 : Violence ▼	8	26	19	22	8	8	13
20 : Non-State Actors ▼	2	4	14	11	8	1	12
21 : State Actors ▼	8	0	3	4	2	0	1
22 : Weaponization ▼	1	3	3	0	0	0	5
23 : Coercive ▼	0	0	1	0	0	0	0
24 : Extortion-Incentivism ▼	1	0	1	0	0	0	0
25 : Psychological Terror ▼	0	1	0	0	0	0	1
26 : Strategic ▼	0	0	0	0	0	0	1
27 : Tactical ▼	0	0	0	0	0	0	0
28 : Unintentional ▼	0	0	0	0	0	0	1

Table 2 Comparing the codes of the NGO against the other codes.

	A : Civilians ▼
1 : Conflict ▼	3
2 : Environment ▼	5
3 : Community ▼	1
4 : Economic ▼	11
5 : Food ▼	17
6 : Health ▼	4
7 : Personal ▼	19
8 : Political ▼	1
9 : Violence ▼	17
10 : Non-State Actors ▼	8
11 : State Actors ▼	2
12 : Weaponization ▼	3
13 : Coercive ▼	0
14 : Extortion-Incentivism ▼	1
15 : Psychological Terror ▼	1
16 : Strategic ▼	0
17 : Tactical ▼	0
18 : Unintentional ▼	0

Table 3 Comparing the code of the civilians against the other codes.

	A : Environment ▼	B : Community ▼	C : Economic ▼	D : Food ▼	E : Health ▼	F : Personal ▼	G : Political ▼
1 : Conflict ▼	37	8	23	23	10	15	8
2 : Environment ▼	97	12	41	30	15	12	9
3 : Community ▼	12	27	6	2	0	9	3
4 : Economic ▼	41	6	83	37	8	19	8
5 : Food ▼	30	2	37	133	36	26	4
6 : Health ▼	15	0	8	36	63	11	2
7 : Personal ▼	12	9	19	26	11	97	6
8 : Political ▼	9	3	8	4	2	6	22
9 : Violence ▼	9	9	11	25	14	49	4
10 : Non-State Actors ▼	1	6	6	10	3	25	5
11 : State Actors ▼	0	2	1	7	1	11	0
12 : Weaponization ▼	0	0	0	6	0	1	1
13 : Coercive ▼	0	0	0	0	0	0	1
14 : Extortion-Incentivism ▼	0	0	0	1	0	1	1
15 : Psychological Terror ▼	0	0	0	1	0	0	0
16 : Strategic ▼	0	0	0	1	0	0	0
17 : Tactical ▼	0	0	0	0	0	0	0
18 : Unintentional ▼	0	0	0	1	0	0	0
19 : Burkina Faso ▼	10	1	10	29	7	11	1
20 : Cameroon ▼	1	0	1	2	1	1	0
21 : Chad ▼	4	0	5	8	3	1	0
22 : Mali ▼	20	6	16	13	4	11	4
23 : Niger ▼	13	3	12	14	5	7	2
24 : Nigeria ▼	8	2	7	17	8	9	2
25 : Civilians ▼	5	1	11	17	4	19	1
26 : NGO workers ▼	9	3	2	11	4	6	1
27 : Non-State Actors ▼	0	0	0	0	0	0	0
28 : State-Actors ▼	0	0	0	0	0	0	0

Table 4 Comparing the codes of the human security against the other codes.

	A : Weaponization ▼	B : Coercive ▼	C : Extortion-Incentivism ▼	D : Psychological Terror ▼	E : Strategic ▼	F : Tactical ▼	G : Unintentional ▼
1 : Conflict ▼	1	0	0	0	0	0	0
2 : Environment ▼	0	0	0	0	0	0	0
3 : Community ▼	0	0	0	0	0	0	0
4 : Economic ▼	0	0	0	0	0	0	0
5 : Food ▼	6	0	1	1	1	0	1
6 : Health ▼	0	0	0	0	0	0	0
7 : Personal ▼	1	0	1	0	0	0	0
8 : Political ▼	1	1	1	0	0	0	0
9 : Violence ▼	4	0	1	2	1	0	0
10 : Non-State Actors ▼	2	1	1	1	1	0	0
11 : State Actors ▼	1	0	1	0	0	0	0
12 : Burkina Faso ▼	6	0	0	1	1	0	0
13 : Cameroon ▼	0	0	0	0	0	0	0
14 : Chad ▼	0	0	0	0	0	0	0
15 : Mali ▼	1	1	1	0	0	0	0
16 : Niger ▼	0	0	0	0	0	0	0
17 : Nigeria ▼	0	0	0	0	0	0	0
18 : Civilians ▼	3	0	1	1	0	0	0
19 : NGO workers ▼	0	0	0	0	0	0	0
20 : Non-State Actors ▼	0	0	0	0	0	0	0
21 : State-Actors ▼	0	0	0	0	0	0	0

Table 5 Comparing the codes of the water weaponization against the other codes.