



KEY THEMES AND CASE STUDIES

CLIMATE SECURITY

By Dr Tim Clack, Director
Climate Change & (In)security Project

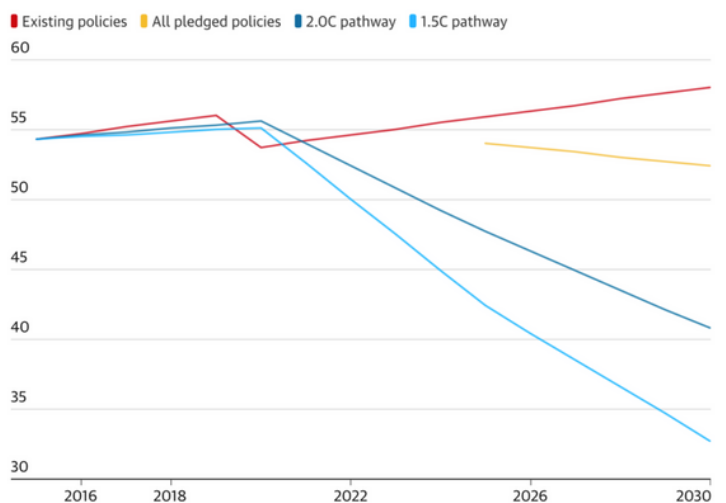
Overview

Anthropogenic climate change is happening and accelerating. As a consequence, there will be physical, socio-political and economic transformations to parts of the world. With implications for national security, there will be water stress and climate shocks, cascade threats to agricultural regimes, spikes in food prices, stresses to food production and food logistics, emergent energy insecurities, and increases in pest and disease presence. In certain parts of the world, in turn, this will result in shifts in diplomatic relationships, strategic outlooks, population displacement, endemic famine, and conflict.

Climate Forecast

As the graph below shows, global behavioural change and policy response to cut emissions are both currently inadequate. In 2021, the IPCC reported a 1.1°C global average temperature increase since 2015, the date of the Paris Agreement. If the world reached a state of net zero by 2050, this could still equate to a 2.8°C rise.

Annual emissions in billions of tonnes CO₂



(Credit: UN Environment Programme)

Dr Timothy Clack is the Chingiz Gutseriev Fellow at the School of Anthropology and Museum Ethnography, University of Oxford. His research focuses on certain responses to climate and environmental change, including conflict and migration. Prior to and alongside his academic career, he has delivered a number of senior and specialist roles for the UK Cabinet Office, Foreign and Commonwealth Office, and Stabilisation Unit.

This report was written to accompany a brief to the All-Party Parliamentary Group for Climate and Security. The brief was delivered on 6 March 2023 in the Jubilee Room in Parliament.

Military Operations

The British military has been called upon to assist with Military Aid to the Civilian Authority (MACA) taskings related to climate change, e.g. emergency flood relief efforts in Somerset in 2014, Yorkshire in 2015, Lincolnshire in 2019, Yorkshire in 2020, and London in 2021. This trend is mirrored around the world. In the past 10 months, militaries have been involved in flood and wildfire response in the Emirates, South Korea, Uganda, Iran, Pakistan, the US, Slovakia, Slovenia, Turkey, Germany, Spain, France, China, Cyprus, Portugal, Canada, Morocco, Mexico, Croatia, Greece, and Australia. This is an escalatory trend.

The British military has also been called upon to deliver Humanitarian and Disaster Response (HADR) operations around the world. As MACA and HADR taskings amplify, the more attention, resource, and kit becomes deflected from the core business of deterrence and warfighting.

Migration

In order to survive in the absence of food and water, people will relocate. Migration is an adaptation strategy. Throughout history it has been the means to find better economic conditions and escape conflict and persecution. There is often a perception of impermanency to the situation on the parts of both the receiving country and migrants. Climate change migration is different because, if your former home is uninhabitable, the possibility of return is remote.

