

RESEARCH BRIEF

NAVIGATING THE NEXUS: CLIMATE INSECURITY, ENVIRONMENTAL RIGHTS VIOLATIONS AND CONFLICT IN FRAGILE SETTINGS

EXECUTIVE SUMMARY

Climate security refers to the impacts of slow and sudden environmental events on peace and security, particularly in fragile and conflict-affected states. In practical terms, climate security sets out how the negative impacts of climate change can exacerbate food, water and livelihood insecurity, causing spillovers such as increased competition over natural resources, loss of livelihoods and displacement. These events can directly integrate conflict (e.g. violent clashes over shared water resources), serve as conflict enablers (e.g. by fuelling community-level antagonism against the state) or act as conflict multipliers (e.g. when non-state armed groups target drought-affected areas in recruitment).

To further unpack these dynamics, this paper explores the varied ways that climate change, violations of environmental human rights and conflict coalesce.

Part 1 evaluates the potential for countries to enter into armed conflict to gain control over increasingly scarce or lucrative natural resources. It explains that, in practice, resource acquisition is more likely to be a tactic of war or a co-concern, as opposed to a principal driver or objective of a conflict. This said, countries have entered into war over environmental assets – Iraq's invasion of Kuwait being the prime example – and iterations of this may become more frequent in the future. To this end, it will be important to monitor changes in the relative importance of particular resources. Fossil fuels, for example, are likely to become less sought after, while rare metals needed in the production of renewable energy or other technological processes may become objects of competition.

Part 2 discusses the threats posed by armed conflict to the environment and particularly the targeting of environmental assets during war. This is an important area of inquiry, both because increased scarcity can incentivize targeting as a military tactic, and because such environmental loss and damage increase the risk of conflict in the future. However, as the case studies set out, the environment should not be viewed exclusively in these narrow terms. It can also be the prize parties are fighting over, a tool of war and/or a resource that is co-opted and used strategically by one or both belligerents in pursuit of their goals.

Part 3 explains that the highest volume of conflicts over environmental resources takes place at the sub-state level, either at the community level or between communities and the state. Food, water and fuel insecurity, as well as price hikes for these goods, can all trigger conflict, with worse resource shortages associated with higher intensity violence. Inter- and intra-community disputes generally involve competition over resources in contexts of reduced availability, such as disaster or slow onset events like drought. In all cases, vulnerable groups – such as the poor, religious/ethnic minorities and migrants – are disproportionately impacted. The more serious category of resource-based conflicts takes place between communities and national authorities. These conflicts tend to be driven by unequal distribution of, or access to, scarce environmental resources. They are more likely to involve large-scale violence and associated violations such as arbitrary detention and disproportionate use of force. Moreover, because they are rooted in malgovernance, such conflicts can evolve into political violence and instability.

Part 4 discusses an evolving trend of non-state armed groups and terrorist organizations exploiting environmental assets to implement or expand their operations. The most noteworthy example is the terror group ISIL's seizing control of oil refineries in Iraq and Syria, and using revenues to pay salaries, purchase weapons and grow new networks. In the context of resource deprivation, non-state armed groups employ more extractive tactics. Across the Sahel, but also in central and south-east Asia, armed groups have been documented targeting areas impacted by environmental degradation and climatic events to recruit and build political support. A particularly worrying trend is armed groups forging 'protect or plunder' alliances with communities, often kick-starting cycles of retaliatory violence and inter-tribe discord.

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Part 5 sheds light on an emerging form of environmental exploitation, whereby state authorities enter into agreements enabling the extraction of scarce natural resources by foreign companies. While such agreements are broadly driven by increased global demand for food and energy, they are negotiated against a complex backdrop of malign and altruistic motivations, including to rent-seek, exploit, forge development pathways and access to new technology. The consequences felt by affected communities, however, are almost exclusively negative and often violent. They include permanent damage to environmental assets and ecosystems, forced dispossession of land, forced eviction and loss of livelihoods, land grabbing, inheritance denials and worsened food security – all of which can trigger conflict.

Part 6 explores how environmental loss and degradation – and strategies to avoid, mitigate or adapt to these phenomena – can deepen gender inequality, extend women's vulnerability to violence and heighten their exposure to conflict. Indeed, structural inequality and discrimination mean that women and girls are disproportionately exposed to the impacts of environmental loss and degradation. These impacts manifest in conflict both directly (for example when women are targeted in acts of violence) and indirectly (by compounding inequality and skewing resource holdings). Women's disproportionate exposure to climate change externalities also works to reinforce, protract and further complicate the cycle of disempowerment, principally by skewing the gendered nature of land ownership and control.

There are two main takeaways. First, the relationships connecting climate insecurity, environmental rights violations and conflict are messy, dynamic and need to be understood through a 'systems' lens. In some cases, there will be a direct relationship between the climate emergency, an environmental spillover and the resultant conflict. Most often, however, other drivers will be in play, thus obscuring causality. For example, the targeting of environmental assets during war may become more prevalent as these assets become scarcer; however, the principal aim of the belligerent party will still be to render damage and weaken the military capacity of its adversary. Likewise, governments entering into large-scale leases with foreign entities is broadly linked to worsening global food and energy security, but these deals take place against backdrops of malgovernance and corruption. The reverse can also be true, with the climate dimension acting as an enabler or driver of a broader conflict phenomenon. For example, popular unrest against a government may be 'tipped' by a conflict over resources, or a non-state armed group may opportunistically exploit drought-impacted communities to expand its operations. The point is that conflicts connected to climate or environmental insecurity are rarely standalone phenomena, but instead deeply interwoven with issues around development and governance. All dimensions need to be addressed for a complete solution, and to prevent them from becoming mutually reinforcing.

The second takeaway is that climate security needs to be understood as a localized problem of global concern. Indeed, in recent years, there has been increased debate around climate insecurity being a threat to international peace and security. This has sparked a level of discord between Member States, with many pushing back on what they see as a securitization of environmental policy (and environmental human rights). The finding of this research is that while the climate emergency may manifest in conflict spillovers with international dimensions, such as mass migration or cross-border resource encroachments, this is not imminent. Currently, the vast majority of conflict stemming from climate externalities and environmental rights violations is taking place at the sub-state level. This should not suggest that a reduced level of concern is warranted. Quite the contrary, climate-induced sudden and slow onset emergencies, loss of livelihoods, hunger and malnutrition, etc. all operate to weaken resilience, heightening states' vulnerability to intra and interstate conflict. The effective prevention of climate-driven conflict should thus be seen as rooted in the protection of environmental human rights at the national level.

I. ENVIRONMENTAL RESOURCES AS A PRIZE: OIL WARS, WATER WARS AND BEYOND

The showcase example of an ‘oil war’ dates back to August 1990, when Iraq invaded Kuwait in a messy attempt to expand its oil resources, eliminate debt and (albeit to a lesser extent) settle historical contestations over borders. These actions culminated in a short-lived war that ended with Iraq facing international condemnation and a strict sanctions regime that would remain in place until 2003. However noteworthy, this run of events is largely an exception within the environmental security discourse. As explained by Meierding, while there are several conflicts perceived to have been motivated by oil acquisition (World War II, the Iran–Iraq War, and the Bolivia-Paraguay Chaco War), these wars were in fact principally waged for other reasons, including geopolitical rivalries, territorial contestation and competition for other (non-environmental) assets.¹

Much the same can be said regarding predictions of ‘water wars’, first posited by Starr and Stoll in the 1980s.² Indeed, a 1998 study by Wolf tested for interstate violence where water was a driver of the conflict, and found only seven “minor skirmishes” in the twentieth century. Conversely, he identified 145 water-related treaties forged during the same timeframe, suggesting a trend of water cooperation rather than discord.³ This finding is supported by Selby, whose 2005 research concluded that water security has not been of geopolitical interest to states or ruling classes.⁴ This is not to say that water serves no role in conflict; as discussed in subsequent sections, water has been a target during conflict, a weapon, as well as a driver of inter-community unrest.

Even if wars over oil and water are not an extant threat, it is important to reflect upon how the changing importance of different environmental resources in the global economy may influence conflicts in the future. Certainly, as renewables replace fossil fuels, the scope for conflicts around the latter will logically continue to abate. Conflict potential in other areas, however, may heighten. Some scholars have speculated that Russia’s invasion of Ukraine (both in 2014 and 2022) was at least in part motivated by Ukraine’s stores of precious minerals, which are critical in the production of several emerging technologies.⁵ The country has large deposits of 117 of the 120 most-used industrial minerals, including titanium

(used in aircraft and missile production), neon (used in microchip production), and nickel and lithium (used in electric vehicle battery production). Most of these deposits are unexploited and their total value has been estimated at between USD 3 and 11 trillion.⁶

Along with evolutions in the object of conflict, the nature of conflict may also shift. Energy production and desalination technologies are quickly becoming more valuable commodities than oil and water assets, competition over which is likely to manifest in cyber operations or intellectual property theft, as opposed to armed combat. Downey, for example, cites evidence that concerns over reverse engineering and the non-enforcement of patent rights are significant barriers to the transfer of clean energy technology to China.⁷ Solar energy theft is also a growing concern, with this taking place at the grid level as well as the manipulation of smart meters.

CASE STUDY A: THE GULF WAR 1990–1991

Since the 1973 oil price increase, the Gulf has become a focal point of global interest, owing to its unparalleled oil reserves. Oil has become a linchpin for the region’s development, influencing economic, political and social trajectories. The interplay between oil and development, however, is also marked by volatility, manifesting in recurrent tensions and conflicts within the region. While a variety of factors contributed to this particular conflict, the Gulf War (1990–1991) serves as a prime example of the complex interplay between environmental resources, development and conflict, as the war was fundamentally an ‘oil war’.⁸

The Gulf War had its roots in the aftermath of the Iran-Iraq war (1980–1988), a prolonged and costly conflict that left Iraq deeply in debt and facing a complex task of rebuilding its economy and infrastructure. The situation worsened with a sharp drop in oil prices, which Iraq believed was a result of Kuwait and the UAE exceeding oil production quotas set by the Organization of Petroleum Exporting Countries (OPEC). This was a critical moment for Iraq, which urgently needed stable oil prices to recover from the financial burdens of the conflict. Kuwait, however, saw its actions as justified, as they still sought compensation for damages suffered. The overproduction of oil led to a drastic decline in prices, reaching as low as USD 10 per barrel (USD63/m³). The financial impact on Iraq was severe,

with an annual loss of USD 7 billion, equivalent to its 1989 balance of payments deficit. These reduced revenues were insufficient for even basic government expenses, let alone repairing the country's deteriorating infrastructure. The combination of Iraq's substantial war-induced debt, the reluctance of neighbouring nations to help alleviate this burden and the consequences of Kuwait and the UAE overproducing oil created a perfect storm that precipitated Iraq's economic downturn and set the stage for the Gulf War. As Iraq sought support within OPEC to enforce production reductions and stabilise oil prices, Kuwait's insistence on a significant increase in its production further aggravated tensions with its neighbour.⁹

Overproduction of oil, however, was just one of many incidents in a mounting series of disputes between the two countries. In 1990, Iraqi Foreign Minister Tariq Aziz leveled accusations that Kuwait had employed sophisticated drilling techniques to exploit oil reserves situated on Iraq's side of the Rumaila fields. Around the same time, Kuwait refused Iraq's request to have its USD 14 billion debt accrued during the war forgiven. In response, Saddam Hussein brandished the longstanding dispute over the Warbeh and Bubiyan Islands, claiming them as integral parts of Iraq's territory before the United Kingdom's protectorate over Kuwait from 1899 to 1961.¹⁰ Despite OPEC's intervention, brokered to ease the strain by convincing Kuwait and the UAE to reduce oil production from 2 million to 1.5 million barrels per day, the geopolitical cauldron continued to simmer. A tipping point was reached on 2 August 1990, when Iraq launched an invasion of Kuwait, swiftly followed by the annexation of its territory on 28 August. The international community, through the UN Security Council, demanded Iraq's immediate withdrawal and instituted sanctions,¹¹ ultimately passing Resolution 678, which authorised the use of force.¹² Member States allied with Kuwait initiated a bombing campaign on 16 January 1991, with the war concluding in a victory for Kuwait on 28 February 1991.

