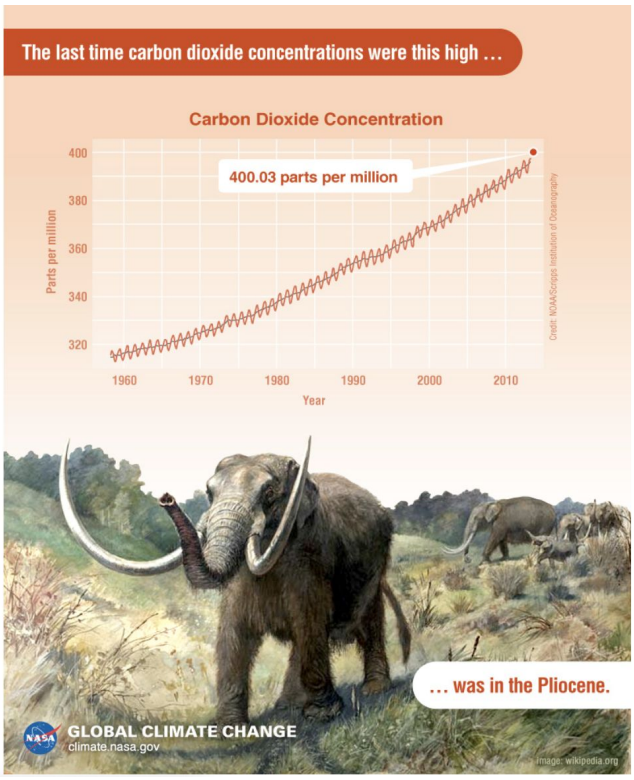
WORLD AFFAIRS COUNCIL
of Philadelphia

2021 Global Economic Forum
Combating the Climate Emergency
Background Briefing Paper

"Climate change is no longer some far-off problem; it is happening here, it is happening now." -
President Barack Obama, 44th President of the United States

Defining the Climate Crisis

Climate change is arguably the most pressing issue of our time. With temperatures and sea levels rising, and extreme weather events like hurricanes and droughts occurring more frequently than ever before, the lives and livelihoods of millions around the world are at stake. The climate crisis threatens the Earth's waterways, soil, and air quality, each important to the success of the world's complex ecosystems, and the foundations for human life. Without significant action from the international community, the climate crisis represents an existential threat to humanity.



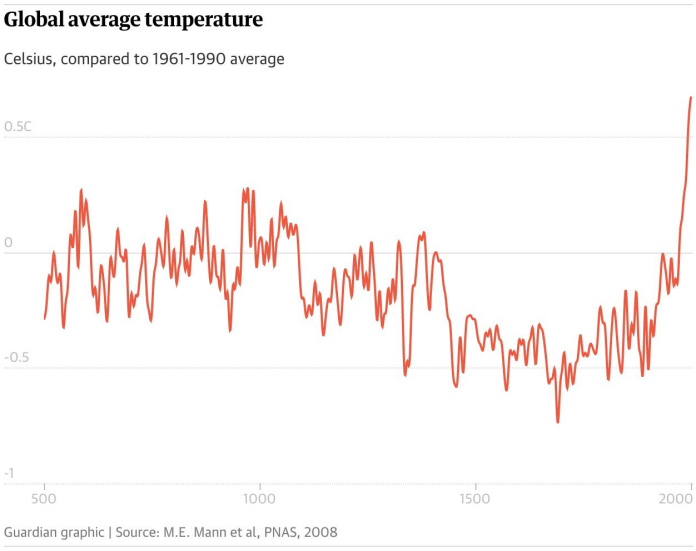
National Geographic defines climate change as "the long-term alteration of temperature and typical weather patterns in a place."[1] Climate change, when measured over a significant amount of time, can lead directly to increased instances of **extreme weather events**.[2] However, there is an important distinction to make between climate (and climate change), and **weather**. The climate of a region is measured over a long period of time and has to do with patterns over this time period. Weather, on the other hand, is a short-term phenomenon, which changes day to day.

