

Understanding the Security Impacts of Climate Change

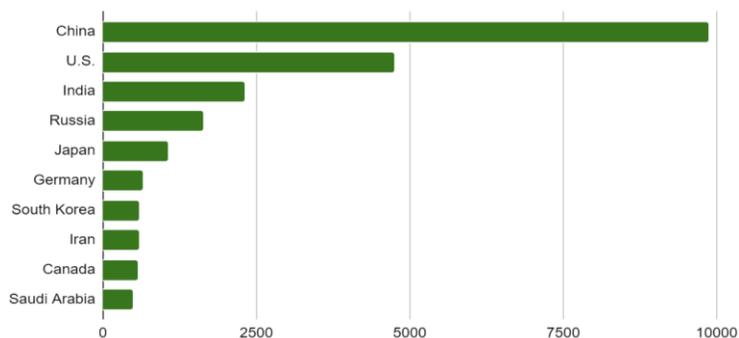
Understanding Climate Change

According to the United Nations, climate change refers to “long-term shifts in temperature and weather patterns.” Since the 1800s, humans have been the driving force behind climate change due to the burning of fossil fuels such as coal, gas, and oil. This, combined with deforestation and continued industrialization contribute to rising greenhouse gas emissions, and, in turn, global temperatures.

As emissions continue to rise, global temperatures are only expected to continue increasing. Most regions around the world have experienced record high temperatures in recent years. As emissions increase and temperatures rise, a plethora of issues have developed into pressing global concerns. For example, droughts, water scarcity, flooding, wildfires, and rising sea levels are just some issues exacerbated by global warming. Global emissions are expected to increase by 14% over the decade. Scientists agree that to mitigate the effects of global warming, the global temperature can only increase by 1.5 °C. To successfully do this by 2030, global emissions would need to be cut by 45% compared to 2010 levels.¹

The consensus of the scientific community is that climate change is a dire issue that must be addressed globally. The effects of greenhouse gas emissions affect everyone in the world; however, studies show that ten countries produce over two-thirds of the world’s emissions.² Scientists agree that to combat climate change, the world must drastically reduce emissions and fossil fuel production within the next decade. Climate change has a tremendous impact globally. The consequences to the environment have been concerning and will only continue to pose great threats to nations. Less often considered, climate change has led to international security risks that affect the political and economic stability of many nations.³

Top 10 Countries with the Highest Greenhouse Gas Emissions (in million metric tons, 2019 data):



¹ “Progress towards the Sustainable Development Goals.” *United Nations Economic and Social Council*. https://sustainabledevelopment.un.org/content/documents/29858SG_SDG_Progress_Report_2022.pdf.

² “Greenhouse Gas Emissions by Country 2022.” *World Population Review*. <https://bit.ly/3fd2zit>.

³ “What is Climate Change?” *United Nations*. <https://www.un.org/en/climatechange/what-is-climate-change>.

Climate Change as a “Threat Multiplier”

In several national and international reports, it is clear that climate change acts as a ‘threat multiplier.’ In other words, the consequences of climate change exacerbate existing issues and oftentimes, make them significantly more severe.

Domestic Issues

As emissions continue to increase globally and temperatures continue to rise, nations will experience more domestic issues. These issues include but are not limited to: infrastructure instability, flooding in coastal areas, food production and quality, water shortages, the spread of waterborne and foodborne diseases, and increased health issues. Many of these issues have the potential to impact local, regional, and national political and economic stability.

International Security Risks

Inter- and Intra-State Conflict

For decades, it was difficult for researchers to directly link climate change and conflict. However, in recent years, an increasing number of studies and papers have demonstrated a relationship between climate change and conflict. Climate change can be a factor that leads to or exacerbates conflict. Recently, connections have been made between climate change and conflict in several situations including the Syrian, Libyan, and Yemen civil wars, the rise of the so-called Islamic State, and the conflict in South Sudan.⁴

A 2015 paper found that changes in temperature and precipitation patterns increase the risk of conflict. A 1 °C increase in temperature increases conflict between individuals (murder, assault, etc.) by 2.4% and conflict between groups (riots, civil war, etc.) by 11.3%.⁵ Another study found that in Africa, a significant decrease in rainfall increases conflict risk by 35% for herding communities. Similarly, a 1 °C increase in temperature leads to a 54% increase in conflict risk for African communities where farmers and herders coexist.⁶ Another major study found several places specifically at risk of conflict as the consequences of climate change continue to grow. In South Asia, sub-Saharan Africa, and East Africa increased migration is anticipated to occur, leading to increased tension and conflict. Additionally, Europe has been identified as a place where conflict may occur, largely due to an increase in immigrants from other regions.⁷

Terrorism Activity

In a 2021 UN meeting, a member state highlighted the fact that climate change’s effects and resource conflicts can provide new opportunities for terrorists to exploit. Interestingly, at this meeting, the UN Security Council also faced criticism for failing to adequately address terrorist activity in Africa that

⁴ “5 Recent Conflicts That Were Made Worse by Climate Change.” *Global Citizen*. <https://bit.ly/3DUvpP0>.

