Climate Change

Overview
Climate Change is one of the world’s most urgent issues as it threatens food sources, clean water, and fresh air to breath. According to the United Nations, greenhouse gases occur naturally and are essential to the survival of humans and millions of other living things. Greenhouse gases keep some of the sun’s warmth from reflecting into space and making Earth livable. Due to more than a century and a half of industrialization, deforestation, and large-scale agriculture, emissions in the atmosphere have skyrocketed. These levels have not been seen in three million years. This rise has resulted in weather changes like flooding, forest fires, rising sea levels, and more severe and frequent storms. As populations, economies, and standards of living grow, so too does the cumulative level of greenhouse gas (GHGs) emissions. According to the United Nations, there are some primary well-established scientific links:

- The concentration of GHGs in the earth’s atmosphere is directly linked to the average global temperature on Earth;
- The concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution
The most abundant GHG, accounting for about two-thirds of GHGs, carbon dioxide (CO2), is mostly the product of burning fossil fuels. (UN)

This is an issue impacting the entire world that is addressed by several organizations such as the International Union for Conservation of Nature (IUCN), The Climate Change Performance Index (CCPI), The Intergovernmental Panel on Climate Change (IPCC), and many more regional actors. Countries such as Sweden, Morocco, and Lithuania are leading on the Climate Change Performance Index of 2019. The bottom five are Saudi Arabia, The United States, Islamic Republic of Iran, Republic of Korea, and Chinese Taipei. The results are based on the evaluation of 56 countries with 14 categories that also include subsections of “GHG Emissions,” “Renewable Energy,” “Energy Use,” and” Climate Policy.” Further information regarding regional and country-specific environmental policies will be found later in this guide.

**Historical Context/ Background**
Climate Change has a relatively short history because before the industrial revolution greenhouse gases were not released at such a rapid rate. Starting with the industrial revolution of the 19th century until the present day, changes in the climate have been mainly the result of human activity. (This is a 95% certainty according to the Intergovernmental Panel on Climate Change or IPCC.) The Greenhouse Effect is the naturally occurring process that allows for gases to be regulated; however, due to human activity and increased greenhouse gases, the natural process had been thrown off balance. Climate change is caused by the burning of fossil fuels,
deforestation (since trees and plants naturally store CO2), agricultural practices (farm animals release methane gas, and nitrous oxide is found in synthetic fertilizers), land-use changes, pollution, and other human activities. These actions caused by humans have a direct connection to the changes in climate we experience today. Some of the impacts include; rising global temperatures both on land and sea. Sea levels rising results in sinking land and melting ice. Changes in precipitation brings more droughts and floods. Some of the other results are as follows: glacier and sea ice melt, ocean acidification, erosion, loss of biodiversity/habitat reorganization, increased frequency/severity of extreme weather events, and coral bleaching (due to warmer waters, they expel the algae in their tissue which causes them to lose all color and die). This context is important to keep in mind when the words “Climate Change” are uttered and in regards to government policies or lack thereof regarding the environment.

**Current Situation/ Recent developments**

**Asia**
Climate Change has become an urgent concern in Asia where the **International Union for Conservation of Nature (IUCN)** experts say that Asia will be hit the hardest due to rising sea levels. There are hundreds of millions of people that live in low lying coastal cities in Asia that are at extreme risk. IUCN currently has many programs that will “focus on building the resilience of communities to the impacts of climate change.” (IUCN) These projects focus primarily on the restoration and conservation of natural ecosystems that serve as barriers and protection and prevention to Climate Change. They combine local, traditional, and knowledge of scientific experts to advise governments on how to protect against Climate Change properly. IUCN is currently working on projects in **Bangladesh, Cambodia, China, India, Nepal, Pakistan, Sri Lanka, Thailand, and Vietnam.** As well as in **Myanmar** and initiatives in other countries such as **Afghanistan, Bhutan, Brunei Darussalam, Indonesia, Japan, Democratic People's Republic of Korea, Republic of Korea, Malaysia, Maldives, Mongolia, Philippines, Singapore, and Timor-Leste.**


According to the **Global Climate, Risk Index**, average temperatures in Southeast Asia have risen every decade since 1960. **Vietnam, Myanmar, the Philippines, and Thailand** are among the ten countries in the world most affected by Climate Change in the past 20 years. The World Bank counts **Vietnam** among five countries, most likely to be affected by global warming in the future. Developing countries around the world, but especially in Asia face a double-edged sword battle with Climate Change. They not only are the most at risk for Climate Change impacts, but they also must focus on development. This means that they must change their reliance on coal and oil simultaneously while creating better policies for the environment. According to the **Asian**
Development Bank (ADB), the economic impact from this combination has the potential to shave 11 percent off the region’s GDP by the end of the century. The toll Climate Change causes critical sectors such as, “agriculture, tourism, and fishing—along with human health and labor productivity”—the ADB estimated in a 2015 report. That is far more than its 2009 estimate of a 6.7 percent reduction. Climate Change not only impacts the basic needs of every country but cyclically damages the economies of developing countries the hardest.