CASE STUDY B: THE NILE DISPUTE

The ongoing tensions between Egypt and Ethiopia over the Grand Ethiopian Renaissance Dam (GERD) stand as a stark reminder that water can easily transform into a catalyst of geopolitical tensions. In 2011, Ethiopia unilaterally started the construction of the GERD, a non-consumptive hydropower project, on the Nile River.¹³ This decision

created friction with downstream nations such as Egypt and Sudan, who perceived the project as a threat to their water security and even the very existence of its people.¹⁴ Egypt's concerns are not without merit. The Nile River is the primary source of Egypt's fresh water, contributing 90 percent to its supply, with the Blue Nile (on which the GERD is built) providing 57 percent. Once completed, the GERD's reservoir will contain approximately 74 billion cubic metres of water, nearly matching the annual volume of the Nile flowing into Egypt's Aswan High Dam. Importantly, Egypt already grapples with severe water insecurity. Even without considering the GERD, its water resources stand at 60 billion cubic metres, while consumption reaches 80 billion cubic metres. In the absence of a diplomatic agreement on the GERD, Egypt faces a risk of droughts, the loss of an estimated one million jobs and a USD 1.8 billion decline in economic production annually. The completion of the GERD would considerably diminish Egypt's water share, reducing it by approximately 10 to 15 billion cubic metres.¹⁵

While the GERD arguably poses an existential threat to Egypt, for Ethiopia it is a matter of existential necessity. Central to the ongoing dispute is Ethiopia's struggle with electricity scarcity, with 65 percent of the population lacking access to the power grid, contributing to widespread underdevelopment.¹⁶ As such, the GERD constitutes a prime opportunity for Ethiopia to advance its development agenda. In the early stages, the project aims to bolster electricity capacity in order to meet domestic energy demands and expand economic activities in the fishery, recreation and tourism sectors. Long-term, Ethiopia envisions an accelerated structural transformation of its economy, as it aspires to become Africa's leading power exporter.¹⁷

With Ethiopia and Egypt's interests being diametrically opposed, it is unsurprising that the issue has yet to find a sustainable solution after more than a decade of diplomatic quarrels. An additional complexity lies in the fact that the legal instruments governing the Nile, known as the Nile Waters Treaties, are colonial-era bilateral treaties that heavily strengthened the position of Egypt and Sudan, without granting upstream countries such as Ethiopia water allocations at all. The Cooperative Framework Agreement (CFA), an attempt by the Nile Basin states to create a legal instrument that is acceptable to all parties and replace the Nile Water Treaties, was rejected by Egypt

and Sudan.¹⁸ Finally, the conflict is marked by identity contestations. From Ethiopia's perspective, the dam is an African initiative, given the river's shared resources among 11 African nations, and the GERD contributing to the continent's ecological transition. Conversely, Egypt sees the project as a threat to Arab water security. The ongoing contest to "Africanize" and "Arabize" the Nile captures the essence of a clash between distinct constructions of the Nile's significance.¹⁹ To illustrate, in a recent statement, Egypt's Ministry of Water Resources and Irrigation said that talks for an agreement over the GERD had failed due to "Ethiopia's persistent refusal ... to accept any of the technical or legal compromise solutions that would safeguard the interests of all three countries."²⁰ Ethiopia in the meantime has completed the fourth and final filling of the GERD,²¹ and blames Egypt for stubbornly holding true to a "colonial era mentality", preventing any efforts towards convergence on the matter.²²

II. THE TARGETING OF ENVIRONMENTAL ASSETS IN WAR

Wars invariably create environmental externalities, including destroyed habitats, pollution expended by armaments and the leaching of toxic remnants into the soil, air or water supplies. Damage may also be deliberately or tactically inflicted. As noted by the Strategic Foresight Group, especially in contexts of increasing resource scarcity, sabotaging (for example, water) resources may become a more common warfare tactic.²³ Examples include attacks on Turkey's dams in the Euphrates by the Kurdistan Workers' Party (PKK) and the Islamic State of Iraq and the Levant's (ISIL) targeting and/or overtaking of water sources in Iraq.

Water is now the major strategic objective of all groups in Iraq. It's life or death. If you control water in Iraq you have a grip on Baghdad, and you can cause major problems.²⁴

The environmental harm rendered on such assets is often multifaceted. As showcased in the Ukraine conflict, the targeting of oil and gas plants not only depletes the country's resource base and export potential, but creates secondary damage in the form of pollution and contamination. Damage inflicted can also extend beyond an asset's environmental value; the forests destroyed in

Myanmar's Karen-controlled areas, for example, hold vast cultural significance for the population (see case study I).

Irrespective of whether damage is incidental or deliberate, pollution, fire and contamination can transgress borders, widening the ambit of harm and increasing the risk of neighbours being drawn into a conflict. While less discussed, another transboundary dimension is where a war's environmental impacts are exported, for example via the global food distribution system, as illustrated in the Ukraine case study.

Importantly, these impacts last long after a conflict subsides. While infrastructure can be rebuilt relatively quickly, the presence of pollutants, agricultural plots lying fallow for protracted periods and structural damage to ecosystems, often compromise the environmental balance for decades. These complications can carry over to delay post-conflict recovery, including in the areas of livelihoods, flows of goods and services, and health. The relationship between conflict and environmental insecurity must therefore be understood not only in a short term and existential sense, but also as a risk factor in conflict recidivism.

Some, although not all, environmental externalities are accounted for under the rules of war. The protections set out in International Humanitarian Law (IHL) – principally articles 35 and 55 of Additional Protocol I of the Geneva Conventions – make clear that parties to a conflict are obligated to protect the environment, and in so far as it is of civilian character, cannot make it a deliberate target.²⁵ Where deliberate targeting is permitted, for example if parties to a conflict were using a forest to hide or store weaponry, the principle of proportionality applies, i.e. damage to the civilian object (the natural environment) cannot be excessive vis-à-vis the military advantage gained. Moreover, all feasible precautions must be taken to avoid and mitigate attendant damage.²⁶

The invocation of IHL does not, however, always provide a complete and adequate solution. Principally, in the throes of war, belligerents may de-prioritize environmental safeguarding vis-à-vis opportunities for military advancement. A compounding issue is that international law and jurisprudence is not sufficiently developed to reliably adjudicate cases of deliberately-caused severe environmental damage. The challenge lies in the varied

and interwoven causes and consequences of environmental damage, which make causality difficult to establish. Thus, while attacks that cause widespread, long-term and severe environmental damage can technically be tried as war crimes, the threshold for culpability is extremely high. Likewise, where environmental harm is collateral or non-deliberate, scantily deliberated questions around proportionality can obstruct trials. Such complications around justiciability inevitably perpetuate abuses. For environmental damage that transcends international boundaries, IHL provides no clear guidance or avenue for recourse.

In situations where one party to the conflict is a non-state armed group (NSAG), protecting the environment is even more challenging. A first issue is practical; where they are small and less organized, NSAGs may be less aware of their IHL obligations, or lack the capacity or resources to engage in IHL complaint actions, such as proportionality assessments. There may also be more fundamental issues of ideology in play. As the case study on the crimes perpetrated by ISIL sets out, existing outside the mainstream community of states, an NSAG may not feel beholden to or recognize the authority of norms set by the international community.

CASE STUDY C: ENVIRONMENTAL ASSET TARGETING IN UKRAINE

Russia's war of aggression against Ukraine has rendered significant damage to its air, water, land and ecological resources. Between June 2022 and July 2023, Ukraine's Ministry of the Environment and Natural Resources verified 2,317 military actions with environmental impacts and quantified this damage at €52.4 billion.²⁷ Most of this harm has been the result of direct military combat. Bombing campaigns and military ground operations, for example, have destroyed an estimated 2.4 million hectares of forest.²⁸ Environmental damage can also be seen in urban areas; missiles and small arms release pollutants, including nitrous oxide and carbon dioxide. Secondary pollution can also accrue, for example, when collapsed buildings and infrastructure expose asbestos (a commonly used roofing material in Ukraine).

While more difficult to quantify, it is important not to overlook the indirect environmental impacts and systems-driven externalities of Russia's military operations. The targeting of oil refineries and gas processing plants, for

example, has caused direct environmental asset loss, as well as attendant damage through fires and the leaching of contaminants into the soil and water supplies. Examples include the demolition of the Kremenchuk refinery in April 2022 and the Shebelinka gas processing plant in February 2022.²⁹ Targeting chemical industrial and nuclear processing plants is a particular vulnerability due to the high risks associated with radiation and contamination. Indeed, as of 2021, Ukraine had 609 industrial facilities storing more than 219,000 tonnes of toxic chemicals, including 3,200 tonnes of chlorine and 177,800 tonnes of ammonia. This risk potential was highlighted in February 2022, when Russian forces assumed control of the Chernobyl nuclear power plant and other radiation-hazardous facilities in the Chernobyl Exclusion Zone. Ukraine's State Environmental Inspectorate subsequently recorded seven incidents of toxic industrial chemical release, which caused a widening of the radiation perimeter.³⁰

The bombing of critical civilian infrastructure, such as water and waste management systems, has been a further source of environmental hazard.³¹ For example, on 6 June 2022, Russia bombed the Kakhovka Dam. The resulting flood submerged thousands of hectares of land, compromising drinking and irrigation water assets and releasing an estimated 150 tonnes of toxic industrial lubricant, agrochemical and pesticide stores, including into the Dnipro River, which connects to the Black Sea.³²

Finally, it is important to note how the interplay of demographic-infrastructure systems can result in environmental harm. For example, large-scale population displacement to the western parts of Ukraine has substantially increased pressure on waste management systems. This has been compounded by fuel shortages, which have slowed (and, during some periods, prevented) the transportation and treatment of municipal solid waste. Local authorities have resorted to illegally dumping waste in nearby ravines or forests, with potential impacts on water quality, soil fertility and livestock health.

Another systems example is how reductions in agricultural output (caused by plot damage, the targeting of agricultural plants and generalized insecurity) have been exported – via the global food distribution system – to exacerbate food insecurity in some countries. Indeed, prior to the conflict, Ukraine ranked among the world's top exporters

of wheat, maize, rapeseed, sunflower seeds and sunflower oil. Countries that were heavily reliant on such exports have seen both a drop in supply and an increase in price. According to the UN Food and Agriculture Organization, the conflict caused an 8–22 percent increase in global food prices in 2022, and it projects an additional 30 million chronically malnourished people by the end of 2023.³³

CASE STUDY D: THE ENVIRONMENTAL CRIMES OF ISIL

The Islamic State of Iraq and the Levant (ISIL) is a Salafist non-state armed group founded by Abu Musab al-Zarqawi in 1999 under the name of Jama'at al-Tawhid wal-Jihad. An Islamic Caliphate was declared in October 2006, and by late 2015, the group controlled between 8–12 million people across large swathes of Western Iraq and Eastern Syria. Until its military defeat in 2017, the group's brutality attracted global attention – particularly its use of child soldiers, sexual exploitation of women and attacks on religious minorities.³⁴ Less discussed, although equally injurious, was the group's deliberate efforts to damage the environmental assets of the areas it occupied.³⁵ Four distinct pathways were pursued.³⁶

First, ISIL targeted Shi'a groups (and Sunni villages that resisted occupation) by destroying their environmental resources. In Tal Afar, a Shi'a area of Iraq, the group burned and poisoned olive groves (a principal source of local livelihoods), destroyed agricultural buildings and farming infrastructure, and laid improvised explosive devices in plots to prevent harvests.³⁷ In Sinjar province in northern Iraq (a predominantly Yazidi area), acts included the bombing of wells, razing of orchards and polluting water sources with diesel fuel.³⁸

Second, in the later stages of the conflict (2016–2017), ISIL engaged in 'scorched earth' campaigns and tactical flooding to hold back opposition forces and paramilitary such as the Kurdish Peshmerga.³⁹ On 22–23 October 2016, for example, the group burned down the Mishraq sulfur plant on the outskirts of Mosul to delay advancing Iraqi security forces.⁴⁰

A third approach was employed during ISIL's retreat and can best be labeled a retribution strategy.⁴¹ Scholars Jaafar, Sujud and Woertz used satellite imagery to positively correlate increased farmland fires in locations that coincided with the group's military withdrawal, particularly during 2017.⁴² This included burning between

1.4 to 2 million barrels of oil in al Qayyarah, causing widespread air pollution and contaminating parts of the Tigris River.⁴³

Finally, in the aftermath of its military defeat, ISIL engaged in clandestine spoiler attacks, including on farms and wheat and barley fields during the 2019 harvest season.⁴⁴ The likely intention was to worsen Iraq's struggling economy and/or ignite protests against the government.⁴⁵

III. CONFLICTS OVER RESOURCES

While environmental assets may not be a driver of interstate conflict, the story is vastly different at the sub-state level where clashes over (not for) resources are both frequent and multifaceted. Research by Wirkus and Bogardi, for example, found that localized water conflicts are rife, underreported and likely to become more prominent in the future.⁴⁶ There is also research linking specific environmental events such as drought to civil conflict and potentially to regional conflict trends. In Somalia, for example, Maystadt and Eklern were able to demonstrate that a single standard deviation increase in drought intensity and length increased the likelihood of conflict by 62 percent.⁴⁷

The most evidenced correlation is between conflict and food insecurity.⁴⁸ Brinkman and Hendix conclude that: "food insecurity – especially when caused by a rise in food prices – is a threat and impact multiplier for violent conflict".⁴⁹ Specifically, it increases the likelihood of democratic collapse, civil strife, protest and rioting, as well as communal conflict (however there is less evidence of a link to interstate war).