⁵ “Climate and Conflict.” *The Annual Review of Economics*. <https://bit.ly/3UwFZl4>.

⁶ “Does climate change cause conflict?” *International Growth Centre*. <https://bit.ly/3DX47aH>.

⁷ “Climate change and its possible security implications.” *United Nations General Assembly*. <https://bit.ly/3ReRbjk>.

has been exacerbated by climate change. Multiple delegates also questioned whether the UN Security Council was the appropriate body to discuss these issues and act.⁸

The Lake Chad Basin in West Africa is an ideal example of how climate change effects can lead to or exacerbate terrorism threats. Lake Chad is one of Africa's largest lakes and supports the livelihoods of tens of millions of people in Chad, Cameroon, Niger, and Nigeria. Since the 1960s, though, Lake Chad has lost 90 percent of its volume. At the same time, this region has faced significant population growth. Coupled together, the situation in this region has led to agricultural disruptions, massive youth unemployment, and poverty. As climate change occurs, the lake's resources have dwindled, leaving millions of people and their economic livelihoods at risk. This has contributed to increased extremist violence and terrorism in the region, including the rise of Boko Haram and the Islamic State of the West African Province.⁹

Global Economic Instability

As climate change continues, domestic economies and the global economy are greatly at risk. Higher temperatures, an increase in sea levels, and extreme weather events will impact infrastructure, human health, and productivity, and negatively impact economic sectors including agriculture, fishing, tourism, and forestry. The energy demand will increase as power generation becomes more unreliable. Water supplies will become strained in many cases. All these factors put economies at risk.¹⁰ A 2018 report shows that India, China, Saudi Arabia, and the United States would be the countries most greatly affected economically by climate change. Today, climate change is already having economic effects. In just three years, reports show that climate disasters cost North America \$415 billion, mostly due to wildfires and flooding. Lost human productivity will also have a significant impact on the economy. As extreme weather events and temperatures increase, estimates show that hundreds of billions of dollars will be lost in the global economy.¹¹

Loss of Territory and Statelessness

In Small Island Developing States (SIDs), rises in sea levels pose an extreme risk to millions of people and their livelihoods. In the Caribbean and Pacific Islands, more than half the population resides within 1.5km of the shore. Nearly all of these nations' international airports, roads, and capital cities are also located this close to shorelines. For the Maldives, 80 percent of the country is less than one meter above sea level. Reports indicate that the Maldives could disappear over the next few decades.

The issue of statelessness has not yet arisen; however, international law indicates that statelessness should be prevented. There are no clear guidelines for handling statelessness if it were to occur. It is not clear what the legal status of these individuals or governments would be. When considering how the international community should address this issue, it may be prudent to briefly examine a similar historical example. In the late nineteenth century, Icelanders left Iceland for

⁸ "People, Countries Impacted by Climate Change Also Vulnerable to Terrorist Recruitment, Violence, Speakers Tell Security Council in Open Debate." *United Nations Meetings and Coverage*. <https://press.un.org/en/2021/sc14728.doc.htm>.

⁹ "Climate change, conflict: What is fueling the Lake Chad crisis." *Down to Earth*. <https://bit.ly/3fnMy9K>.

¹⁰ "How Climate Change Impacts the Economy." *Columbia Climate School*. <https://bit.ly/3BNjNug>.

¹¹ "Country-level social cost of carbon." *Nature Climate Change*. <https://www.nature.com/articles/s41558-018-0282-y>.

environmental and social reasons. They entered an agreement with the Canadian government, were given land, given dual citizenship, and set up a provisional government. Eventually, this community was fully integrated into Canada.¹²