Europe
According to the report, ‘Climate change, impacts, and vulnerability in Europe 2012’ the last decade (2002–2011) was the warmest on record in Europe, with European land temperature 1.3°C warmer than the pre-industrial average. Other model projections show that Europe could be 2.5–4°C warmer in the latter part of the 21st Century, compared to the 1961–1990 average. This, among other vital issues such as heatwaves, extreme precipitation, flooding, and the impact on agriculture has alarmed those across Europe. However, due to the vast economic disparity among nations, the actions taken by each country will differ for an issue that impacts everyone. Another vital concern in the European region is the melting arctic ice. For example, the report found that there had been a record low level of sea ice in the Arctic in 2007, 2011 and 2012, falling to roughly half the minimum extent seen in the 1980s. The report also found that the melting of the Greenland ice sheet has doubled since the 1990s, losing an average of 250 billion tons of mass every year between 2005 and 2009. This melting causes further rising sea levels that will also impact global coastlines at varying levels due to the land movement.

The European Union has struggled to create a uniform front on attacking climate change; Poland, the Czech Republic, Estonia, and Hungary recently blocked the EU’s plan to reduce fossil fuel dependence by 2050 due to their economies’ dependence on fossil fuels. For this reason, a unified plan to address Climate Change in Europe is difficult to achieve.

Americas
According to IUCN, the rate of warming in Canada is double that of the global average. Between 1950 and 2010, the average temperature over land in Canada has increased by 1.5°C. Over the next 100 years, the temperature is projected to rise another ~1 to 5°C. Due to Canada’s adverse effects of Climate Change, they have taken action to prevent any more. As a result, an expert on Climate Change, Simone Donner stated that impacts from climate change “do not just affect a single country or localized region, but rather transcend borders.” He pointed to wildfire smoke from Canadian fires drifting into the U.S. and says U.S. communities rely on Canadian hydropower, agriculture, and other resources. To quote, “Climate change does not obey national borders – there is no wall you can build,” Donner says.

In 2017 the World Economic Forum found that China is responsible for 27.2% of greenhouse gas emissions globally, the United States claims 14.6% and Latin American countries combined
only account for roughly 9% of global emissions. **Canada** produces 1.6%, **Mexico** is 1.4%, and **Brazil** has at 1.3% Even though the U.S. is one of the most significant contributors to global emissions of global warming pollution, they withdrew from the Paris Agreement and recent administration changes have reverted environmental policies. In contrast, Latin American countries who are much less responsible for global emissions have persevered in the global agreement, and are strong supporters of the UN’s initiative to reduce emissions. This commitment was shown when the U.S. withdrew from the Paris agreement, whereas Latin American allies remained, departing from the traditional foreign policy apparatus of Latin America falling in line with the United States policies. At the G20 Summit in Hamburg **Germany**, the U.S. was left isolated as the other 19 countries, including **Argentina, Brazil, and Mexico** were united in their statement that the Paris Agreement is “irreversible.”

Latin American countries also support the Paris Agreement due to economic self-interest. According to the Natural Resources Defense Council, the Paris Agreement is referencing the “landmark environmental accord that was adopted by nearly every nation in 2015 to address climate change and its negative impacts. The deal aims to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 degrees Celsius above the preindustrial levels while pursuing means to limit the increase to 1.5 degrees. The agreement includes commitments from all major emitting countries to cut their climate-altering pollution and to strengthen those commitments over time. The agreement provides a pathway for developed nations to assist developing nations in their climate mitigation and adaptation efforts, and it creates a framework for the transparent monitoring, reporting, and ratcheting up of countries’ individual and collective climate goals.” The United States withdrew from the agreement on the basis that is was not economically unfair, and that is would hurt the U.S. economy. President Trump withdrew from it so that he could continue to invest in the coal industry and continue his “America First” policy. This policy has also resulted in the rollback of almost every environmental Obama-era policy. President Trump thought the U.S. would benefit more from not investing in the agreement to save money. The “America First” policy has caused many differences between Latin America and the U.S. For example, Latin American countries believe that the path to a better environment is now seen as a path to” prosperity and increased competitiveness.” This progress is shown by “America’s Quarterly,” “In 2015, the number of countries in the region [Latin America] with renewable energy targets nearly doubled compared to the year before. The International Finance Corporation estimates that the region could attract $1 trillion in clean energy investment opportunities by 2040, of which $600 billion is expected to materialize by 2030, with **Brazil, Chile, and Mexico** representing over half of the investment potential.” Over the last decade, **Mexico, Brazil, Peru, Chile, Colombia** have been critical players within the UN on formatting and setting the agenda on the Paris Agreement. The balance of global power may be influenced as a result of the U.S. backing out of the Paris Agreement because this leaves Latin American countries searching for new funding. The United States is
concerned about their decreasing influence with their neighbors to the south, and are likely to engage in more aggressive foreign policy with other nations to prevent a fundamental shift in power relations. This funding will likely originate from China and further strengthen partnerships with Canada and Europe.