States that are net food importers are particularly susceptible. This is because small changes in commodity prices can have a disproportionate impact on the cost of staple foodstuffs. This price volatility has a twin effect: it disproportionately impacts the poor who have weak access to safety nets, and it creates new populations of poor. The 2007–2008 global food price hike, for example, drove an estimated 44 million new people into poverty, and was the trigger for bread riots across Africa and the Middle East.⁵⁰

It is important to note that food price hikes are not only driven by droughts and floods, but sometimes more

complex environmental phenomena. The 2010 Russian grain price hike, for example, has been principally attributed to a severe heatwave that saw temperatures of 44 degrees Celsius and destroyed 9 million hectares of crops.⁵¹ In an attempt to protect local consumers and producers, Russia stopped exporting wheat, causing a secondary price spike which reached a high of USD350/tonne in February 2011.⁵² This situation, however, was also exacerbated by a growing demand for biofuels, which had elevated corn and soybean prices. In the future, as biofuels increase in importance relative to fossil fuels, the food security consequences and potential for conflict should not be overlooked.

Further unpacking these trends, it is possible to distinguish between two types of sub-state resource-driven conflict: conflicts between and within communities and conflicts between communities and governments.

INTER- AND INTRA-COMMUNITY CONFLICTS

Inter- and intra-community disputes generally involve competition over resources in contexts of reduced availability. Such disputes tend to increase in times of acute disaster, as well as against slow onset events such as drought and overpopulation. In all cases, vulnerable groups – the poor, religious/ethnic minorities, migrants and lower-status clans – are disproportionately impacted.

The situation of pastoralists in Kenya and Somalia illustrates this well. In both countries, arid and semi-arid rangelands have been subjected to decades-long drought punctuated by destructive and unpredictable rainfall.⁵³ Reduced access to fertile grazing pasture has fuelled divisions between clans, reducing the efficacy of customary mechanisms that previously worked to redistribute assets in times of hardship.⁵⁴ In Kenya, for example, cattle rustling has been transformed from a rules-based tool to protect clan livelihood and demonstrate masculinity, into an organized, largescale and violent act of theft and sabotage. Competition over resources has also exacerbated and/or reignited dormant conflicts, particularly historical disputes over borders or the customary use of resources such as water deposits, grazing areas and forests. A case in point is the violent conflict over grazing rights between the Sa'ad and Suleiman sub-clans of the Habar Gidir clan in Somalia, which has been ongoing since the 1990s.⁵⁵

When they are left with limited livelihood options, some pastoralists have ventured into new forms of income generation, including illicit activities and those that fuel wider conflict dynamics. In Somalia, a common alternative to pastoralism is charcoal production, which – in addition to its negative environmental externalities – is a driver of conflict, including with camel herders, who rely on acacia trees as a grazing resource,⁵⁶ and with rural communities, whose own livelihoods are threatened by deforestation and soil erosion.⁵⁷ Charcoal also provides steady revenues for armed groups such as al Shabaab. The group has been estimated to earn “USD 38-56 million annually from charcoal exports and USD 8–18 million annually from taxing charcoal traders at roadblocks and checkpoints”.⁵⁸

Finally, it is important to note that these conflicts are not only rural phenomena. In the West Bank – which has long been a site of localized conflicts over water – water siphoning compromises the access of users at the end of the pipeline, spilling over into disputes between community ‘haves and have nots’. Illegally tapped water also feeds into the shadow economy, bolstering the volume of unregulated economic activity.

*... [I]t should be no surprise that, while there have been no ‘water wars’ between Israel and the Palestinian Authority, there are regular, small-scale and violent skirmishes between and within Palestinian towns and villages.*⁵⁹

COMMUNITY-STATE CONFLICTS

The other category of resource-based conflicts takes place between communities/groups of communities and national authorities. Unlike inter-community conflicts, these are not generally driven by resource scarcity ipso facto; so long as governments are perceived as acting comprehensively and fairly against difficulties faced, discontent tends to be contained and infrequently spills over into violence. Instead, what drives these conflicts is unequal distribution of, or access to, environmental resources. Drawing parallels with theories on relative deprivation, scholars such as Gurr, Kandeh and Munkler⁶⁰ posit that resource inequality provides an explanation for many of the larger conflicts around water, food or access to electricity over the past half century.

It's not [resource] poverty itself that leads to war. It's economic injustice and imbalance. You have very low incidence of violence

*in poor countries where people at least think they're being treated fairly.*⁶¹

This is supported by Ribot and Peluso's research on the theory of access, which emphasizes that it is not rights to resources, but the extent to which people can access them, that should be the focus of conflict studies.⁶² Certainly, as set out in the case study below, it was the diversion of water rights away from poor communities in Egypt to wealthier groups that resulted in protests, increasing in intensity in the lead up to the Arab Spring. Conflict over energy insecurity likewise tends to be more commonly associated not with energy-poor countries, but with distributional problems.⁶³ Yemen is a salient example; despite being rich in oil and gas fuel, energy access is highly uneven with price hikes often leading to violent unrest.⁶⁴

CASE STUDY E: RESOURCE DYNAMICS IN THE ARAB SPRING

The Arab Spring, a series of uprisings and protests that swept across the Middle East and North Africa (MENA) region in the early 2010s, was not only a product of political discontent but intertwined with resource distribution and access issues. This case study outlines some resource dynamics that shaped the contours of three countries (Tunisia, Egypt and Syria), contributing partly to their entry into the Arab Spring.

In Tunisia, structural shifts in agricultural policies since the 1980s widened the gap between small and large-scale farmers, intensifying the competition for financial and natural resources.⁶⁵ This shift also involved reduced subsidies for local farming, channeling investments into large-scale projects. The reduction in subsidies, combined with artificially low prices of basic goods, amplified the debt of small farmers and further deteriorated their living standards.⁶⁶ While farmer protests in the Ben Ali regime were often brutally suppressed, the small farmers' resistance against this disparity resurfaced during the Arab Spring, notably when about 100 farms previously managed by the public Society for Agricultural Development were spontaneously occupied.⁶⁷ Additionally, despite a surge in revenues from the Phosphate Company in Gafsa (CPG) – rising from DT 858 million (USD 358 mil.) in 2005 to DT 1261 million (USD 526 mil.) in 2007 – the local region continued to face extreme poverty.⁶⁸ Job cuts by the CPG, a major employer in Gafsa, led to high unemployment rates in an area already coping with extraction-related environmental damage like groundwater contamination.⁶⁹

The 2008 Gafsa uprising saw demonstrators engaged in hunger strikes, sit-ins and prolonged protests to disrupt phosphate production, significantly reducing 2008 revenues to DT 781 million (USD 326 mil.).⁷⁰

Similarly, Egypt's 2010 entry into the Arab Spring revolutions – although often termed a 'Facebook Revolution' – can also be understood as the outcome of ongoing political contestations over resources, including water. In July 2007, 3000 citizens from Burg al-Burullus in Kafr al-Shaykh took to the streets after 20 days without access to safe drinking water, as their consumption quota had been reassigned to tourists.⁷¹ By the end of the month, the water shortage had spread to other governorates and ignited broader civil disobedience among farmers and the marginalized.⁷² The following year, protests around the price of staples such as flour and oil started to be reported, including in Burg al-Burullus. These escalating trends saw continued community-state confrontations marked by arrests and the use of tear gas and batons against protestors.⁷³ The onset of the revolution saw a 3.4 percent rise in the Food and Agriculture Organisation's Food Price Index and a surge in energy costs.⁷⁴ Concurrently, Cairo breached the UN's water poverty line due to water diversion to wealthier areas, highlighting pervasive resource disparities, including unequal access and systemic issues like nepotism and corruption.⁷⁵

Syria grappled with severe droughts from 2006 to 2011, resulting in extensive crop failures and massive loss of livelihood for farmers.⁷⁶ The government's subsidies for water-intensive crops like wheat, combined with inefficient irrigation practices, exacerbated the crisis.⁷⁷ Mismanagement further worsened water shortages and land degradation, fuelling unrest among agriculture-dependent communities. With once-fertile lands turning barren, farmers and herders were left with limited options: relocating, starvation or demanding change. The Assad regime's neglect of the worsening water scarcity situation intensified opposition movements in rural areas.⁷⁸ Notably, disenchanted rural communities played a significant role in the Syrian opposition, particularly in Dara'a, a farming town heavily affected by the prolonged drought and receiving minimal assistance from the Assad regime during the initial stages of the 2011 opposition movement.⁷⁹ The resultant rural-urban migration intensified resource competition, especially in economically distressed cities, forcing impoverished communities to compete for scarce

job opportunities and access to vital water resources.⁸⁰ Severe droughts, water mismanagement and government neglect fuelled dissatisfaction and opposition movements in Syria. Egypt, on the brink of revolution, was also in a water crisis. Tunisia faced challenges due to misguided agricultural policies and oversight regarding extraction-related environmental damage. In short, rather than a spontaneous event, the revolution(s) might be understood as a response, at least partly, to persistent water and resource challenges.

CASE STUDY F: CATTLE RUSTLING IN KENYA

Pastoralism is a livestock production technique tailored for unstable environments with limited or intermittent access to grazing areas, nutrients and water. It is prevalent in arid and semi-arid regions connecting the Sahel, Sahara Desert and Horn of Africa. Kenya hosts the largest pastoral population of approximately 9 million, with assets exceeding USD 1.1 billion, mainly in the form of cattle. Historically, pastoral groups have engaged in conflicts over scarce natural resources vital for their herds – grazing pasture, water sources and transitory routes.⁸¹ These disputes often manifest as “cattle rustling,” involving the theft of another group’s livestock, governed by strict rules of engagement and disengagement.⁸² Cattle rustling serves a dual purpose: it is both a redistributive and livelihood-preserving tool during droughts or diseases, and a social practice – demonstrating heroism, facilitating dowry payments, and enabling participation in initiation rites.⁸³

However, in the past two decades, cattle rustling has become more frequent, larger in scale and more violent. While this escalation is facilitated by the proliferation of small arms and the commercialization of raiding,⁸⁴ it is fuelled by climate-induced resource scarcity.⁸⁵ Increased temperatures and reduced rainfall have led to prolonged periods of drought and severe flooding, limiting access to and the quality of water and grazing pasture.⁸⁶

These environmental pressures have altered the dynamics of conflict among pastoral groups, leading to more frequent resource alliances and leaving smaller, less powerful groups vulnerable to raids and violence. Resource scarcity has moreover transformed the traditional function of rustling by weakening its redistributive purpose and invoking a violent, retaliatory dimension, resulting in cycles of violence that are challenging to

interrupt. Further, as pastoralists move toward areas with greater water availability, conflicts with non-pastoral communities, farmers and ranch owners have increased.⁸⁷ These conflicts typically revolve around proprietary rights (formal or informal) to watering points or boreholes,⁸⁸ unauthorized grazing (caused by narrowed corridors separating pastoral and agricultural areas),⁸⁹ and social disputes when pastoralists, often representing distinct clans, attempt to integrate into new social structures.⁹⁰

IV. ENVIRONMENTAL EXPLOITATION BY NON-STATE ARMED GROUPS

A fourth trend in environmental insecurity is non-state armed groups and terrorist organizations exploiting environmental assets to implement or expand their operations. This principally concerns the increasing body of evidence documenting how armed groups target areas impacted by environmental degradation and climatic events to recruit and build political support. A 2020 study by International Alert, for example, explains how extremist groups had penetrated communities in the Central Sahel by offering support, opportunities and narratives that equally acknowledged local challenges and resonated with community aspirations. They particularly harnessed situations where drought-driven loss of livelihood had impacted large groups of young men. For these youth, the potential for even small remuneration allowed them to demonstrate masculinity and access life goals such as marriage. Indeed, in many communities joining a jihadist group was considered less stigmatizing than being unemployed.⁹¹

Likewise in Somalia, al Shabab’s exploitation of resource shortages and reduced livelihood opportunities has been credited as a key factor in their growth and success. The 2011 drought and subsequent famine, for example, saw a steep and consistent increase in engagement. The group was also better positioned to extract resources from local communities, with drought-affected herders agreeing to support the rebel group in exchange for food and cash.⁹²

Degraded livelihoods may also be an important factor in group recidivism. In 2002, the Geneva Academy and Accept International conducted interviews with 75 disengaged youth combatants preparing to return to

their communities in South Sudan, Somalia and Yemen. The most frequently cited concern was that the main forms of livelihood they would seek to return to were under increasing threat from drought and volatile commodity prices. Community leaders speculated that the combination of unemployment, education gaps and potential stigmatization would leave these individuals more vulnerable to group re-attachment.