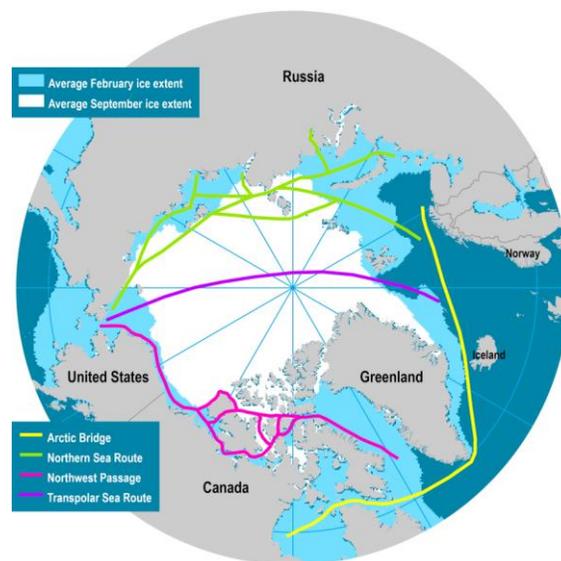
Refugee Concerns and Internally Displaced Persons

One significant consequence of climate change is the risk of massive population displacement. Unlike other types of refugees, for example, those of war, environmental refugees could face permanent displacement. Forecasts show that by 2050, the number of people who may migrate due to climate change and environmental degradation will be between 50 and 350 million. This forecast also indicates that much of this migration will occur within national boundaries. Recent internal relocations have occurred in numerous SIDs including Vanuatu, Micronesia, and Papua New Guinea.

While the 1951 UN Convention relating to the Status of Refugees exists as a framework, there is no legal or internationally accepted guideline for people who choose or are forced to migrate due to environmental concerns. While these people are often referred to as ‘environmental refugees,’ there is minimal protection in place for these individuals. This is especially true for those who potentially could not return to their home country, as may happen with submerged small island nations.¹³

Arctic Access

The changes occurring in the Arctic Ocean have the potential to greatly affect the natural environment and geopolitical relationships. Ocean temperatures have steadily increased over the past several decades which has contributed to a decline in sea ice levels. As arctic ice melts, new trade routes will become accessible and the possibility of mineral, oil, and gas extraction is unlocked. A 2008 study estimated that the Arctic holds nearly 25 percent of the world’s undiscovered petroleum. An important note here is that there are eight countries considered Arctic states—the United States (Alaska), Canada, Denmark (Greenland), Norway, Finland, Iceland, Sweden, and Russia. Additionally, the Arctic Council, an organization of these eight members, is considered the leading authority on these issues.¹⁴



In 2007, Russia planted its flag at the North Pole and since then, several countries and organizations have announced policies relating to the Arctic. Major Arctic policies were announced by Canada, the United States, Russia, the Nordic countries, NATO, and the European Union in the years that followed. Most of these policies stressed the importance of environmental security, international cooperation, and the protection of national interests. In recent years, Russia has

¹² “Country-level social cost of carbon.” *Nature Climate Change*. <https://www.nature.com/articles/s41558-018-0282-y>.

¹³ “Country-level social cost of carbon.” *Nature Climate Change*. <https://www.nature.com/articles/s41558-018-0282-y>.

¹⁴ “The National Security Impacts of Climate Change.” *Environmental and Energy Institute*. <https://bit.ly/2WEDs9o>.

invested heavily in the Arctic, extracting natural resources and building northern infrastructure to support more international trade. China, considering itself a “near Arctic state,” has also increased its investments heavily in the region. They also strengthened their interest in the region by signing a free trade agreement with Iceland. Overall, countries have been cooperative regarding issues relating to the Arctic. However, there are a few points of concern or disagreement. For example, there is a dispute between Canada and other Arctic nations regarding the Northwest Passage. The US, EU, and others believe this is an international waterway while Canada believes it has sole jurisdiction over it. Most experts believe that relations will remain peaceful in the Arctic; however, some experts have warned that this could change as climate change affects the world.¹⁵

Managing Resources and Resource Constraints

Another impact of climate change is water scarcity. Conflicts over water resources have occurred historically and will only continue to get worse and more frequent considering climate change. Reports show that SIDs, North Africa, the Middle East, and South Asia are likely to face water-related issues like water shortages, poor water quality, and flooding by 2040. Water scarcity could also lead to the “weaponization” of water, leading to domestic and international conflict.¹⁶

Agriculture would also be greatly impacted by climate change. UN reports indicate that South Asia and Africa would be most at risk of diminished food production.¹⁷ Today, flooding, drought, and increased heat are already affecting crop yields in several places globally. Studies show that for every 1°C the global temperature increases, there will be a 5-to-15% decrease in overall crop production. Additionally, many common crops including corn, soybeans, wheat, rice, cotton, and oats do not grow well above certain temperatures. Crops will also be affected by a decrease in water availability, increased pests, and increased fire risk. With the risks posed to agricultural industries, costs for producers and food prices for consumers will increase.¹⁸ Looking forward, the effects of climate change could lead to increases in water and food insecurity around the globe. Since water and food are critical for human life, this has the potential to lead to conflict, poverty, and economic insecurity.