Africa
Sub-Saharan Africa has experienced severe environmental changes in the last decade as a result of climate change that will lead to more ramifications. Climate Change will cause significant changes in the extreme temperatures in all Sub-Saharan regions. According to African Renewal, in West and Central Africa there will be significant increases in the number of hot days at both 1.5° C and 2° C. Over Southern Africa, temperatures are expected to rise faster at 2° C, and areas of the southwestern region, especially in South Africa and parts of Namibia and Botswana, are expected to experience the highest increases in temperature. The President of the UN Economic and Social Council said that the region would experience 1.5 times the temperature increase as the rest of the world. Some of the critical issues in Africa regions, according to Mr. Thiaw, special adviser of the UN Secretary-General for the Sahel are drought, desertification, and scarcity of resources. He says that “this has led to heightened conflicts between crop farmers and cattle herders, and weak governance has led to social breakdowns.” “The shrinking of Lake Chad has to lead to economic marginalization and providing a breeding ground for recruitment by terrorist groups as social values and moral authority evaporate.” as Mr. Thiaw said.

There is an Africa Climate Week (ACW) that is part of the Paris Agreement to ensure countries are maintaining their contributions to the agreement. This is part of a greater, Regional Climate Week (RCW) that has numerous international and regional partners such as the World Bank, UN Development Programme (UNDP), and the UN Environment Programme (UNEP). Regional partners include the African Development Bank (AfDB) in Africa, Inter-American Development Bank (IDB) in LAC and the Asian Development Bank (ADB) and more. This meeting of regional partners is dedicated to improving environmental factors in the world and African countries precisely.
Involved Actors

- “The Intergovernmental Panel on Climate Change (IPCC) was set up by the World Meteorological Organization (WMO) and United Nations Environment to provide an objective source of scientific information. In 2013 the IPCC provided more clarity about the role of human activities in climate change when it released its Fifth Assessment Report. It is categorical in its conclusion: climate change is real and human activities are the main cause.” Source [https://www.un.org/en/sections/issues-depth/climate-change/](https://www.un.org/en/sections/issues-depth/climate-change/)

- The Climate Change Performance Index (CCPI) - “is an independent monitoring tool of countries’ climate protection performance. Its goal is to allow international transparency for climate change and the results of efforts made to protect the environment through individual countries data.” Source [https://www.climate-change-performance-index.org/](https://www.climate-change-performance-index.org/)

- The International Union for Conservation of Nature (IUCN) is a “membership union composed of both government and civil society organizations. It provides public, private, and non-governmental organizations with the knowledge and tools that enable human progress, economic development, and nature conservation to take place together. Created in 1948, IUCN has evolved into the world’s largest and most diverse environmental network. It harnesses the experience, resources, and networking ability of its 1,300 Member organizations and the input of 14,500 experts. IUCN is the global authority on the status of the natural world and the measures needed to safeguard it. Its experts are organized into six commissions dedicated to species survival, environmental law, protected areas, social and economic policy, ecosystem management, and education and communication.” Source [https://www.iucn.org/about/union/members](https://www.iucn.org/about/union/members)

UN Resolutions and Activities

- “In 1992, the UN held an “Earth Summit” produced the United Nations Framework Convention on Climate Change (UNFCCC) as a first step in addressing the climate change problem. Today, it has near-universal membership. The 197 countries that have ratified the Convention are Parties to the Convention. The ultimate aim of the Convention is to prevent “dangerous” human interference with the climate system.” Source [https://www.un.org/en/sections/issues-depth/climate-change/](https://www.un.org/en/sections/issues-depth/climate-change/)

