



Addressing the weaponization of natural resources

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Introduction

Since the beginning of time, wars have been fought over natural resources. In a study by the United Nations Environment Programme (UNEP), it was found that at least 40 percent of all conflicts worldwide have a link to natural resources. This link also often plays a role in a possible relapse of the conflict. A rise in violent conflicts has resulted from the exploitation of natural resources worldwide, regardless of whether it involves high-value resources like metals and minerals, or scarce ones like water. There is no direct link between climate change and conflict, but it is seen as a threat multiplier that exacerbates resource scarcity and to a lesser extent, existing vulnerabilities to conflict.

According to the Security Council, climate change has the potential to have significant implications for international security and specifically resource scarcity. (*Conflict and Natural Resources*, n.d.)

While control of natural resources is most often not the main cause of conflict, one cannot overlook its contribution to it. As global trends such as population growth, increasing consumption, and climate change persist, vital natural resources such as water are increasingly placed under threat. The weaponization of these natural resources often results in devastating damage to communities and ecological and economic structures. Complex solutions must be created to ensure the safe and ethical uses of natural resources that will work to prevent future conflict.

Definition of Key Terms

Environmental terrorism

Environmental terrorism refers to the use of environmental destruction or degradation as a means to achieve political or ideological goals. This can include the weaponization of natural resources, but also vandalism and the destruction of built environments such as infrastructure.

Natural resources

The World Trade Organization (WTO) defines natural resources as “materials that exist in the natural environment that are both scarce and economically useful for production or consumption, either in their raw state or after a minimal amount of processing.” (*Natural Resource Scarcity Is a Threat to Our Security*, n.d.)

To weaponize

The definition of weaponizing is “to adapt something for use as a weapon of war”. However, it is important to note that the weaponization of natural resources is not limited to armed conflict anymore, and those cases will also be discussed in this report.

Nord Stream 1 and Nord Stream 2

The Nord Streams 1 and 2 are undersea pipelines in the Baltic Sea that connect Russia to Germany. These pipelines are used for the transportation of gas from Russia to Germany and from there to the rest of Europe. These pipelines provide 40-50% of Europe’s gas supply.

Cloud-seeding

Cloud seeding is a weather modification technique aimed at enhancing precipitation from clouds. Cloud precipitation efficiency, defined as the ratio of the amount of rain reaching the ground to the amount of water vapour entering the cloud base, is often clearly below unity. The idea of cloud seeding, first conceived after World War II, is to increase precipitation efficiency artificially, and despite many scientific uncertainties that persist, it has become a much practiced activity in many arid regions of the world. (*Weather Modification*, n.d.)

Environmental Modification (ENMOD) Treaty

ENMOD is a UN drafted, international treaty prohibiting the military or other hostile use of environmental modification techniques having widespread, long-lasting or severe effects.

General Overview

Relation between the weaponization of natural resources and environmental terrorism

When searching for information on the weaponization of natural resources one quickly comes across the term environmental terrorism. Many sources suggest that these two terms are the same, however, environmental terrorism and the weaponization of natural resources are related but distinct concepts. It is important to be aware of the difference between these terms, since that is of great significance to understanding the issue and prevents further confusion.

Environmental terrorism refers to the use of environmental destruction or degradation as a means to achieve political or ideological goals. This can involve actions such as sabotage and vandalism, which are designed to harm the environment or disrupt the functioning systems that support the environment, such as infrastructure.

The weaponization of natural resources refers to the use of natural resources as a means to achieve political, military or economic goals. This can take various forms, such as the use of natural resources as a tool of manipulation, the exploitation of natural resources to fund military activities, or the control of natural resources to exert influence over other states or groups.

While environmental terrorism may involve the weaponization of natural resources as a means to achieve a goal, it is not necessarily limited to the use of natural resources and can also involve other forms of environmental destruction.

Similarly, the weaponization of natural resources may not necessarily involve environmental terrorism but could involve the exploitation or control of natural resources in a way that has negative environmental impacts.

The weaponization of water

Out of all the natural resources on this planet water is the one that's being weaponized the most. The main reason for this is water scarcity. Water is a basic necessity of life, but we sadly have limited amounts of this precious resource on our planet. And the number of regions with alarmingly low water supplies is increasing. This fact can be seen as strategically advantageous in conflicts and leads to states or non-state actors using water as a weapon to create military advantages and leverage in their conflicts. The weaponization of water will be further explained through examples from current and previous conflicts.