Political Instability and Social Unrest

Climate change can contribute to political instability at domestic, regional, and international levels. The issues described above like food shortages, economic issues, and increased violence can lead to social unrest and upheaval. Similarly, many issues caused by or exacerbated by climate change can weaken existing political structures. As more countries face the consequences of climate change, they risk instability and unrest. This in turn can jeopardize the stability of regions and global peace.

Preventing and Responding to Emerging Threats

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body responsible for assessing climate change science and is the leading authority on climate change science. This body creates detailed reports including existing knowledge on climate change (scientific, technical, and

¹⁵ “The Emerging Arctic.” *Council on Foreign Relations*. <https://www.cfr.org/emerging-arctic/#/>.

¹⁶ “The Emerging Arctic.” *Council on Foreign Relations*. <https://www.cfr.org/emerging-arctic/#/>.

¹⁷ Ibid.

¹⁸ Ibid.

socioeconomic), its impact and risks, and options to slow the rate at which climate change is taking place. The IPCC findings are then used to inform all other UN bodies. Their reports are also referenced by international conferences and help to inform national policies.¹⁹

Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) were adopted by all member states in 2015. Many of these goals relate directly to climate change. Each year, reports are generated that assess the success of the international community as it works toward these goals. Some notes from the 2022 SDG progress report are below. The world's forest area is still decreasing but is decreasing at a lower rate—the consensus is that sustainable forest management is improving globally. Additionally, the global vegetation coverage on mountains has remained constant at 73%. By February 2022, over 100 countries committed to reaching land degradation neutrality, and 1 billion hectares of land (roughly the size of the United States) are committed to land restoration worldwide. As of December 2021, 123 countries have adopted national disaster risk reduction plans, an increase from 55 countries in 2015. Similarly, by March 2021, over 80% of developing countries are undertaking measures for national adaptation plans. These plans will enable countries to develop medium- and long-term plans to adapt to climate change and its effects.²⁰

UN Framework Convention on Climate Change (UNFCCC)

The UNFCCC is the parent treaty of both the 2015 Paris Agreement and the 1997 Kyoto Protocol. The main objective of all three is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent catastrophic effects on the environment. In the 2015 Paris Agreement, it was determined that the global temperature cannot rise 1.5 °C above pre-industrial levels. One important responsibility of the UNFCCC is maintaining the registry for Nationally Determined Contributions (NDCs). An NDC is a climate action plan to cut emissions and adapt to the impact of climate change. Today, over 150 countries have submitted an NDC to the UNFCCC. This organization is also responsible for organizing multiple negotiating sessions and an annual climate summit. Most recently, the UN Climate Change Conference (COP27) took place in Egypt in November 2022.²¹

Case Study - Terrorism in Somalia

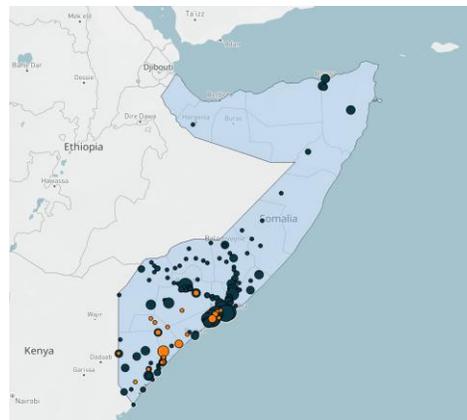
Despite emitting a small portion of the world's emissions, Somalia has faced significant consequences of climate change in recent years. Rising temperatures have contributed to several severe droughts and decreased annual rainfall. In turn, food insecurity, poverty, famine, and economic security have become major issues in Somalia. Climate change has a particularly significant impact on Somalia since a vast majority of its people are herders or farmers and a majority of its gross domestic product (GDP) is from the agricultural industry. As droughts continue, local conflicts have increased over pastoral land as herders fight to sustain their livelihoods. Hundreds of thousands of Somalis have fled to the nation's cities or neighboring countries like Kenya, forced to reside in refugee camps.

¹⁹ *The Intergovernmental Panel on Climate Change*. www.ipcc.ch.

²⁰ *Ibid.*

²¹ *United Nations Climate Change*. <https://unfccc.int/>

Since the mid-2000s, an Islamic terrorist group known as Al-Shabaab (or Al-Shabab) has grown in Somalia. Its objective is to establish an Islamic state. The group entices young men and boys to join their cause with promises of food, protection, and money. The dire economic conditions in Somalia have further accelerated the growth of this group, leading to a national and regional security issue.²² The map to the right shows Al-Shabaab attacks in Somalia in 2020.²³



In 2007, the UNSC authorized the African Union (AU) to lead a peacekeeping mission in support of and to help stabilize the Somali government. This mission is known as AMISOM, or the African Union Mission in Somalia. Since 2010, Al-Shabaab has launched attacks on nations surrounding Somalia as well. For example, they coordinated a bombing in Uganda that killed 74 people. Similarly, Al-Shabaab is responsible for multiple attacks in Kenya, resulting in over 200 deaths.