Non-state armed groups may also extract or exploit resources as a source of income. A prime example is the ISIL group's seizure of oil production facilities in Syria and Iraq.⁹³ While ISIL did not enter Syria with the specific objective of controlling these assets, it quickly became an operational priority. Starting in 2013, the group diverted its territorial acquisition away from northern Syria and shifted east towards oil-rich areas such as Deir Ezzor and Deiro. In 2014, it took over the Iraqi oil fields of Mosul, Ajil and Himiran. Revenues for ISIL sat between USD 1.5–3 million per day, securing it the title of the richest group in terrorism history.⁹⁴ The majority of this money came from sales to the population, who had no other source of fuel for heating, cooking or transportation. Oil was also smuggled through southern Turkey's porous border, these black markets becoming instrumental to the financing of terrorism and key to the group's recruitment efforts and operational expansion into other countries.⁹⁵

CASE STUDY G: THE WAGNER GROUP

The Wagner group is a private military company (PMC) that surfaced in the public domain around 2013–2014. It largely operates as a proxy of the Russian State rather than a standard private entity.⁹⁶ Although PMCs are constitutionally illegal in Russia, loopholes allow Wagner to operate via State-run enterprises and subcontracting networks, utilizing legal opacity to the advantage of the Kremlin.⁹⁷ Despite the group's conspicuous presence, it wasn't until 2022 that it was officially registered as a company, establishing its headquarters in St. Petersburg.⁹⁸ It is classified as a transnational criminal organization by the US, and there are ongoing discussions with the EU and UK governments to potentially designate it as a terrorist entity.⁹⁹

Wagner's diverse portfolio combines a resource-driven strategy with paramilitary operations, protective services and site security, entangled in severe human rights

violations.¹⁰⁰ Notably, Wagner is deployed at critical oil, gas, infrastructure and port facilities in Libya to provide security, including in Tobruk, Derna, Benghazi and Sirte.¹⁰¹ Operating in over 20 countries worldwide, with a particular focus on poorly governed yet resource-rich states, Wagner has established its presence in various African countries such as Mali, the Central African Republic (CAR), Sudan and Mozambique. Initially providing security services to politicians and safeguarding high-value installations, their work expanded to training state military forces and delivering tactical support. In Mali, for example, their activities involved providing security and training local forces ostensibly to counter Salafist threats and political instability, a move seen as 'coup-proofing' of the Junta regime.¹⁰²

The group's services are reportedly paid for in natural resource extraction concessions, particularly involving gold, diamonds and forestry.¹⁰³ The US-based non-profit Organized Crime and Corruption Reporting Project (OCCRP), for example, has investigated the Wagner Group's alleged funnelling of resources to regime forces in Sudan in exchange for privileged access to the country's lucrative gold mining sector.¹⁰⁴ According to some estimates, the group's engagement in mining, illicit gold trade and forestry may have amassed upwards of USD 4 billion in profits since 2017 from African operations alone.¹⁰⁵ Wagner then uses its security presence to pave the way for associated entities to channel resources back to Russia.¹⁰⁶

This multi-faceted engagement underscores the blurred boundaries between security, resource acquisition and political influence on a global scale. Wagner's role as a 'non-state' armed group allows it to strategically leverage environmental resources to advance both its operational capabilities and the political interests of its affiliated state(s), intertwining security operations with economic and political gains.

V: EXTRACTIVE INDUSTRIES AS A DRIVER OF CONFLICT

Demographic trends – particularly population growth and urbanization – have increased the global demand for food, energy and other environmental assets. In response, the past two decades have seen a sharp increase

in governments in poor but resource-rich countries granting large-scale land concessions (generally in the form of leases or licenses) to foreign investors for agro-industrial enterprises, resource extraction, energy and biofuel production, and production-related ventures.

Although this is taking place in Asia and Latin America, the most sought after lands are in Africa, where a combination of unexploited surface and sub-soil resources, weak rule of law and low levels of private land ownership has created lucrative opportunities for companies. Between 2004–2009, nearly 2.5 million hectares in Ethiopia, Ghana, Madagascar, Mali and Sudan were allocated to foreign-owned entities. Examples include a lease of 1.3 million hectares in Madagascar to South Korea's Daewoo Corporation; a concession agreement for Bangalore-based food company Karuturi Global to use 30 percent of Ethiopia's Gambella region; and a lease in Mozambique (equating to an area the size of Switzerland and Austria combined) to Brazilian and Japanese companies to produce soybeans and maize.¹⁰⁷

For the leasing entity, the objective is to supply and derive profits from the global food and commodities markets. In the future, however, leases may be seen by states as a modality for meeting domestic food security needs and, at the same time, limiting national carbon emissions by outsourcing them abroad.¹⁰⁸ The motivations behind lessor states entering into lease agreements are more varied. Some ventures will be geared towards proper ends, such as fast-tracking development, facilitating access to foreign currency markets and mitigating climate risks. Certainly, for some African states, agro-food production deals are viewed as the only way to access the climate adaptation-ready technology and production infrastructure needed to transition to higher-value agricultural processing.¹⁰⁹ Another argument is that leases are the most efficient way to get patented technology – hydroelectric cells, solar batteries and drought-resistance seeds – into high risk markets.

On other occasions, lease deals will be opportunistic, crafted to serve vested interests and/or facilitate rent seeking.¹¹⁰ Indeed, the object of leases is usually high value lands, for example rainforests or unexploited terrain suited to specific forms of agriculture. These lands are disproportionately held by indigenous communities and customary land users, who generally have little power to

contest or negotiate fairer lease deals, particularly where they do not have formal legal title to their lands. Even in jurisdictions that recognize customary land tenure, uptake and enforcement are often poor. Farmers thus risk being violently forced off their land, not necessarily because they lack legal rights, but because they lack the resources and/or awareness to enforce them.¹¹¹

A range of negative externalities can follow. Most obviously, land concessions can weaken a country's environmental asset base, compromising its growth potential and future food security. Moreover, unless leases are carefully formulated and monitored with robust accountability mechanisms, there is a risk that projects will be administered in an exploitative manner that causes permanent damage to land, air or water resources. This risk is especially acute in contexts of weak governance, low regulatory capacity and where power imbalances exist between the contracting parties.¹¹²

Leases and concessions also drive a range of conflict outcomes, as well as outcomes that drive conflict. First, landholders can be violently evicted, forced off or dispossessed of their lands, either by companies, private contractors or national police/armed forces. Moreover, because indigenous communities and customary communities often operate autonomously from state policing and accountability mechanisms, such tactics may be employed with impunity. The group most vulnerable in these situations is the landless who rely on commons, such as forests, cultivation areas, ponds and rivers, for survival. Notably, these commons are often the first areas of land to be lost to elites, investors and state development schemes, usually because they are mistakenly deemed vacant and unused.

Even where communities are not displaced from their lands, the presence of large-scale extractive, energy and production projects introduces new opportunities for conflict. A transient male workforce, for example, often correlates with an increase in opportunistic, organized and systematic sexual violence against women.¹¹³ Livelihoods may also be compromised when ventures deplete the quantity and quality of resources depended on for food and income. A report by Fian International, for example, describes how in Honduras agribusiness and shrimp farming had monopolized large natural resource areas, polluting water sources and driving up the cost of lease-plots.¹¹⁴

Third, concession and lease agreements create winners and losers at the community level. This can manifest directly, as noted in displacement, livelihoods denigration and increased land scarcity. These outcomes then create knock on effects, such as higher rates of land grabbing, boundary encroachments, disputes over commons, exploitation, intra- and inter-family land disputes and inheritance denials.

A final risk relates to broader conflict driven by food insecurity and loss of livelihoods. Today in Africa, smallholder farmers number around 33 million and produce 70 percent of the continent's food supply.¹¹⁵ Rapid population growth coupled with the disproportionate consequences of climate change to the region, mean that food availability is projected to worsen in the coming decades. Indeed, for smallholder producers, climate events such as drought can destroy all asset holdings, permanently disabling their access to food and livelihoods.¹¹⁶ Lease and concession deals may worsen these food supply challenges. This is because while agreements generally earmark pre-set levels of food for local markets, agricultural projects designed to supply foreign markets divert land away from domestic food production, and are a weak driver of economic activity. Governments may therefore find themselves dealing simultaneously with inadequate food supply, the displacement of millions of individuals who rely on subsistence farming for survival, as well as the implications of mass urbanization and unemployment.

CASE STUDY H: LAND LEASING IN LIBERIA

Between 2006–2011, Liberia's Sirleaf government allocated over a third of the country's land to private investors for logging, mining and agro-industrial uses.¹¹⁷ Over 1.6 million acres were designated for palm oil plantations, awarded to Malaysian corporation Sime Darby and Golden Veroleum, a New York-based Fund L.P. subsidiary.¹¹⁸ These actions continued a historical trend; in 1926, Liberia ratified an agreement granting Firestone Tire and Rubber Company the right to lease a million acres of rubber-growing land for 99 years, aiming to relieve national debt and resist colonial pressures.¹¹⁹ Modern leases, however, are justified under economic development goals.¹²⁰

These concessions have decreased access to agricultural land and community forest land for local households,

impacting their livelihoods and increasing food insecurity. A 2018 study found that households in towns affected by concessions experienced a 9–12 percent decrease in access to agricultural land and a 21 percent decrease in access to community forest land due to concession operations.¹²¹ This decline in access caused a reduction in the amount of agricultural production and the number of (non-timber) forest products that households harvested for subsistence, undermining food security.¹²² The study also revealed an increase in out-migration, with a 14 percent increase in households receiving remittances in affected towns, suggesting that households used migration as a coping mechanism to offset the decrease in income.¹²³

Land rights in Liberia are governed by statutory and customary systems, and lack of clarity between these systems has been one driver of conflict.¹²⁴ Land disputes have also sparked wider conflicts, notably contributing to Liberia's civil war (1989–1997). This conflict was propelled by resource control and mismanagement by governmental and multinational entities, with natural resources serving as both motivators for war and financiers of armed groups during the conflict.¹²⁵

One consequence of the war's conclusion was that in 2005 all logging contracts were cancelled.¹²⁶ Soon after, efforts were made to grant communities a stake in forest revenues through a Forestry Reform Law in 2006. In 2009 and 2018 respectively, the Community Rights Law (CRL) and Land Rights Act were passed, recognizing customary land tenure.¹²⁷