**Paris Agreement**—“At the 21st Conference of the Parties in Paris in 2015, Parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause. The Paris Agreement’s central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. On Earth Day, 22 April 2016, 175 world leaders signed the Paris Agreement at United Nations Headquarters in New York. This was by far the largest number of countries ever to sign an international agreement on a single day. There are now 184 countries that have joined the Paris Agreement.” President Trump withdrew from the agreement due to his “America First” policy; he believed the agreement was economically a burden for the U.S. and unfair. Source [https://www.un.org/en/sections/issues-depth/climate-change/](https://www.un.org/en/sections/issues-depth/climate-change/)

**Climate Action Summit in 2019**—“In September 2019, Secretary-General António Guterres convened a Climate Summit to bring world leaders of governments, the private sector, and civil society together to support the multilateral process and to increase and accelerate climate action and ambition. He named Luis Alfonso de Alba, a former Mexican diplomat, as his Special Envoy to lead its preparations. The Summit will focus on key sectors where action can make the most difference—heavy industry, nature-based solutions, cities, energy, resilience, and climate finance. World leaders will report on what they are doing, and what more they intend to do when they convene in 2020 for the UN climate conference, where commitments will be renewed and may be increased.” They also discuss progress on the 13 sustainable development goals on the UN. Source [https://www.un.org/sustainabledevelopment/climate-change/](https://www.un.org/sustainabledevelopment/climate-change/)

March 2009, Human Rights Council Resolution 10/4: “The Council noted that ‘climate change-related impacts have a range of implications, both direct and indirect, for the effective enjoyment of human rights …’ and that such effects ‘will be felt most acutely by those segments of the population who are already in a vulnerable situation.’”
[https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRCAction.aspx](https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRCAction.aspx)

July 2016, Human Rights Council Resolution 32/33: “The Council urged Parties to integrate human rights in climate change mitigation and adaptation, and called for a panel discussion on the adverse impacts of climate change on the rights of the child to be held in the 34th session.”
[https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRCAction.aspx](https://www.ohchr.org/EN/Issues/HRAndClimateChange/Pages/HRCAction.aspx)

IUCN resolutions ranging from 1988 to 2016

Questions to Consider

- What is the global economic impact of Climate Change when developing countries begin experiencing worsening effects?
- What international repercussions, if any, should be placed on the U.S. for being a primary emission maker but not an advocate for new economic policies?
- What are some of the new influential partnerships being made due to Climate Change that will upset the balance of global power?
- How is your country being impacted by Climate Change? What is it doing in reaction? What partnerships can be made with surrounding countries experiencing the same impact?

Further Resources

- Global Climate change rankings- [https://www.climate-change-performance-index.org/](https://www.climate-change-performance-index.org/)
- Overview and Introduction to Climate Change and UN action-
- Climate Change background information, consequences, global concerns
Co2 Emission Chart https://www.weforum.org/agenda/2019/06/chart-of-the-day-these-countries-create-most-of-the-world-s-co2-emissions/

**Highlighted Timeline of Events**

- **1963** - First meeting of experts to address Climate Change and rising sea levels
- **1976** - Studies show that Greenhouse gases impact the greenhouse effect
- **1992** - Conference in Rio de Janeiro produces *UN Framework Convention on Climate Change*, but US blocks call for serious action. Study of ancient climates reveals climate sensitivity to CO2 in the same range as predicted independently by computer models
- **2000** - *Global Climate Coalition* dissolves as many corporations grapple with the threat of warming, but oil lobby convinces US administration to deny the problem
- **2001** - Third *IPCC* report states baldly that global warming, unprecedented since the end of the last ice age, is "very likely," with highly damaging future impacts and possible severe surprises. Effective end of debate among all but a few scientists. *Bonn meeting*, with the participation of most countries but not the US, develops mechanisms for working towards Kyoto targets.
- **2005** - *Kyoto treaty* goes into effect, signed by major industrial nations except for the US. Work to down emissions accelerates in *Japan, Western Europe, US regional governments, and corporations*. Hurricane Katrina also hits sparking more conversation over Global Warming.
- **2015** - Researchers find the collapse of West Antarctic ice sheet is irreversible, will bring meters of sea-level rise over future centuries. *Paris Agreement*: nearly all nations pledge to set targets for their greenhouse gas cuts and to report their progress. Solar electricity and wind power become economically competitive with fossil fuels in some regions.
- **2018** - Damage from impacts — droughts, floods, tropical cyclones, wildfires, a decline of wildlife—is seen sooner and at lower CO2 levels than expected. Mean global temperature is 14.7°C, the warmest in tens of thousands of years. Level of CO2 in the atmosphere is 405 ppm, the highest in millions of years.
- Source [https://history.aip.org/climate/timeline.htm](https://history.aip.org/climate/timeline.htm)