Climate change has both natural and human-made causes. Naturally occurring climate change exists, often caused by shifts in solar radiation or other natural phenomena, causing subtle changes to the Earth's climate over thousands of years. However, within the past 100 years, human impact, often linked

[1] Climate Change - National Geographic - https://www.nationalgeographic.org/encyclopedia/climate-change/
[2] National Climate Assessment - U.S. Global Change Research Program - https://nca2014.globalchange.gov/highlights/report-findings/extreme-weather

to the use of **fossil fuels,** such as natural gas, oil, and coal, and **environmental degradation** have led to dramatic and problematic shifts in the Earth's climate. Burning fossil fuels creates an increased concentration of **greenhouse gases** in the atmosphere, trapping radiation, and causing global temperature to rise.

Earth's rapidly warming climate presents significant challenges to life, including humans, that depend on its air, water, and soil quality. Rising temperatures may cause a number of disruptions to the Earth's freshwater systems, as well as **habitable** and **arable land.** Furthermore, climate change leads to **soil degradation**, which can in turn limit people's access to food and water. [3]



However, some aspects of climate change are reversible, and can be solved through collective action and by enterprising individuals. Scientists, activists, governments, corporations, and non-governmental organizations can all work together to combat the climate crisis, creating a safer and healthier environment for generations to come.

Scientists have provided some benchmarks in the fight against climate change. In order to prevent the most dangerous and drastic outcomes related to climate change, scientists recommend that the international community limit greenhouse gas emissions in an attempt to keep average global temperatures below a 2 degree celsius rise from pre-industrial levels. The scientific community further encourages the international community to aim for below 1.5 degree celsius increase in order to limit significant harm to many forms of life on Earth.[4] If no actions are taken, temperatures may rise 3 degrees celsius by 2100, causing irreversible damage to the world's complex ecosystems.

Human Impact of the Climate Crisis

Climate change has affected a number of areas of human life including global agriculture, trade, human rights, and international security. Economists and political leaders caution that climate change may lead to an increasing competition for resources, including clean water, and arable land. Competition for these basic human resources has already caused humanitarian issues, including an increase in climate **refugees** and other **displaced people**.

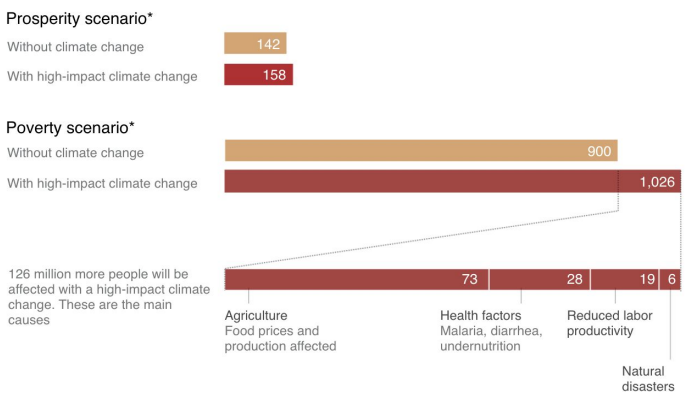
[3] The Climate Crisis: A Race We Can Win - The United Nations - https://www.un.org/en/un75/climate-crisis-race-we-can-win
[4] The Climate Crisis: A Race We Can Win - The United Nations - https://www.un.org/en/un75/climate-crisis-race-we-can-win

An example of the distress caused by climate change are the cattle farmers of Eastern Africa. In rural parts of Kenya, Ethiopia and Somalia, cattle farmers have relied on periodic rains to water their cattle stock. However, in the past 20 years, this region has been plagued by four severe droughts. Those who live here depend on cattle, both as sustenance and a **cash-crop**. However, these recent droughts, and the potential for greater, more severe droughts in the future, threaten the lives and livelihoods of these farmers. The United Nations has aided this region by providing approximately 12 million people in the area with food aid; an important intervention, but unfortunately not a long term solution to the root issue.[5]

Although climate change threatens humans throughout the word, certain populations are likely to be disproportionately impacted. People residing in urban areas, and those living in developing nations stand to be impacted more than others. This fact poses an even greater threat for humanity in the future, as over half the world's population (more than 4.5 billion people) live in cities, with that number expected to rise by another 2.5 billion by 2050.[6] Additionally, the world's poorest and most vulnerable often bear the biggest cost of climate impacts. In fact, it is predicted that climate change will increase the economic gap between the world's poorest and richest people, while also pushing 26 million people into poverty each year.[7] All efforts to combat climate change, whether they are from a scientific, socioeconomic, or political lens, must pursue an agenda rooted in justice and equity, with the preservation of human life at the core of decision-making.