Despite these legislative advances, logging companies continue to pressure communities into signing clandestine agreements granting logging rights. Moreover, land authorities face challenges effectively governing the transfer of land between communities and commercial interests, and laws cannot be applied to existing concessions.¹²⁸ Violent conflicts between communities and concession holders have escalated due to governance failures in concession allocation, overlapping rights and insufficient consultations with communities.¹²⁹ In Grand Bassa county, for example, violent clashes between locals and security personnel over palm plantation land evoked "memories of the nightmarish lawlessness of the war".¹³⁰ Likewise, in Butaw district, security forces suppressed riots at Golden Veroleum Liberia's palm oil plantation, prompting youth to threaten 'consequences' unless land

grievances were addressed.¹³¹

CASE STUDY I: THE KAREN OF MYANMAR

With a population of around 7 million people, the Karen constitute Myanmar's second-largest ethnic minority group. They are represented by the Karen National Union (KNU),¹³² which exercises varying levels of control over large tracts of south-east Myanmar, including Kayin and Mon States, and the Tanintharyi and Bago Regions. The ecologically and timber-rich area known as the Kawthoolei is under the KNU's exclusive control and has a population of around 100,000.¹³³

The KNU has been involved in a non-international armed conflict (NIAC) with the Myanmar central government since British independence in 1948.¹³⁴ This effort is led by the organization's armed wing – the Karen National Liberation Army (KNLA) – which boasts an estimated 5,000 fighters.¹³⁵ The conflict has seen peaks and troughs, with escalations in the 1970s and mid-1990s, followed by a ceasefire agreement in 2012 and a 'nationwide' ceasefire in 2015.¹³⁶ While such agreements may have capped the most egregious forms of violence, they failed to translate into sustained peace. KNU-controlled areas have been subject to intermittent attacks, with the most recent uptick following the 2021 coup, which the KNU publicly denounced.¹³⁷

Unique to the conflict is the centrality of the environment and natural resources management. The environment can be seen as the object of the conflict, sitting at the heart of Karen identity, and is thus synonymous with and inseparable from their battle for self-determination.¹³⁸ The environment is also being used as a tool of war. Government military forces have indiscriminately burned rice fields, destroyed villages and prevented access to sacred sites such as river mouths and areas of the forest.¹³⁹ Successive Special Rapporteurs on the Situation of Human Rights in Myanmar and on the Rights of Indigenous Peoples have highlighted a range of abuses to this end.¹⁴⁰ For the Karen people, the impacts of such acts extend far beyond material loss, reduced livelihoods and physical displacement. Where loss of access prevents rituals and upsets the human-ecological-spiritual balance, it is interpreted as an attack on cultural identity. Anthropological research conducted by Andrew Paul, for example, has detailed how displaced Karen from Tee Moo

Kee believe that their inability to propitiate the K'Sah spirits had resulted in poor rice yields and community-wide food insecurity.¹⁴¹

In the past decade, a particular conflict flashpoint has been the Government's introduction of new land laws¹⁴² to facilitate investment projects, including hydropower plants, road construction, mining and agricultural plantation development.¹⁴³ According to the KNU, this has resulted in the appropriation of millions of acres of community-owned farmland, with residents displaced, often violently.¹⁴⁴ Some have termed this 'ceasefire capitalism' – the government invoking peace as a front for profit-driven natural resources exploitation. As noted by the UN Special Rapporteur on the Situation of Human Rights in Myanmar in 2019:

[M]ilitary-dominated state-owned economic enterprises in natural resource extraction are the regulators, revenue collectors, and commercial entities, and they are permitted to retain vast profits that bypass the Government budget with no record kept on how they are spent.¹⁴⁵

Another interpretation is that land reform is a military strategy to reassert physical control over the Karen area: “[the decision to allocate] land concessions in ceasefire zones [can be understood] as an explicit postwar military strategy to govern land and populations to produce regulated, legible, militarized territory”.¹⁴⁶ For example, in 2018 the military deployed around 1,500 troops to seize, refurbish and expand a roadway through villagers' farmlands and forests in northern Mutraw, provoking violent clashes with the KNLA and forcibly displacing more than 2,400 villagers.¹⁴⁷

VI: ENVIRONMENTAL CONFLICT AS A GENDERED PHENOMENON

It is increasingly understood that environmental loss and degradation – and strategies to avoid, mitigate or adapt to these phenomena – can deepen gender inequality, extend women's vulnerability to violence and heighten their exposure to conflict. These relationships are largely indirect in so far as they create situations, magnify dynamics and consolidate cultural norms that expose women to marginalization, discrimination and violence. But while they may be difficult to observe and causality

is less clear cut, the outcomes are no less debilitating, demanding a thorough and rights-based interrogation of the environment-gender-conflict nexus.

Structural inequality and discrimination position women and girls in such a way that they are the most exposed to the impacts of environmental loss and degradation.¹⁴⁸ Women make up 70 percent of those living below the poverty line,¹⁴⁹ 60 percent of the global population suffering from hunger, and a majority of those with livelihoods connected to rural agriculture. This dependency on localized natural resources, coupled with the climate sensitivity of such resources, means that drought, deforestation, extreme weather events and rising sea and temperature levels impact women negatively and disproportionately vis-à-vis men.¹⁵⁰ These impacts manifest in conflict both directly (for example when women are targeted in acts of violence) and indirectly (by compounding inequality and skewing resource holdings). Moreover, impacts permeate all levels of society, as described below.

INDIVIDUAL AND HOUSEHOLD LEVEL CONFLICT

At the individual level, a reduced ability to safely secure resources (such as food and water) and generate agricultural income heightens exposure violence and sexual exploitation. Such risks are especially acute in emergency settings, due to breakdowns in social safeguards, disruption to essential services, displacement and homelessness.¹⁵¹ A post-disaster increase in violence against women has been identified in contexts as varied as Hurricane Katrina (2005), the Christchurch earthquake (2011), tropical cyclones in Vanuatu (2011), Spain's millennium heatwaves (2008–2016) and Australia's bushfires (2019–2020).¹⁵²

Gendered forms of violence also take place in slow onset disaster contexts. A frequently cited example is women being forced to offer sexual services in order to access natural resources. Such violence is generally opportunistic, with men targeting women and girls as they enter forests, or collect water or fuel from common areas.¹⁵³ Risks escalate as resource scarcity and temperature increases push women and girls to travel longer distances, into unfamiliar areas or without usually-available safeguards (such as travelling in groups or during daylight).¹⁵⁴

At the household level, adverse environmental impacts routinely complicate or prevent women from performing their gender-ascribed domestic roles, spilling over into intra-family conflict. Women living in areas affected by drought,

salinity or water austerity, for example, often struggle to maintain household water security. This may leave them unable to wash clothes or clean surfaces, or having to spend more time on collection, thus reducing the time available for other household tasks.¹⁵⁵ Where drought and poor water infrastructure result in price hikes, this can reduce the amount of food women are able to purchase.¹⁵⁶ In all cases, their inability to deliver against gender-ascribed expectations leaves women and girls vulnerable to violence, recrimination and/or punishment.

Also at the household level, pressure on land-derived livelihoods, displacement and food insecurity can lead to negative coping mechanisms and harmful traditional practices.¹⁵⁷ Forced and early marriage, for example, can be a tool to reduce household expenses, or a mechanism to protect single women from an uncertain future. Forced marriages can also be transactional, for example when marriage to a woman is exchanged for resources or land. Other risks include withdrawal from education, denying inheritance and unsafe employment.¹⁵⁸

STRUCTURAL DISEMPOWERMENT AND INEQUALITY

The disproportionate impacts of environmental degradation and exploitation felt by women also work to reinforce, protract and further complicate the cycle of disempowerment. This is showcased in how environmental damage is skewing the gendered nature of land ownership and control. Although they are highly dependent on land for food and livelihoods, fewer than 15 percent of agricultural landholders globally are women.¹⁵⁹ Even within families, jointly held property is more likely to be registered or titled in a way that privileges men. The knock on effects are threefold. First, while women are more exposed to environment-driven food insecurity and income shocks – because they are less likely to own or control that land – they have less power or voice in how this might be mitigated or managed.¹⁶⁰ This can expose women to mutually-reinforcing economic marginalization and food insecurity.

Second, as fertile land becomes scarcer and thus sought after, women are more vulnerable to forced eviction and dispossession. As non-owners, women's interests in such land and exposure to harm may not be factored into sale/lease negotiations. Even when they have tenure rights, women's voices are often overlooked. It must be noted that unequal power distribution and vested interests penetrate every level of the socio-economic hierarchy, including the

grassroots level. Indeed the research on large-scale land concessions underscores how land grabs, expropriations and even valid transactions are generally a balancing of male economic interests, whether the beneficiaries are state actors, landholding elite or local community leaders.

Third, to the extent that they are not gender-informed, women – as land users and not proprietors – tend to be excluded from adaptation tools such as livelihoods diversification or livelihoods refinancing. This compromises women’s ability to engage in economic activities on an equal basis as men, denying them access to resources and/or strengthening entry barriers to male dominated sectors. The consequences are likewise mutually reinforcing. Not only is women’s economic marginalization further entrenched, but at the same time one of the most effective tools for closing gender gaps – women’s access to property and livelihoods – is eroded. Moreover, by excluding the insights and technical knowledge borne from women’s interconnectedness with the land, climate change mitigation and environmental protection strategies are less impactful, widening the externalities that women are exposed to.¹⁶¹

CASE STUDY J: THE ASSASSINATION OF COPINH LEADER, BERTA CÁCERES

The impact of the climate crisis, environmental degradation, large-scale agriculture and extractive projects disproportionately impact indigenous women and girls. These challenges contribute to the erosion of their traditional and spiritual practices, impacting their cultural identity and livelihoods. Consequently, indigenous women and girls are drawn into a cycle of impoverishment and discrimination.¹⁶² Indigenous women and girls with intersecting identities or unique characteristics experience particularly high rates of gender-based violence.¹⁶³ This is particularly true for indigenous women advocating for human, environmental or land rights.¹⁶⁴ A notable example is the 2016 assassination of Berta Cáceres and fellow members of the Consejo Cívico de Organizaciones Populares e Indígenas de Honduras (COPINH) due to their advocacy protesting the Agua Zara hydroelectric dam.

COPINH is a grassroots social movement in support of indigenous rights in Honduras. Founded in 1993 by Berta Cáceres, COPINH emerged as a response to the increasing threats faced by indigenous Lenca communities from large-scale development projects. A major issue for COPINH was the construction of hydroelectric dams on indigenous land

without the free, prior and informed consent of affected communities. One such instance concerned the Agua Zurca dam – a relatively small hydroelectric project – yet large enough to pose a risk of depleting the Gualcarque River, consequently jeopardizing the communal farmlands. The river also carried profound cultural and spiritual value for the Lenca population, with spiritual ceremonies frequently taking place at the riverbank. Moreover, restricted access to the river would disproportionately impact Lenca women, as they are traditionally responsible for supplying water for their families and managing laundry.¹⁶⁵ The project led to a militarization of the area, with frequent searches, harassment and detention of local protestors.¹⁶⁶ This culminated with the assassination of Berta Cáceres in her home on 2 March 2016. Four months later, Lesbia Yaneth, another indigenous activist and member of COPINH, was also murdered. These deaths have been labelled political femicides, aimed at suppressing the voices of women who stand up for their rights against a patriarchal and racist system that increasingly threatens the well-being of local communities.¹⁶⁷