Water can be weaponized in various ways. The first one being dams and blockades. Some states have rivers that start in their country and flow downwards into other countries. This geological phenomenon creates problems in itself but can also be used in conflicts to hinder opponents. The country in which the river originates can build a dam to prevent water flow to lower-lying countries. An example is Turkey. They started building a total of 15 dams along the Tigris and Euphrates rivers to block water flow into Syria and Iraq, countries that are prone to drought and are already experiencing water scarcity. These dams have reduced water flows to Syria by 40% and water flows to Iraq by 80%. This is all part of Turkey's Anatolia Project, which also included the construction of hydroelectric power plants and irrigation systems. Through this project, Turkey is not only weaponizing water to aid them militarily but also to profit from the resource economically. (*Turkey's Dam-building Could Create New Middle East Conflict*, n.d.) (*Southeastern Anatolia Project*, n.d.) (*Water as a Weapon of War*, n.d.)

The second way to use water as a weapon in war is by bombing dams, water reservoirs and water wells. By bombing dams, one can flood an entire city or region, which has disastrous consequences for the civilian population. Bombing water reservoirs and water wells can effectively cut populations off from their water sources. This occurred during the conflict in Yemen in 2016. An important freshwater source was bombed and this caused a devastating cholera outbreak. (*The Weaponization of Water Amidst Yemen's Humanitarian Crisis*, n.d.)

Finally, a way to use water as a weapon that is not as broadly known as the previous two, is contaminating or poisoning the water. By doing this one can make a water source completely useless for a population or civilians are forced to drink unsafe water, which can lead to disease outbreaks. This form of water weaponization has been performed by the rebel group IS in December 2014. They contaminated a water source south of Tikrit, Iraq, with crude oil, making the water unsafe to drink. Furthermore, IS tried to poison the largest water reservoir in Pristina, Kosovo, but failed because they were caught right before they committed the act. Weaponizing natural resources lies at the core of IS' strategy to monopolize power, so be aware that these are just a few of many examples of times IS and other states or non-state actors have used water and other resources as a weapon. (*Water as a Weapon*, n.d.)

According to the Pacific Institute the first occurrence of water being used as a weapon was in 2500 BC in Mesopotamia. (*Water Conflict Chronology*, n.d.) (*The Use of Water as a Weapon Amidst Climate Change*, n.d.)

The weaponization of energy

Just like water, energy can also be used as a weapon. Especially in winter, when we all need energy and gas to keep us warm, weaponizing energy can have great economic benefits to the respective state or non-state actor. To further elaborate on this, Russia and Europe's energy crisis will be used as an example.

Russia supplies Europe with gas via two undersea pipelines, Nord Stream 1 and Nord Stream 2. Nord Stream 2 became operational a few months before the Russia-Ukraine war, making up 40-50% of Europe's gas supply. Since the start of the Ukraine-Russia war, Europe has repeatedly expressed their support for Ukraine and has imposed economic sanctions on Russia as a reply to its invasion of Ukraine. Russia responded to these actions in August of 2022 by cutting Europe off



Figure 1: Map of the Nord Stream 1 and 2

from their Nord Stream 1 gas supplies. Causing gas prices to surge and squeezing European economies. (*Russia Is Using Energy as a Weapon*, n.d.) A month later Nord Stream 1 and Nord Stream 2 were reportedly attacked, resulting in four gas leaks. Even though investigators believe Russia is behind the attack, Russia has denied all such claims. (*Nord Stream Attacks Highlight Vulnerability of Undersea Pipelines*, n.d.) (*Nord Stream 1 Possibly Irreparably Damaged*, n.d.) These are two examples of the weaponization of energy occurring in less than two months, supposedly by the same state. In this case, energy has not been used as a weapon of war but as a tool of economic coercion and political leverage. Furthermore, these pipelines, especially the addition of Nord Stream 2, makes Europe more dependent on Russia, which gives Russia even more political leverage. This also highlights that pipelines such as Nord Stream 1 and Nord Stream 2 create a lot of opportunities for the weaponization of gas due to their vulnerability and the dependence of states on these pipelines. (*Russia Using Energy as a Weapon; Could This Spread to the Rest of the World?*, n.d.) (*Energy, Trade, and Investment Law in the New Geopolitical Reality*, n.d.)