By 2030, effects of climate change on agriculture key to driving people into poverty

Number of people in extreme poverty, in millions



*Scenarios developed based on different social and economic policies

NG STAFF
SOURCES: WORLD BANK; ROZENBERG AND HALLEGATTE

Additionally, climate change impacts the health of people around the world. Scientists predict that in many parts of the world, the climate will become hotter and wetter, leading to increased number of tropical diseases and related health issues. In fact, the World Health Organization predicts that "between 2030 and 2050, climate change will cause around 250,000 additional deaths per year, from malnutrition, malaria, diarrhea and heat-stress alone".[8] Additionally, rising temperatures can cause severe heat waves, contributing to deaths from **cardiovascular** and **respiratory** disease. Changes in

[5] Hotter, Drier, Hungrier: How Global Warming Punishes the Poorest - The New York Times - https://www.nytimes.com/2018/03/12/climate/kenya-drought.html
[6] Cities could be our best weapon in the fight against climate change - World Economic Forum https://www.weforum.org/agenda/2019/09/cities-could-be-our-best-weapon-in-the-fight-against-climate-change/
[7] The Climate Crisis: A Race We Can Win - The United Nations - https://www.un.org/en/un75/climate-crisis-race-we-can-win
[8] Climate Change - The World Health Organization https://www.who.int/health-topics/climate-change#tab=tab_1

climate also often extend the seasons of transmittable **water-borne** and **air-borne** diseases. Specifically, it is predicted that the changing climate will increase exposure to mosquitoes that carry both **malaria** and **dengue fever**, diseases that are most common in developing nations located in tropical regions.[9]

As briefly touched on before, climate change is increasing the number of migrants and refugees around the world. Due to changes in extreme weather events and a decrease in arable land, instances of displacement are likely to increase. The **World Bank** predicts that 143 million **climate migrants** will come from sub-Saharan Africa, Latin America and Southeast Asia by 2050. In 2015, the Teiota family from Kiribati, a small island nation in the Pacific, applied for refugee status in New Zealand, becoming the first case of refugee request explicitly because of climate change. Global institutions will need to evaluate their plan for the inevitable increase in immigration and determine how they will handle requests like the Teiota's.[10]

Education will also be affected by climate change. Article 26 of the **United Nations Universal Declaration of Human Rights** tells us that everyone has a right to free education, as it improves the lives of children and their families. For example, a child who has a mother that can read is 50% more likely to live past the age of 5.[11] However, climate change will impact education, making it difficult for children to receive this fundamental and essential right. For example, after natural disasters occur, school buildings are often used as shelters for those whose homes were destroyed, suspending educational instruction. Even when these schools do reopen, many students often are unable to return due to the lost income of their family.