END NOTES

- 1 Meierding, E. (2020) *The Oil Wars Myth: Petroleum and the Causes of International Conflict*, Cornell University Press.
- 2 Selby, J. (2005) 'The Geopolitics of Water in Middle East: Fantasies and Realities' *Third World Quarterly*, 26(2) p.330.
- 3 Wolf, A. (1998) 'Conflict and cooperation along international waterways' *Water Policy*, 1(2) p.251.
- 4 See Selby, 'The Geopolitics of Water in The Middle East: Fantasies and Realities', supra 2, pp.344-345.
- 5 Muggah, R. and Dryganov, V. (2020) *Russia's Resource Grab in Ukraine, Foreign Policy*. <https://foreignpolicy.com/2022/04/28/ukraine-war-russia-resources-energy-oil-gas-commodities-agriculture/>.
- 6 Мищенко, В. and Mishchenko, V. (2012) 'Ukrainian Mineral Resources in the Market Transformations' *Economy of Nature Usage*.
- 7 Downey, K. (2012) 'Intellectual Property Rights and Renewable Energy Technology Transfer in China' *South Carolina Journal of International Law and Business*, 9(1) p.91.
- 8 Abdulla, A. (1994) 'Gulf War: The Socio-Political Background' *Arab Studies Quarterly*, 16(3) pp. 6-7; Krapels, E.N. (1993) 'The Commanding Heights: International Oil in a Changed World' *International Affairs (Royal Institute of International Affairs 1994-)*, 69(1) p.69.
- 9 Lindén, O., Jernelöv, A. and Egerup, J. (2004) *The Environmental Impacts of the Gulf War 1991*, IIASA Interim Report, pp.12-13.
- 10 Office of The Historian (n.d.) *Milestones: 1989-1992 - The Gulf War 1991*, US Department of State <https://history.state.gov/milestones/1989-1992/gulf-war>
- 11 UNSC (1990) Security Council resolution 660 [Iraq-Kuwait], S/RES/660.
- 12 UNSC (1990) Security Council resolution 678 [Iraq-Kuwait], S/RES/678.
- 13 Mbaku, J.M. (2022) 'The Grand Ethiopian Renaissance Dam and the Nile Basin Conflict' *Georgetown Journal of International Affairs*, 23(1) pp.84-91.
- 14 Ayferam, G. (2023) *The Nile Dispute: Beyond Water Security*, Carnegie Endowment for International Peace <https://carnegieendowment.org/sada/88842>
- 15 Al-Anani, K. (2020) *Water Conflict Between Egypt and Ethiopia: A Defining Moment for Both Countries*, Arab Center Washington DC <https://arabcenterdc.org/resource/water-conflict-between-egypt-and-ethiopia-a-defining-moment-for-both-countries/>
- 16 Ibid.
- 17 Embassy of Ethiopia (n.d.) *Economy* <https://ethiopianembassy.org/economy/>
- 18 The Nile Equatorial Lakes Subsidiary Action Program (2023) 'History and Status of the Nile Basin Cooperative Framework Agreement (CFA) NELSAP' <https://www.nilebasin.org/nelsap/index.php/en/news-events/421-history-and-status-of-the-nile-basin-cooperative-framework-agreement-cfa>
- 19 See Ayferam, 'The Nile Dispute: Beyond Water Security', supra 14.
- 20 Maher, H. (2023) 'Egypt says talks over Grand Ethiopian Renaissance Dam have failed' *Reuters* <https://www.reuters.com/world/africa/egypt-says-talks-over-grand-ethiopian-renaissance-dam-have-failed-statement-2023-12-19/>
- 21 Endeshaw, D. (2023) 'Ethiopia says it has completed filling disputed dam projects reservoir' *Reuters* <https://www.reuters.com/world/africa/ethiopia-says-it-has-completed-filling-disputed-dam-projects-reservoir-2023-09-10/>
- 22 See Maher, 'Egypt says talks over Grand Ethiopian Renaissance Dam have failed', supra 20.
- 23 Strategic Foresight Group (2014) *Water and Violence: Crisis of Survival in the Middle East*, p.2.
- 24 Vidal, J. (2014) *Water supply key to outcome of conflicts in Iraq and Syria, experts warn*, *The Guardian* <https://www.theguardian.com/environment/2014/jul/02/water-key-conflict-iraq-syria-isis>
- 25 See also ICRC (2020) *Guidelines on the Protection of the Natural Environment in Armed Conflict*.
- 26 Al-Dawoody, A. and Gale, S. (2020) *Protection of the Environment and Non-State Armed Groups: IHL and Islamic Law Perspectives, Religion and Humanitarian Principles* <https://blogs.icrc.org/religion-humanitarianprinciples/protection-of-the-environment-and-non-state-armed-groups-ihl-and-islamic-law-perspectives/>
- 27 Leclerc, G. (2023) *Russia's war on Ukraine: High Environmental Toll*, European Parliamentary Research Service (EPRS). Estimates based on Ukraine's environmental inspections show that Russia's invasion has inflicted roughly €52.4 billion in environmental damage, with €27 billion in damage to air, €23.6 billion in damage from waste pollution, €1.5 billion in damage to water and €0.3 billion in damage to soils. See further, *United Nations Environmental Programme (2022) The Environmental Impact of the Conflict in Ukraine: A Preliminary Review*.
- 28 See *United Nations Environmental Programme, The Environmental Impact of the Conflict in Ukraine*, supra 27.
- 29 Roshchina, O. (2022) 'Russians hit power plant and refinery in Kremenchuk at Easter' *Ukrainska Pravda* <https://www.pravda.com.ua/eng/news/2022/04/25/7341885/>; see also 'Ukraine's Naftogaz shuts Shebelinsky oil refinery due to risk from hostilities' *Reuters* (2022) <https://www.reuters.com/business/energy/ukraines-naftogaz-shuts-shebelinsky-oil-refinery-due-risk-hostilities-2022-02-26/>
- 30 See *United Nations Environmental Programme, The Environmental Impact of the Conflict in Ukraine*, supra 27, 18. *Ministry of Environmental Protection and Natural Resources of Ukraine (2022)* <https://rdo.in.ua/en/ministry-environmental-protection-and-natural-resources>; *State Nuclear Regulatory Inspectorate of Ukraine (2022)* <https://snrii.gov.ua/en>
- 31 Also the bombing of the Nika-Tera terminal in Mykolaiv used for shipment of chemical goods and grain, as well as the Zaporizhzhia wastewater treatment plant in Vasilivka.
- 32 See *United Nations Environmental Programme, The Environmental Impact of the Conflict in Ukraine*, supra 27.
- 33 *UN Food and Agricultural Organization (2022) The importance of Ukraine and the Russian Federation for global agricultural markets*.
- 34 *UN Security Council (2021) 'ISIL/Da'esh Committed Genocide of Yazidi, War Crimes against Unarmed Cadets, Military Personnel in Iraq, Investigative Head Tells Security Council'* *Press Release, SC/14514* <https://press.un.org/en/2021/sc14514.doc.htm>
- 35 It destroyed shi'a and Christian places of worship, as well as cultural heritage.
- 36 It should be noted that in its initial campaign of occupation, ISIL did not damage environmental assets but instead exploited them for income. Its oil revenues peaked at USD40 million/month in 2015. Johnston, P. (2017) *Oil, Extortion Still Paying off for ISIS*, *The RAND Blog*. <https://www.rand.org/pubs/commentary/2017/10/oil-extortion-still-paying-off-for-isis.html> See also Hansen-Lewis, J. and Shapiro, J.N. (2015) 'Understanding the Daesh economy' *Perspectives on Terrorism*, 9(4) pp.142-155. In Syria's Gezirah and Iraq's Ninewa province in Iraq, for example, it took over farms, silos, dams and processing factories as a source of direct revenue, a source of tax and to guarantee food supplies on its territory. Jaafar, H.H., Sujud, L. and Woertz, E. (2022) 'Scorched earth tactics of the "Islamic State" after its loss of territory: intentional burning of farmland in Iraq and Syria' *Regional Environmental Change*, 22(4) <https://doi.org/10.1007/s10113-022-01976-2>; Jaafar, H.H. and Woertz, E. (2016) 'Agriculture as a funding source of ISIS: a GIS and remote sensing analysis' *Food Policy*, 64 pp.14-25.
- 37 Westcott, T. (2018) *Iraq's Charred Olive Groves Another Ruinous Legacy of the Islamic State*, *Middle East Eye* <https://www.middleeasteye.net/news/iraqs-charred-olive-groves-another-ruinous-legacy-islamic-state> Not just the Islamic State, Turkish-backed Syrian opposition groups (al-Hamzat mercenary group, al-jabha al-shamiyyah) cut down at least 500,000 olive trees in Syria's Afrin, historically Kurdish (to sell). Shkaki, J. (2020) *Turkish backed militias cut down half a million olive trees in Syria's Afrin North* *Press Agency* <https://npasyria.com/en/45543/>; Arango, T. (2013) 'Sectarian violence reignites in an Iraqi town' *New York Times* <https://www.nytimes.com/2013/09/19/world/middleeast/sectarian-violence-reignites-in-an-iraqi-town.html>

- 38 Amnesty International (2018) Dead land: Islamic State's deliberate destruction of Iraq's farmland; Schwartzstein, P. (2016) The Islamic State's scorched earth strategy, *Foreign Policy* <https://foreignpolicy.com/2016/04/06/the-islamic-states-scorched-earth-strategy/> See Jaafar, 'Scorched earth tactics of the "Islamic State" after its loss of territory', supra 36; von Lossow, T. (2016) 'The Rebirth of Water as a Weapon: IS in Syria and Iraq' *The International Spectator*, 51(3) pp.82-99.
- 39 Ibid.
- 40 El-Ghobashy, T. and Warrick, J. (2018) 'The Islamic State's toxic farewell: Environmental sabotage and chronic disease' *The Washington Post* https://www.washingtonpost.com/world/the-islamic-states-toxic-farewell-environmental-sabotage-and-chronic-disease/2018/02/04/927ff2b6-05c8-11e8-ae28-e370b74ea9a7_story.html
- 41 Its retreat began with the recapturing of Mosul and Raqqa in 2017. By the start of 2018, ISIL had lost most of its territory, losing its last bastion Baghuz in March 2019. See Jaafar, 'Scorched earth tactics of the "Islamic State" after its loss of territory', supra 36.
- 42 Ibid. It has been shown that government and rebel strategies of armed conflict include the increase in violent activity during local crop growing season (wheat and barley) either to capture or destroy agriculture resources.
- 43 See El-Ghobashy, 'The Islamic State's toxic farewell', supra 40.
- 44 See Jaafar, 'Scorched earth tactics of the "Islamic State" after its loss of territory', supra 36; Cordesman, A.H. and Toukan A. (2019) *The Return of ISIS in Iraq, Syria, and the Middle East*, Center for Strategic and International Studies (CSIS) <https://www.csis.org/analysis/return-isis-iraq-syria-and-middle-east>
- 45 Indeed, a significant positive relationship ($r = 0.83$) exists between the number of IS-related incidents and the percent burned agricultural area during 2019; See Jaafar, 'Scorched earth tactics of the "Islamic State" after its loss of territory', supra 36.
- 46 Wirkus, L. and Bogardi, J. (2008) 'The Global Water Crisis – Are Water-related Violent Conflicts Becoming More Likely?' in Wirkus, L. and Vollmer, R. (eds.) *Monitoring Environment and Security: Integrating concepts and enhancing methodologies*, Bonn International Center for Conversion, pp.28-33.
- 47 Maystadt, J.F. and Ecker, O. (2014) 'Extreme Weather and Civil War: Does Drought Fuel Conflict in Somalia through Livestock Price Shocks?' *American Journal of Agricultural Economics*, 96(4) pp.1157-1182.
- 48 Defined as "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life." UN Food and Agricultural Organization (2006) *Food Security, Policy brief*.
- 49 See further; Brinkman, H. and Hendrix, C. (2011) *Food Insecurity and Violent Conflict: Causes, Consequences, and Addressing the Challenges*, World Food Programme Occasional Paper No. 24, p.2.
- 50 The World Bank (2012) *The Grain Chain; Food Security and Managing Wheat Imports in Arab Countries*, p.1.
- 51 Welton, G. (2011) *The Impact of Russia's 2010 Grain Export Ban*, Oxfam p. 3; BBC News (2010) *Russia ban on grain export begins*, BBC <https://www.bbc.com/news/business-10977955>
- 52 See Welton, *The Impact of Russia's 2010 Grain Export Ban*, supra 51.
- 53 Hove, H., Echeverria, D. and Parry, J.E. (2011) *Review of current and planned adaptation action: East Africa, Adaptation Partnership*.
- 54 See Maystadt, 'Extreme Weather and Civil War', supra 47.
- 55 Climate Diplomacy (n.d.) *Conflict between the Sa'ad and Suleiman of the Habar Gidir*, Case study <https://climate-diplomacy.org/case-studies/conflict-between-saad-and-suleiman-habar-gidir>
- 56 Middleton, R. et al. (2018) *Somalia Climate-related security risk assessment*, Expert Working Group on Climate-Related Security Risks <https://static1.squarespace.com/static/553e2ef8e4b06d9495204c9d/t/5c4061594fa51a11f9d1ffe/1547723143417/Somalia-Report-Expert-Working-Group-on-Climate-related-Security-Risks.pdf>.
- 57 Climate Diplomacy (n.d.) *Climate Change, Charcoal Trade and Armed Conflict in Somalia*, Case study <https://climate-diplomacy.org/case-studies/conflict-between-saad-and-suleiman-habar-gidir>
- 58 UN Security Council (2011) *Report of the Secretary-General on the protection of Somali natural resources and waters*, S/2011/661. See further, Nellemann, C. et al. (2014) *The environmental crime crisis: threats to sustainable development from illegal exploitation and trade in wildlife and forest resources*, UNEP Rapid Response Assessment. See also Ward, G.F. (2014) 'The Somali Charcoal Industry: Strange Bedfellows' *Africa Watch*, 5.
- 59 See Selby, 'The Geopolitics of Water in the Middle East', supra 2, p.344.
- 60 Kandeh, J. (2005) 'The criminalization of the RUF insurgency in Sierra Leone' in Arnson, C. and Zartman, W. (eds.) *Rethinking the economics of war: the intersection of need, creed, and greed*, p. 97; Munkler, H. (2005) *The New Wars*, Polity, p. 7; Zartman, W. (2005) 'Need, Creed and Greed in Intrastate Conflict' in Arnson, C. and Zartman, W. (eds.) *Rethinking the economics of war: the intersection of need, creed and greed*, p. 257.
- 61 See Kandeh, 'The criminalization of the RUF insurgency in Sierra Leone', supra 60.
- 62 Ribot, J. and Peluso, N. (2003) 'A Theory of Access' *Rural Sociology*, 68(2) p.160.
- 63 El-Katiri, L. (2014) 'The energy poverty nexus in the Middle East and North Africa' *OPEC Energy Review*, 38(3) p.296.
- 64 In 2005, fuel insecurity led to riots resulting in 36 deaths; Whitaker, B. (2005) '36 die in riots after Yemen fuel price hikes' *The Guardian* <http://www.theguardian.com/world/2005/jul/23/yemen.brianwhitaker>
- 65 Trust Works Global (2018) 'Natural resource-related country analysis' <https://trustworksglobal.com/publication/natural-resource-related-country-analysis-tunisia/>
- 66 Ibid.
- 67 Ibid.
- 68 Ibid.
- 69 Ibid.
- 70 Ibid.
- 71 Ali, K. (2012) 'Precursors of the Egyptian Revolution' *IDS Bulletin*, 43(1) p.21.
- 72 Ibid.
- 73 El-Ghobashy, M. (2011) 'The Praxis of the Egyptian Revolution' in *Middle East Report 258* (Spring 2011).
- 74 Joffé, G. (2011) 'The Arab Spring in North Africa: origins and prospects' *The Journal of North African Studies*, 16(4) p.509.
- 75 Amin, S. (2010) 'Egypt's farmers desperate for clean water' *CNN* <http://edition.cnn.com/2010/WORLD/africa/11/09/egypt.water.shortage/>
- 76 Femia, F. and Werrell, C. (2012) 'Syria: Climate Change, Drought and Social Unrest' *Center for Climate and Security* <https://climateandsecurity.org/2012/02/syria-climate-change-drought-and-social-unrest/>
- 77 Ibid.
- 78 Ibid.
- 79 Ibid.
- 80 Ibid.
- 81 Schilling, J., Opiyo, F.E. and Scheffran, J. (2012) 'Raiding pastoral livelihoods: motives and