Starting in 2017, the AU began to withdraw troops from Somalia. In 2019, the UNSC voted to remove all troops and end AMISOM by 2021. While the Covid-19 pandemic stalled these plans, experts warned that a complete withdrawal of peacekeeping troops could jeopardize the Somali government and put it at risk of collapse.²⁴ On March 31, 2022, the UNSC voted for a resolution that would allow peacekeeping forces to remain in Somalia during a transition period. The intention was to ensure the stability of the Somali government and the region. It is prudent to note that in the resolution, Resolution 2628, the Security Council recognizes the role climate change plays in the stability of Somalia. While this was noted, there were no direct operatives to address climate change.

Terrorist activity in Somalia is an ideal example of how climate change acts as a ‘threat multiplier.’ While climate change did not create a terrorist group, it created an environment in Somalia that enabled terrorism to grow more easily. The effects of climate change, like droughts and rising temperatures, have increased tension between Somalis, threatened peoples’ economic livelihoods, and weakened Somalia’s existing political and social structures. This, in turn, made it easier for Al-Shabaab to recruit members and rise to power.

Case Study—Instability in South Asia

South Asia is one of the most at-risk regions in the world regarding climate change. As climate change continues, Bangladesh, India, Pakistan, and Sri Lanka will face flooding and at-risk coastal areas. Afghanistan, Nepal, and Bhutan will face droughts and glacial melts. The Maldives is also at risk of being completely submerged in the next few decades. Almost 700 million people—about half of South Asia’s population—have been impacted by at least one climate disaster in the past decade.

²² “Somalia’s Climate for Crisis.” *The GroundTruth Project*. <https://thegroundtruthproject.org/somalia-conflict-climate-change/>

²³ “CDT Spotlight: Al Shabaab in Somalia.” *ACLEDD*. <https://acleddata.com/2020/05/21/cdt-spotlight-al-shabaab-in-somalia/>

²⁴ “Al-Shabab.” *Council on Foreign Relations*. <https://www.cfr.org/backgrounder/al-shabab>

Climate vulnerability in the region poses significant security risks. Water shortages could increase tensions between India, Pakistan, and China. Since most of Pakistan's water comes downstream from the Indus River in Indian-administered Kashmir, there could also be increased conflict between insurgents in Pakistan and India. A 2018 World Bank study found that by 2050, there may be nearly 40 million climate migrants in the region. This means that mass climate-induced migration could be a trigger for regional destabilization.²⁵

Several projects organized and funded by the World Bank Group (WBG) have found success throughout South Asia. For example, in Bangladesh over 700 km (435 miles) of vulnerable sea embankments have been rehabilitated, over 1,000 cyclone shelters have been constructed, and over 550 km of access roads have been fixed. These measures have greatly improved Bangladesh's cyclone preparedness and will reduce its storm casualty rates. Similarly, wetlands in Colombo, Sri Lanka's capital, have been conserved and revitalized as a nature-based way to combat flooding.

South Asian countries have successfully set up numerous mitigation and adaptation policies to combat the effects of climate change. However, many of these policies have struggled to be effective due to poor monitoring and enforcement, corruption, and insufficient funding. While there have been some successful projects, stronger climate action and more funding are needed in South Asia. This is an ideal example of how climate change is being addressed in an extremely climate-vulnerable region before serious security issues arise.²⁶

Questions to Consider

- 1) To what extent have existing climate change agreements and frameworks been successful?
- 2) To what degree can the United Nations and the international community enforce climate change agreements and protocols?
- 3) Should certain countries be held more accountable for climate change based on their emission totals or per capita emissions? If so, what would this accountability look like?
- 4) What responsibility does the international community have to nations that are especially at risk of climate change's consequences?
- 5) How will climate mitigation and adaptation policies affect existing political structures and economies?
- 6) Will the climate disasters pose a risk to existing peacebuilding efforts (i.e., treaties, agreements, organizations)?

²⁵ "South Asia is on the Front Lines of the Climate Crisis." *Foreign Policy*. <https://bit.ly/3xMRawn>.

²⁶ "SouthAsia4Climate: Solutions to tackle climate change in South Asia." *World Bank Blogs*. <https://bit.ly/3dJpAJC>.