Impact of the Climate Crisis on the Global Economy

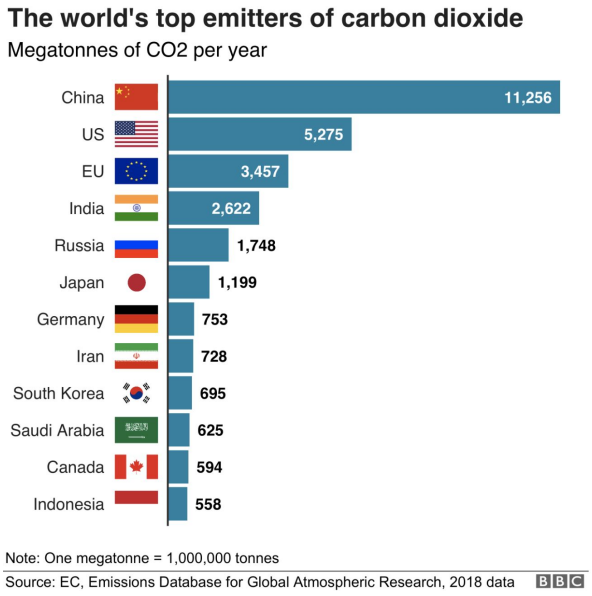
In addition to disrupting the lives of millions of people around the world, climate change poses a serious threat to both the international economy and the **domestic economies** of countries around the world. Previously, the threats to the global economy from climate change were not fully understood. Recently, studies have shown that climate change can in fact affect a country's **economic output, growth rate,** and its overall economic outlook.[12]

In 2018, the **Fourth National Climate Assessment** warned that if actions are not taken soon, climate change "could seriously disrupt the U.S. economy."[13] Increasing temperatures, sea levels and natural disasters will threaten global infrastructure, including the coastal cities home to millions around the world. These events may also lead to health problems, making the workforce less productive. Finally, due to the interconnectedness of the global economy, natural disasters in far away countries have the

[9] Climate Change and Health - The World Health Organization https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health
[10] The Climate Crisis, Migration and Refugees - The Brookings Institute - https://www.brookings.edu/research/the-climate-crisis-migration-and-refugees/
[11] The Benefits of Education - The Global Partnership for Education - https://www.globalpartnership.org/benefits-of-education
[12] The Economic Damage from Climate Change May Be More Than You Think - Stanford Engineering - https://engineering.stanford.edu/magazine/article/economic-damage-climate-change-may-be-more-you-think
[13] How Climate Change Impacts the Economy - Columbia University - https://blogs.ei.columbia.edu/2019/06/20/climate-change-economy-impacts/

ability to harm trade and supply chains. For example, it is estimated that Texas experienced $125 billion in losses from Hurricane Harvey in 2017.

Domestic economies are not the only economies threatened by climate change; the global economy faces existential threats as well. Researchers and economists from the **International Monetary Fund (IMF)**, the University of Cambridge and the University of Southern California tell us that if we do not stop temperatures from rising consistently by 0.04 degrees celsius per year, the world **GDP per capita** could decrease by 7.22% by 2100. However, developing nations whose GDP comes from a single source (countries that rely on just agriculture, for example) will likely be the most impacted by changes to the global economy.



One of the main challenges in adequately combating climate change, and saving the economies of countries around the world, is that many believe it is impossible to do both. They believe that economics and climate change represent a **zero-sum game**, where one party wins and the other loses. For example, environmental organizations and the fossil fuel industry often view each other's goals as opposite, thus choosing to work against each other instead of together.[14] The rhetoric surrounding climate and business is that if one benefits, the other will not. However, we know that poor industrial practices harm the environment, and a damaged environment ultimately harms consumers, industries and businesses. Thus it is important to try and avoid the zero-sum game mindset on this issue and to promote the collaboration of businesses/corporations and environmental organizations/nonprofits to combat this issue.

International Actions

Global efforts to combat climate change have been ongoing for decades.[15] Officially ratified on February 16, 2005, the **Kyoto Protocol** is one of the first major international agreements specifically focused on combating climate change. The Kyoto Protocol consists of 84 industrialized countries committed to limiting and reducing greenhouse gas emissions. These countries agreed to adopt specific policies to reduce and mitigate emissions and report back periodically on their progress. The Kyoto Protocol is only made up of developed countries, as they are responsible for the historical accumulation of most

[14] Economy vs. Environment: It Doesnt Have to be a Zero Sum Game - Forbes - https://www.forbes.com/sites/thebakersinstitute/2015/12/28/economy-and-environment-doesnt-have-to-be-a-zero-sum-game/#532a7aebef22

[15] Congress' Climate History - Center for Climate and Energy Solutions - https://www.c2es.org/content/congress-climate-history/#:~:text=The%20process%20of%20designing%20a,the%20foundation%20for%20future%20agreements.