The previous paragraph elaborated on the use of energy as a weapon for economic and political interests. However, energy can also be used as a weapon of war. Take the war in Ukraine, Russia has bombed and destroyed hydro plants, substations, heat generation facilities and electricity and energy infrastructure surrounding Kyiv. Causing power cuts throughout the city and leaving 80% of homes in Kyiv without water. These forms of the weaponization of energy are solely designed to harm and strike a population with fear. (*Russia Targets Ukraine Energy and Water Infrastructure in Missile Attacks*, n.d.)

Using the weather as a weapon

“If there’s a weather god, we aren’t it, yet.” (*Can The CIA Weaponize the Weather*, n.d.)

Weather modification has received little media attention in the past decades and although the weather is technically not a natural resource, weather modification poses a serious threat to our security and therefore must be addressed in this report. The first-time humans successfully modified the weather was in November 1946. Scientists flew to an altitude of 14000 feet and released 3 pounds of dry ice into the clouds. The result, was the first-ever human made snowstorm. At the time, Cold War tensions were rising, and the USA considered using weather modification as a weapon in the war. (*Weather Control as a Cold War Weapon*, n.d.)

During the Vietnam war, however, the USA did use weather modification as a weapon, under Operation Popeye. It was a highly classified weather modification program in South-East Asia in 1967-1972. The US used 2600 aircraft to seed clouds with silver iodide and lead iodide over North Vietnam, South Vietnam, Laos and Cambodia. The operation aimed to extend the monsoon period to prevent North Vietnamese troop movements. The US carried out the project successfully and extended the monsoon period by an average of 30-45 days. (*Operation Popeye*, n.d.)

When Operation Popeye was declassified in 1974, the UN passed the Environmental Modification (ENMOD) Treaty in 1977. (*Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD)*, n.d.) The treaty prohibits offensive weather modification from occurring over a large area. Despite the ENMOD treaty, weather modification technologies are developing and more states, intelligence agencies and non-state actors are becoming interested in these technologies and techniques. (*Spy Agencies Fund Climate Research in Hunt for Weather Weapon, Scientist Fears*, n.d.)

An example that perfectly demonstrates the dangers of the weaponization of the weather is HAARP. High-frequency Active Auroral Research Program (HAARP) is located in Alaska and has supposedly been shut down in 2014. This program, however, highlights the danger of weather modification techniques. HAARP operates from the outer atmosphere and can destabilize agricultural and ecological systems around the world, which makes it a Weapon of Mass Destruction (WMD) Official HAARP documents show that the program was fully operational in the 1990s, with unknown consequences. (*“Weaponizing the Weather” as an Instrument of Modern Warfare?*, n.d.)

The US military openly declared that their weather warfare technology is fully operational, but that there is no documented evidence of its military use against enemies of the US.

Climate change

It must not be forgotten that climate change is one of the main factors causing today's conflicts and the underlying cause of the weaponization of natural resources. One of the foremost consequences of climate change is water insecurity. Water is a precious but irreplaceable resource and scarcity thereof can cause serious economic and ecological damage. These effects are especially pronounced in drought-stressed regions and these regions are therefore the most vulnerable to the weaponization of water. Climate change can increase the weaponization of natural resources in three ways.

Firstly, since water insecurity is increasing and there exists no substitute for it, it is far more strategically advantageous for states or non-state actors to bomb a dam instead of an oil well. Because that will harm a population or environment the most. Thus, climate change will significantly increase water weaponization, especially in drought-prone areas.

Secondly, climate change can also indirectly increase the weaponization of energy. Namely, water is necessary for hydropower facilities and critical for continued energy security. If water becomes scarcer, less of the remaining resource will be used to maintain these hydropower plants. This may create energy scarcity as well as the possibility of energy weaponization. (*Climate Change Makes the Weaponization of Resources More Effective Than Ever Before*, n.d.)

Finally, there is also a relation between climate change and the weaponization of the weather, however, how these two influence each other is yet to be investigated. Some researchers are exploring the possibility of modifying the weather to remove carbon dioxide from the atmosphere and thus solve climate change, but the additional consequences that might have on the environment and our ecological systems are still unclear.

Consequences

Weaponizing natural resources bring about many consequences, some very obvious, others not so much. As has been stated in previous paragraphs, weaponizing water and energy can seriously harm a population, psychologically or physically, and the environment in which they live. That can have additional consequences, such as food scarcity. Since water is vital for food security in the form of irrigation systems, one can imagine that if there is no water available, these irrigation systems will not be able to operate properly, and food scarcity will arise. This creates another problem, migration.