The UN Secretary General, António Guterres warned recently of a climate-related 'mass exodus' of 'biblical scale'. The UN's forecasted figure for global climate migration is one billion by 2050. Many of these people will move within their own countries – internal displacement – and others to neighbouring states. But factors such as cultural, diaspora and language links, colonial histories, and prospects, will mean the UK is seen as an attractive destination.

There is the potential for migration-related strategic shock. Migration has already shown itself to be a divisive political issue in many countries. Wherever climate migrants go at scale, they hold the potential to exacerbate pre-existing local tensions. As such, the optimal solution addresses the drivers of migration at source. This means upstream capacity building and resilience programmes that reduce conflict, preserve environments, and provide economic and subsistence prospects.

Conflict

Numerous studies have indicated that climate change makes conflicts more likely. This is particularly the case when associated with conditions of economic and sectarian strain. Researchers have found that a rise in average annual temperature by 1°C leads to a 4.5% increase in civil war over the same period. The 2011 Arab Spring was, in part, underpinned by multi-year droughts, soaring international food prices, and unemployment. Micro-conflicts also have the potential to scale.

Studies have shown a link between temperature rises and violence. Research on 'heat island effects' in North American, South America and Europe, for example, has demonstrated how urban centres – with their higher populations, concrete surfaces, and pollution – can create inversion layers and trap heat, with implications for rates of violence and homicide.

Water Security

The UN estimates that 1.8 billion people around the world will be living in conditions of absolute water scarcity by 2025 (i.e. not enough water to sustain both the human population and natural ecosystem). Two-thirds of the world are forecast to live under conditions of water stress (i.e. lack of adequate supply, quality and accessibility) in the same timeframe. It is likely that access to water will drive conflicts in the next two decades. Strategic stress over water is already evident, e.g. tension between Ethiopia and Egypt over the Grand Ethiopian Renaissance Dam.

Water is also already used as a weapon in assorted contexts. Malign actors have, for example, poisoned wells, destroyed irrigation systems, and cut off supplies in order to intimidate and control communities. Mindful of human security concerns, climate change has been shown to increase the distances women and girls travel to access water supplies. This makes them more vulnerable to sexual assault and also results in girls missing school. With implications for human security, studies have also highlighted examples of girls being traded or married for resources during times of peak scarcity.

Food Security

Based on a warming scenario of between 2-2.5°C, the IPCC have shown that by 2070 large parts of the world will become uninhabitable. This will drive displacement, ferment social unrest, and undermine food security in other parts of the world.

Some nations are already positioning themselves to secure long-term access to food. China, for example, aims for self-sufficiency in the face of geopolitical uncertainty. Nonetheless, it is also buying up food production infrastructure and agricultural areas overseas, including in parts of Africa, Asia and North America.

Food can also be weaponized, with access used to punish communities and expose the ineffectiveness of government and/ or external agencies. In certain contexts, NGOs pay fees to VEOs in order to distribute aid. In other parts, VEOs misappropriate aid and distribute it themselves to win 'hearts and minds'.

Energy Security

The need to transition away from fossil fuels is central to net zero ambitions. However, the move to renewables is uneven and presents its own security challenges. The minerals and metals required in the renewable energy industry are concentrated in certain parts of the world, e.g. China and DRC. Extraction creates its own environmental damage, has been linked to exploitative labour practices, and has led to local resistance. The price has also proven volatile, e.g. lithium prices have risen by as much as 600% over the past year.

As OPEC demonstrated with petroleum in the 1970s, the control of rare earths holds the potential to create new power bases, relationships and dependencies. The global transition to cleaner energy is a strategic risk to fossil fuel economies, such as Russia and the Gulf states.

Case Study 1: The Sahel

The effects of climate change shape, proliferate and amplify threats, interacting in complex ways with pre-existing vulnerabilities, such as socioeconomic inequality, fragile governance and inter-group tensions. Climate change in Africa's Sahel region is amplifying existing social tensions, overwhelming local infrastructure, and magnifying competition. The UN reports that the temperature increase in the Sahel is forecast to be 1.5 times higher than the global average over the next decade.