greenhouse gas emissions. The countries committed to the Protocol also understand that good policy is often dynamic, and changes when more information is made available. So, in 2012, the **Doha Amendment** was added to the Kyoto Protocol, which gave countries a chance to agree to a second period of cutting emissions and allowed amendments and updates to be made to the original Protocol.[16]

More recently, the global community came together on the **Paris Accords**. The agreement was signed by 195 countries at the United Nations Framework Convention on Climate in December 2015. Its main goal was to "limit global temperature increase in this century to 2 degrees celsius above pre-industrial levels, while pursuing means to limit the increase to 1.5 degrees." Additionally, the Paris Accords provides ways for developed countries to aid developing nations with climate adaptation and mitigation techniques, as well as has mechanisms for countries to monitor and report their goals and progress in achieving these goals.[17]

In 2017, President Trump announced that he would withdraw the U.S. from the Paris Accords, a significant blow to the international community's efforts to combat climate change. As one of the world's largest and wealthiest countries, the United States has a significant voice in the international community. Often, the United States is able to push allied countries into its preferred policy positions through negotiation and bargaining. However, by electing not to participate in the Paris Accords, the United States has indicated its disinterest in this policy area. In early 2021, President Biden recommitted the United States to the Paris Accords, signaling another shift in the United States position toward climate change.

Potential Solutions to the Climate Crisis

Climate change represents one of the global community's largest, and most complex issues. However, experts from around the world have developed some simple ways to combat its greatest effects. Climate change solutions generally fall into two theories; adaptation and mitigation. **Adaptation** rests on the assumption that some aspects of climate change will occur, and that humanity must take steps to learn how to successfully and sustainably live with the impacts of climate change. An example of this strategy would be building a sea wall to protect a coastal city from sea-level rise, or genetically modifying crops to grow in hotter and/or drier climates.[18] **Mitigation** strategies seek to address the root causes of climate change by taking steps to reduce or even reverse the causes of climate change. Examples of mitigation strategies would include slowing the rate of greenhouse gas accumulation in the atmosphere, or **carbon-capture** technologies which would return the concentration of greenhouse gases in the atmosphere to pre-industrial levels.

As with most complex international issues, there will likely be no single solution to the climate crisis. Combating climate change will likely require a patchwork of mitigation and adaptation policies to

[16] What is the Kyoto Protocol? - The United Nations - https://unfccc.int/kyoto_protocol#:~:text=The%20Kyoto%20Protocol%20was%20adopted%20on%2011%20December%201997.&text=In%20short%2C%20the%20Kyoto%20Protocol,accordance%20with%20agreed%20individual%20targets

[17] Everything You Need to Know About the Paris Climate Accords - National Resources Defense Council - https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know

[18] Responding to Climate Change - NASA - https://climate.nasa.gov/solutions/adaptation-mitigation/

protect the most vulnerable populations, while securing a prosperous and sustainable future. However, the responsibility of fighting climate change will ultimately fall on the individual, corporate, and governmental level. Individuals, within reason, should try to adapt a lifestyle based on the 'three R's': reduce, reuse and recycle. Most significantly, individuals should attempt to reduce their consumption of goods; everything from water consumption to skipping the next generation of iPhone until your last one is truly dead. Small steps, including opting to walk, bike or ride public transportation rather than driving can also make significant differences.

However, in order to adequately respond to climate change, corporations and national governments must act as well. Corporations should commit to sourcing goods and products from sustainable sources, and ensure that their products are free of harmful or damaging environmental impacts. Other strategies, such as utilizing clean and renewable energy sources to power factories or corporate offices may lessen environmental impact. Obviously, corporations need to balance their environmental impact with economic considerations of running a business, but pushing corporations to be equal partners in the climate fight will be necessary to achieving international climate goals.

Governments, at the local, national and international levels, will also play an important role in reducing the impact of climate change. Governments have the ability to incentivize desirable actions, and punish undesirable ones. For example, governments have the ability to pass stricter environmental regulations, granting themselves the power to fine or tax individuals or corporations for poor environmental protocols. Governments likewise have the ability to provide benefits, such as tax credits or other incentives, for individuals and corporations who adopt clean energy techniques.