effects of violent conflict in north-western Kenya' *Pastoralism: Research, Policy and Practice*, 2(1).

82 Sax, N. et al. (2022) How does climate exacerbate root causes of livestock-related conflicts in Kenya? *Climate Security Pathway Analysis*, Climate Security, Factsheet, CGIAR Focus Climate Security; Hendrickson, D., Mearns, R. and Armon, J. (1996) 'Livestock Raiding Among the Pastoral Turkana of Kenya: Redistribution, Predation and the Links to Famine' *IDS Bulletin*, 27(3) pp.17-30.

83 Medina, L. et al. (2022) Towards a common vision of climate security in Kenya, *CGIAR Focus Climate Security*.

84 The commercialization of raiding has professionalized pastoralist in raiding, who, along with new non-pastoralist actors, steal cattle in a highly organized manner, loading them onto trucks to be quickly sold at market or slaughtered, even transported across the border to Tanzania or Uganda, before the theft can be tracked. Bond, J. (2014) 'Conflict, Development and Security at the Agro-Pastoral Wildlife Nexus: A Case of Laikipia County, Kenya' *The Journal of Development Studies*, 50(7) pp.991-1008; Eaton, D. (2008) 'The Business of Peace: Raiding and Peace Work Along the Kenya-Uganda border (part I)', *African Affairs*, 107(426) pp.89-110.

85 See Schilling, 'Raiding pastoral livelihoods', supra 81; Mkutu, K. (2001) *Pastoralism and conflict in the Horn of Africa*, Africa Peace Forum, Saferworld, University of Bradford.

86 World Bank Group (2021) *Climate risk country profile: Kenya*.

87 Ong'eta Mose, W. (2021) 'Resources, Climate Change, and Implications to Positive Peace Among the Pastoral Communities in Kenya' in *The Palgrave Handbook of Positive Peace*, Springer, pp.761-774; Campbell, D.J. et al. (2000) 'Land use conflict in Kajiado district, Kenya' *Land Use Policy*, 17(4) pp.337-348.

88 See Schilling, 'Raiding pastoral livelihoods', supra 81.

89 Orindi, V., Nyong, A. and Herrero, M.T. (2007) *Pastoral livelihood adaptation to drought and institutional interventions in Kenya*, UNDP Human Development Report.

90 UN Office for the Coordination of Humanitarian Affairs (2022) 'Kenya drought flash appeal October 2021-October 2022' *Reliefweb* <https://reliefweb.int/report/kenya/kenya-drought-flash-appeal-october-2021-october-2022-revised-may-2022>

Rutoh, L.C. et al. (2019) 'The role of land-related conflicts in shaping pastoralists' livelihoods: Evidence from West Pokot and Laikipia Counties, Kenya' *Sixth International Conference of African Association of Agricultural Economists (AAAE)*, September 23-26, 2019, Abuja, Nigeria; Blackwell, P. (2010) 'East Africa's Pastoralist Emergency: is climate change the straw that breaks the camel's back?' *Third World Quarterly*, 31(8) pp.1321-1338.

91 Raineri, L. (2020) *Dogmatism or Pragmatism: Violent extremism and gender in the central Sahel*, International Alert.

92 See Maystadt, 'Extreme Weather and Civil War', supra 47.

93 World War II is another example of where oil acquisition was a major operational objective. Campaigns included the Anglo-Soviet invasion of Iran in 1941, Japan's invasion of the Dutch East Indies to access embargoes oil in 1942, and the Soviet invasion of Romania's Ploesti oil fields in 1944.

94 Leigh, K. (2014) 'ISIS Makes Up TO \$3 Million a Day Selling Oil, Say Analysts' *ABC news* <https://abcnews.go.com/International/story?id=24814359> See also, Aboites, F. (2015) 'What Keeps ISIS Running: The Funding and Support of a Terror Organization' *Egyptian Streets* <http://egyptianstreets.com/2015/05/11/what-keeps-isis-running-the-funding-and-support-of-a-terror-organization/>

95 Levitt, M. (2014) 'Terrorism Financing and the Islamic State' *Testimony submitted to the House Financial Services Committee, The Washington Institute for Near East Policy* <https://www.washingtoninstitute.org/policy-analysis/terrorist-financing-and-islamic-state>

96 Rácz, A. (2020) 'Band of Brothers: The Wagner Group and the Russian State' *Center for Strategic and International Studies (CSIS)* <https://www.csis.org/blogs/post-soviet-post/band-brothers-wagner-group-and-russian-state>

97 Ibid.

98 BBC News (2023) 'What is Russia's Wagner Group and What has happened to its Leader?' <https://www.bbc.com/news/world-60947877>

99 Lamothe, J. and Maupas, S. (2023) 'Labeling Wagner Group as a terrorist organization could pave the way for more significant sanctions' *Le Monde* https://www.lemonde.fr/en/international/article/2023/05/10/labeling-wagner-group-as-a-terrorist-organization-could-pave-the-way-for-more-significant-sanctions_6026225_4.html

100 Katz, B. et al. (2020) 'Moscow's Mercenary Wars : The Expansion of Russian Private Military Companies' *Center for Strategic and International Studies (CSIS)* <https://russianpmcs.csis.org>

101 Ibid.

102 Thompson, J., Doosee, C. and Bermudez Jr. J.S. (2022) 'Tracking arrival of Russia's Wagner Group in Mali' *Center for Strategic and International Studies (CSIS)* <https://www.csis.org/analysis/tracking-arrival-russias-wagner-group-mali>

103 Parens, R., (2022) 'The Wagner Group's Playbook in Africa: Mali' *Foreign Policy Research Institute (FPRI)* <https://www.fpri.org/article/2022/03/the-wagner-groups-playbook-in-africa-mali/>

104 Fitzpatrick, M. (2022) 'How Russian mercenaries colluded with Khartoum regime to exploit Sudan's gold' *Radio France Internationale (RFI)* <https://www.rfi.fr/en/africa/20221106-how-russian-mercenaries-colluded-with-khartoum-regime-to-exploit-sudan-s-gold> In the CAR, the Russian-affiliated Lobaye Invest SARLU, linked to Wagner, is known to have received concessions for gold and diamond extraction; Serwat, L., Nsaibia, H. and Gurcov, N. (2023) 'Moving Out of the Shadows Shifts in Wagner Group Operations Around the World' *The Armed Conflict Location & Event Data Project (ACLED)*. Another company connected to Lobaye Invest, known as Bois Rouge, exports forests and timber resources; Olivier, M. (2023) 'CAR – Cameroon: An investigation into the Wagner Group's African financial model' *The Africa report* <https://www.theafricareport.com/275235/car-cameroon-an-investigation-into-the-wagner-groups-african-financial-model/>

105 Donovan, K., Nikoladze, M., and Murphy, R. (2023) 'Global Sanctions Dashboard: Sanctions alone won't stop the Wagner Group' *Atlantic Council* <https://www.atlanticcouncil.org/blogs/econographics/global-sanctions-dashboard-sanctions-alone-wont-stop-the-wagner-group/>

106 African Defense Forum (2023) 'New Report Examines Russian Wagner Group's Expansion Across Africa' <https://adf-magazine.com/2023/03/new-report-examines-russian-wagner-groups-expansion-across-africa/>

107 Kobusingye, N.D., Van Leeuwen, M. and Van Dijk, H. (2016) 'Where Do I Report My Land Dispute? The Impact of Institutional Proliferation on Land Governance in Post-conflict Northern Uganda' *Journal of Legal Pluralism and Unofficial Law*, 48(2) pp. 238-255; Sülle, E. (2015) 'Land Grabbing and Agricultural Commercialization Duality: Insights from Tanzania's Transformation Agenda' *Afrique e orienti*, XVII(3) pp. 109-123.

108 Pointer, R., Sulle, E. and Ntauzi, C. (2023) 'Smallholder Views on Chinese Agricultural Investments in Mozambique and Tanzania in the Context of VGGTs' *Sustainability*, 15(2) p.1220.

109 Maiyo, K. J. et al. (2016) *Governing Commercial Pressures on Land in Africa: What is the role of local government?*, Working Paper 01, LANDac, Social Science Research Network <https://doi.org/10.2139/ssrn.3600434>.

110 Knight, R. (2016) 'Protecting land and community resources in Africa' *Devex* <https://www.devex.com/news/protecting-land-and-community-resources-in-africa-87746>

111 Kobusingye, N.D., Van Leeuwen, M. and Van Dijk, H. (2017) 'The Multifaceted Relationship between Land and Violent Conflict: The Case of Apaa Evictions in Amuru District, Northern Uganda' *Journal of Modern African Studies*, 55(3) pp.455-477.

112 Van Leeuwen, M. et al. (2014) 'The Continuities in Contested Land Acquisitions in Uganda', in Ansom, A. and Hillhorst, T. (eds.) *Losing your Land: Dispossession in the Great Lakes*, African Series, Boydell and Brewer.