A study performed by a group of scientists from numerous universities in Germany, Brazil and Canada talks about the relationship between the weaponization of natural resources, climate change and migration. They interviewed 100 asylum seekers in Germany from 17 different countries and asked them their reason for migrating. 56 interviewees reported violence, armed conflict and non-state conflict as their main reason for migrating. 49 of those interviewees also reported resource scarcity in their place of origin. This shows that, even though migration always has multiple

motivations, resource scarcity resulting in armed conflict or as a result of the weaponization of resources can be a principal motive for people to leave their hometown or country. (*Understanding Environmental Terrorism in Times of Climate Change: Implications for Asylum Seekers in Germany*, n.d.)

Timeline of Key Events

Date	Event
13 th November 1946	The first ever man-made snowstorm is created in the US
20 th March 1967	Start of Operation Popeye
5 th of July 1972	End of Operation Popeye
1974	Declassification of Operation Popeye
5 th of October 1978	ENMOD Treaty went into force
8 th of September 2005	Russia and Germany agree to the build of Nord Stream 1
December 2014	IS contaminating a water source in Iraq with crude oil
10 th of September 2021	Build of Nord Stream 2 is completed
1 st of September 2022	Russia shuts off Nord Stream 1
26 th of September 2022	Both Nord Stream pipelines have been reportedly attacked

Major Parties Involved

Russian Federation

Russia plays a major part in the weaponization of energy. They are Europe's biggest gas supplier through the Nord Stream 1 and Nord Stream 2 pipelines and therefore hold great power over this resource. This allows Russia to easily weaponize their energy to create political leverage, economic gain or harm receiving countries economically. Russia's Key role in the war in Ukraine, including their role in weaponizing natural resources in the area, must not be forgotten.

United States of America

The US has mainly been mentioned in the paragraph on the weaponization of the weather, since they're somewhat of a pioneer in that field, with Operation Popeye and the HAARP facility in Alaska. That does not mean they play no part in the weaponization of other natural resources. Just

like Operation Popeye, the US had another operation, Project Seal, which was designed to create huge tidal waves on the coast of Japan through underwater explosions. The operation was shut down in 1945, however. (*Danger on the Shore*, n.d.)

Islamic State (IS)

The terrorist organization Islamic State (IS) has the weaponization of natural resources, especially water, as a core strategy. Which makes them an important non-state actor in this issue. Besides the fact that their actions lead to water scarcity or the spread of diseases, it also has a psychological effect by striking fear into a population.

Germany

In terms of energy, Germany has a very advantageous position. All the gas Europe receives from Russia enters Germany first, and from there it is distributed to the rest of Europe. This gives Germany significant power over the resource. Even though there are regulations on the distribution of gas in the EU, Germany has the theoretical power to weaponize the energy they receive from Russia.

European Union (EU)

Because the European Union is heavily dependent on Russia for energy, it makes them rather vulnerable to the weaponization of energy. Which can lead to serious economic crises. They need to be able to build resilience against instances such as the current energy crisis and to be able to provide more of their own energy.

Possible Solutions

This research report has discussed the different occurrences of the weaponization of natural resources and has provided examples of such occurrences to elaborate on the dangers of natural resources being used as weapon. It speaks for itself that the UN General Assembly should do everything in their power to prevent this from ever happening again. On an international scale, this could be done through negotiations and treaties such as the Environmental Modification (ENMOD) treaty. On a smaller scale, this could be done by resolving conflicts, especially resource-based conflicts. On an even smaller scale, countries with vulnerable positions regarding the weaponization

of natural resources should be made aware of this and the consequences it can bring. This gives them a chance to prepare themselves, increase security, or start looking for alternative suppliers if necessary.

However, preventing this is just one side of the coin. For countries who have already fallen victim to the weaponization of natural resources, the beforementioned solutions won't affect or help them. It is also important to develop strategies to build resilience in case something like this happens and educate civilians on how to survive or deal with such a situation.

The General Assembly should ensure that humanitarian aid is available and can be quickly brought to the country or region in need. This humanitarian aid does not only include food and water, but also materials and equipment to rebuild houses and other damaged buildings or infrastructure.

Moreover, financial aid should be made available, if necessary, to cover the economic damage weaponization of natural resources can inflict.

Lastly, more research needs to be conducted on this issue, with specific attention to the relationship between climate change and weaponizing natural resources, as well as the effects weather modification techniques might have on the environment and in what way these techniques could influence the weaponization of the weather.

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