This is an existential problem for many countries in the region, such as Mali, where destructive weather already jeopardises agricultural production. Agriculture depends on a level of predictability to the climatic regime and this is ever less present. With a population growth rate of nearly 3%, Mali is also one of the youngest and fastest-growing populations in the world. The country is also already seeing significant rural to urban migration due to water and food insecurity and conflict. Over the past two decades, there has been a steady southwards relocation of populations engaged in fishing, horticulture and pastoralism. This has, in turn, exacerbated tensions between various ethnic groups, such as the Dogon and Fulani. Violent clashes over grassland, water sources and local infrastructure have become common.

Numerous communities in the region have set up 'self-protection' militias and these have been responsible for many attacks and abuses. Moreover, in various localities, threats to livelihoods have facilitated recruitment by VEOs. Terrorist groups such as Boko Haram, Islamic State West Africa (ISWA), Jamaat Nusratul Islam wal-Muslimin (JNIM) and Katiba Macina pose an ongoing threat in the region, often with the intent and capabilities to mount complex attacks against government and civilian targets.

Case Study 2: The High North

In the Arctic, areas are heating three times faster than the global average and melting sea ice is amplifying strategic competition as the accessibility of resources improves, particularly mineral and fossil fuel deposits. The result is militarisation to a level never seen before in the region.

New trade routes are emerging. The Northern Sea Route (NSR), for example, is projected to rival Suez Canal traffic and shift trade between Asia and Europe. Russia has declared the NSR 'a national transportation corridor' as a means to ensure exclusive access to it. Others, such as China and the US, however, have indicated that they regard it as an 'international domain'. In reference to the 'Polar Silk Road', China has started to refer to itself as a 'near Arctic state', something that, in absolute terms, is geographically false.

In the past few years, Russia has invested in defence infrastructure, including airfields, radar facilities, railways and ports. Moreover, Russian aircraft have been regularly intercepted in Alaskan and Scandinavian airspace and a fleet of 50 icebreakers has been amassed. The Russians have also flown MiG-31 Foxhound aircraft over the north pole, surfaced nuclear submarines through the ice at the Franz Josef Land archipelago and conducted large-scale exercises of their Arctic Motorised Brigade. In concert, this posturing informs Russia's various competitors that it is present and, if required, will use force to defend its strategic interests.

NATO has been similarly present in the contest. US President Joe Biden, for example, relaunched cold weather warfare training programmes. The US Airforce despatched Lancer bombers to northern Norway bringing Russian military targets within reach. Denmark has also upgraded its radar facilities in Greenland. Russia's invasion of Ukraine has amplified tensions and also seen Russia suspended from the Arctic Council.

Case Study 3: Ukraine

Whilst climate change was not a driver of the Russian invasion of Ukraine, climate factors have shaped the context. Through the Nord Stream 2 pipeline, for example, Russia had the means to solidify its energy dominance in Europe and separate German interests from those of other NATO members. More generally, the global transition to 'cleaner energy' was (and remains) a strategic risk to Russia, with the potential for huge economic damage. It is worth highlighting here that Russia now has control of the major lithium, cobalt and nickel deposits in Ukraine, which are particularly rich in the Donbas area. (The Russian invasion derailed Australian, Chinese and European companies securing the extraction rights to these deposits.)

Timing is also relevant. It was no coincidence that the Russian invasion of Ukraine took place when European energy demands were greatest. The comparatively warm recent winter has, in fact, helped the West navigate the energy crisis and undermine Russia's attempt to weaponize energy.

The environmental damage from the Russia-Ukraine War has been significant. At the G20 in Bali in November, Ukrainian President Volodymyr Zelenskyy described some of the environmental impacts of the war, including atmospheric pollution from burnt oil depots and chemical plants. Millions of hectares of agricultural land and forests are also now contaminated. The climate damage from the ongoing military actions of both sides has not been calculated but is clearly substantial.