113 Canadian Women's Foundation (2022) 'Input for the Special Rapporteur on Violence Against Women on Violence Against Women in the Context of Climate Crisis' p.3; Ezer, T. and Saumure, B. (2022) 'The Climate Crisis and Gender-Based Violence against Indigenous Peoples: Impacts and Responses' *Submission to the Special Rapporteur on Violence Against Women, Its Causes and Consequences*, p.3.

114 Fian International (2021) 'The Impact of Climate Change and Environmental Degradation in the Sur Zone of Honduras and its Repercussions on the Right to Food and Nutrition as a form of Violence Against Artisanal Fisheries'

115 See Kobusingye, 'The Multifaceted Relationship between Land and Violent Conflict', supra 111.

- 116 Snyder, K.A. et al. (2020) "Modern" farming and the transformation of livelihoods in rural Tanzania' *Agriculture and Human Values* 37(7) pp.33–46.
- 117 Siakor, S.K. and Knight, R.S. (2012) 'In Liberia a Nobel Laureate's problem at home' *The New York Times* <https://www.nytimes.com/2012/01/21/opinion/in-liberia-a-nobel-laureates-problem.html>
- 118 Ibid.
- 119 Chalk, F. (1967) 'The Anatomy of an Investment: Firestone's 1927 Loan to Liberia' *Canadian Journal of African Studies*, 1(1) pp.12–32.
- 120 Kersten, M. (2012) 'Legacies of injustice in Liberia transitional justice and economic crimes' *Justice in Conflict* <https://justiceinconflict.org/2012/02/16/legacies-of-injustice-in-liberia-transitional-justice-and-economic-crimes/>
- 121 Jung, S. and Akinyemi, T. (2023) 'Large-Scale Land Acquisitions, Local Resource Access, and Labor Allocation in Liberia' *SSRN Electronic Journal* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4374531
- 122 Ibid.
- 123 Ibid.
- 124 Ibid.
- 125 See Kersten, 'Legacies of injustice in Liberia transitional justice and economic crimes', supra 120.
- 126 Global Witness (2018) *Power to the people? How companies are exploiting community forestry in Liberia.* <https://www.globalwitness.org/en/campaigns/forests/power-people/>.
- 127 Ibid.
- 128 Ibid.
- 129 Kepe, T. and Suah, N. (2021) 'Land and Fragility of Peace in Postwar Liberia: Concessions and Conflicts in the Midst of Poverty' *Journal of Peacebuilding and Development*, 16(3) pp.377–381.
- 130 Ibid.
- 131 Ibid.
- 132 Loong, S. (2022) 'The Karen National Union in post-coup Myanmar' *Stimson Center* <https://www.stimson.org/2022/the-karen-national-union-in-post-coup-myanmar/>
- 133 Here, the KNU exercises its administrative powers through fourteen departments, including a police force, judiciary, health and education system and forestry service. Ibid.
- 134 Ibid. Karen leaders envisioned their state as part of a federation of ethnic states in a democratic Union of Burma. See also Jolliffe, K. (2016). *Ceasefires, Governance and Development: The Karen National Union in times of change*, The Asia Foundation. However, the Burmese government refused and instead attempted to impose centralized rule across the country.
- 135 See Loong, 'The Karen National Union in post-coup Myanmar', supra 132.
- 136 In January 2012, the KNU reached its first stable bilateral ceasefire with the Burmese military since hostilities began in 1949. See Jolliffe, *Ceasefires, Governance and Development*, supra 134. Despite being called a 'nationwide' ceasefire, the agreement faced contention within the Karen community for its lack of inclusivity. Brenner, D. (2017) *Authority in rebel groups: identity, recognition and the struggle over legitimacy*, *Contemporary Politics*, 23(4), pp. 408–426.
- 137 At least 200 documented skirmishes with the Myanmar Armed Forces (Tatmadaw). See Loong, 'The Karen National Union in post-coup Myanmar', supra 132.
- 138 Staff (2013) 'Karen National Union (KNU) Myanmar Peace Monitor' <https://mmpeacemonitor.org/1563/knu/>; Burma Environmental Working Group (2017) *Resource federalism: a roadmap for decentralized governance for Burma's natural heritage.* <https://landportal.org/library/resources/obi98575/resource-federalism-roadmap-decentralised-governance-burma%E2%80%99s-natural>.
- 139 Also forced labour, destruction of villages, extrajudicial killing, torture and rape. Karen Human Rights Group (1998) 'Killing the Shan: The continuing campaign of forced relocation in Shan State' <https://khr.org/1998/05/khrg9803/killing-shan-continuing-campaign-forced-relocation-shan-state> KHRG (2017) 'Foundation of Fear: 25 years of villagers's voices from Southeast Myanmar' <https://khr.org/2017/12/foundation-fear-25-years-villagers-voices-southeast-myanmar>; The International Human Rights Clinic at Harvard Law School concluded in a 2014 report that Burma's generals could be guilty of war crimes and crimes against humanity for their actions against Karen civilians. IHRC (2014) 'Legal Memorandum: War Crimes and Crimes against Humanity in Eastern Myanmar' *ReliefWeb* <https://reliefweb.int/report/myanmar/legal-memorandum-war-crimes-and-crimes-against-humanity-eastern-myanmar>
- 140 See IHRC (2014) 'War Crimes and Crimes against Humanity in Eastern Myanmar', supra 139; KHRG (2022) *Undeniable: War crimes, crimes against humanity, and 30 years of villagers' testimony in rural southeast Burma* <https://www.khr.org/2022/12/undeniable-war-crimes-crimes-against-humanity-and-30-years-villagers%E2%80%99-testimonies-rural> In 2016, the Special Rapporteur on the rights of Indigenous Peoples noted that "the Karen have experienced forced evictions, destruction of housing and crops, arrests and enforced disappearances." Tauli-Corpuz, V. (2016) *Rights of indigenous peoples*, A/71/229, UN General Assembly.
- 141 "Some people in Kaw Thay Ghu have been continuously displaced from their ancestral villages for over 40 years, undermining villagers' ability to uphold obligations to the spirits and to practice environmental relations as in the past." Paul, A. (2018) "With the Salween Peace Park, We Can Survive as a Nation": *Karen Environmental Relations and the Politics of an Indigenous Conservation Initiative*, MA Thesis, York University, p.91.
- 142 The Vacant, Fallow and Virgin Lands Management Law (2019). "The law, which comes into effect on 11 March 2019, requires anyone occupying or using "vacant, fallow, or virgin" land to apply for a permit to use the land for 30 years or face eviction and up to two years in jail." *Special procedures media* (2019) 'Myanmar: New land law could have disastrous impact on ethnic minorities' *OHCHR media centre* <https://www.ohchr.org/en/news/2019/03/myanmar-new-land-law-could-have-disastrous-impact-ethnic-minorities>
- 143 Karen Peace Support Network (2018) *The Nightmare Returns: Karen hopes for peace and stability dashed by Burma Army's actions* <https://www.burmalink.org/the-nightmare-returns-karen-hopes-for-peace-and-stability-dashed-by-burma-armys-actions/>
- 144 Karen Human Rights Group in numerous reports.
- 145 See *Special procedures media* (2019) 'Myanmar: New land law could have disastrous impact on ethnic minorities', supra 142.
- 146 Woods, K. (2011) 'Ceasefire capitalism: military-private partnerships, resource concessions and military-state building in the Burma-China borderlands' *The Journal of Peasant Studies*, 38(4) p.747. Karen Peace Support Network (KPSN) accuses the Burmese military of "taking advantage of the ceasefire to accomplish what it was unable to do during earlier periods of widespread armed conflict: expand and upgrade its military infrastructure and capability to seize and control Indigenous Karen people's lands." See KPSN (2018) *The Nightmare Returns: Karen hopes for peace and stability dashed by Burma Army's actions*, supra 143, p.3.
- 147 See KPSN (2018) *The Nightmare Returns: Karen hopes for peace and stability dashed by Burma Army's actions*, supra 143.
- 148 Committee on the Elimination of Discrimination against Women (2018) 'General Recommendation No. 37 on Gender-related dimensions of disaster risk reduction in the context of climate change' *CEDAW/C/GC/37*. See also CEDAW (2009) 'Statement of the CEDAW Committee on Gender and Climate Change' https://www2.ohchr.org/english/bodies/cedaw/docs/gender_and_climate_change.pdf Office of the U.N. High Commissioner for Human Rights (2019) *Summary of the Panel Discussion on Women's Rights and Climate Change: Climate Action, Good Practices and Lessons Learned*, A/HRC/42/26, UN General Assembly.
- 149 IUCN (2015) *Gender and climate change: Strengthening climate action by promoting gender equality*, Issues brief.
- 150 UN Women (2022) 'How gender inequality and climate change are interconnected' <https://www.unwomen.org/en/news-stories/explainer/2022/02/explainer-how-gender-inequality-and-climate-change-are-interconnected> UN WomenWatch (2009) *Women, Gender Equality and Climate Change, Fact Sheet* https://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf
- 151 See generally, Desai, B.H. and Mandal, M. (2021) 'The Role of Climate Change in Exacerbating Sexual and Gender-Based Violence against Women: A New Challenge for International Law' *Environmental Policy and Law*, 51(3) pp.137–157.

152 See e.g., Tayton, S. and Campo, M. (2015) Domestic and family violence in regional, rural and remote communities: an overview of key issues, Australian Institute of Family Studies.

153 World Vision (2022) 'Submission: Report on violence against women and girls in the context of the climate crisis, including environmental degradation and related disaster risk mitigation and response', p.1.

154 UNFPA (2022) 'Consolidated Submission to inform the Special Rapporteur's report on violence against women and girls in the context of the climate crisis, including environmental degradation and related disaster risk mitigation and response to be presented at the 77th session of the General Assembly', pp.3-4; Hall, M.L. and Faramand, T.H. (2022) 'Input for the report on violence against women in the context of climate crisis' WI-HER, pp. 1-2; Plan International (2022) 'Submission to the Special Rapporteur on Violence Against Women, its Causes and Consequences', p.3; Humaniam (2022) 'Call for inputs – Report on violence against women and girls in the context of the climate crisis, including environmental degradation and related disaster risk mitigation and response', p.7.

155 Vithanage, A. (2021) 'Addressing Correlations Between Gender-Based Violence and Climate Change: An Expanded Role for International Climate Change Law and Education for Sustainable Development' Pace Environmental Law Review, 38(2) p.6.

156 Anglican Consultative Council (2022) 'Submission from the Anglican Consultative Council, an organization in special consultative status with the Economic and Social Council of the United Nations', p.2.

157 Plan International (2022) 'Submission to the Special Rapporteur on Violence Against Women, its Causes and Consequences', p.3.

158 International Work Group for Indigenous Affairs (2022) 'Written submission to the UN Special Rapporteur on Violence against Women, its causes and consequences', p.2.

159 UN Food and Agricultural Organization (2018) The Gender Gap in Land Rights.

160 See UN WomenWatch (2009) Women, Gender Equality and Climate Change, supra 150; Humaniam (2022) 'Call for inputs – Report on violence against women and girls in the context of the climate crisis', supra 154, p.4.

161 See UN Women (2022) 'How gender inequality and climate change are interconnected', supra 150.

162 Alsalem, R. (2022) Report of the Special Rapporteur on violence against women, its causes and consequences, A/HRC/50/26, UN Human Rights Council, para. 28.

163 Ibid, para. 31.

164 Ibid, para. 32.

165 Tyrou, E. (2016) 'The Symbol of Berta Cáceres Continues to Expose Criminal Coup Regime and its Deadly Extractive Formula for Honduras' Council on Hemispheric Affairs (COHA) <https://coha.org/the-symbol-of-bertha-caceres-continues-to-expose-criminal-coup-regime-and-its-deadly-extractive-formula-for-honduras/>; Banktrack (2022) 'Agua Zarca hydro project' https://www.banktrack.org/project/agua_zarca_dam

166 See Banktrack (2022) 'Agua Zarca hydro project', supra 165.

167 Méndez, M.J. (2018) "'The River Told Me": Rethinking Intersectionality from the World of Berta Cáceres' Capitalism Nature Socialism, 29(1) pp. 7-24.

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