The Charge - Create a Climate Policy Proposal Presentation

The 2021 Global Economic Forum represents the international community's next effort against climate change. The World Bank is seeking to fund innovative solutions to the climate crisis, and has called for interested policymakers to submit their proposals. Invited guests (that's you!) will present their teams' case for their Climate Policy Proposal, and will compete for fictitious funding from the World Bank.

As a member of the 2021 Global Economic Forum, you are charged with researching and advocating for a particular climate change policy (or set of policies), and developing a persuasive argument for your case. You may select either adaptation and/or mitigation techniques for your proposal (see the "Potential Solutions to the Climate Crisis" section above for adaptation vs. mitigation techniques). Your presentation should be centered on a selected theme or topic (for example, Green Cities or Fighting Rising Sea Levels) and should be named according to this theme or topic. Please note that the maximum amount that the World Bank will grant for a policy proposal is $500 million, so your proposal cannot exceed this amount. Your proposed policies should be backed up by research-based evidence and should cite past actions, but ultimately be original, innovative ideas. Finally, you must note in your presentation *how* these policies will be implemented and how your team will incentivize governments, international organizations, and the private sector (i.e. businesses) to implement your policies. **It is critical that you read the separate *Instructions for Creating a Climate Policy Proposal Presentations* for further details and expectations.** Teams are encouraged to utilize the provided presentation template

(in your school's Google Drive program folder) when creating their Climate Policy Proposal presentations. Each team will have 3-5 minutes to present and should have no more than 5 slides in their presentation (not including the title slide). This briefing paper should serve as a starting point for creating your Climate Policy Proposals, but you will also need to conduct additional research. Please see the Council's Global Economic Forum resources **webpage** for suggested additional resources.

The purpose of this Forum is not only for students to gain a complex understanding of the social, political, and economic implications and consequences of the global climate crisis, but for them to also gain experience in the policymaking process as it relates to critical international issues. Best of luck!

Quick Facts

Find at least five quick facts from this briefing paper that will be useful in creating your Climate Policy Proposal. Quick facts should be about one sentence long and provide useful information on the subcommittee topic. A good example of a quick fact is a statistic related to the topic.

1.
2.
3.
4.
5.

Questions to Consider

1. Define climate change. What is the difference between climate change and extreme weather events?
2. What is the difference between mitigation and adaptation as they relate to climate change?
3. What are some natural causes of climate change? What are some human-made causes of climate change?
4. What are some impacts that climate change has on people around the world? Who is most impacted and why?
5. What international actions have already been taken to combat climate change and the current climate crisis?
6. What are some possible solutions to the current climate crisis? Which solutions do you think are best? Why?

Glossary

Term	Description
Adaptation	"the physical or behavioural characteristic of an organism that helps an organism to survive better in the surrounding environment."

Air-borne diseases	Air-borne illnesses are spread by tiny pathogens released into the air from breathing, sneezing and coughing.
Arable land	Any land that can be used to grow crops. Rising temperatures can alter the state of land making it unfit for growing crops.
Carbon-capture	A technology that captures carbon dioxide directly from the air with an engineered mechanical system.
Cardiovascular disease	Cardiovascular diseases are diseases related to the heart and include illnesses such as heart attacks and strokes. An increase in temperature can trigger symptoms leading to these diseases.
Cash-crop	A crop that is grown for market and not for personal use or livestock. This would include, rice, wheat, coffee, and spices.
Climate change	The long-term alternation of temperature and typical weather patterns in a place.
Climate migrants	Climate migrants leave their homes due to "climate related stressors." However, they are not legally considered to be refugees by international refugee law.
Dengue Fever	These are viruses spread through the might of a type of mosquito called Aedes. In areas with a high risk of dengue, it is often the leading cause of illness.
Displaced people	People who leave their homes due to a catastrophic event, such as a natural disaster or war.
Doha Amendment	Adopted to the Kyoto Protocol to ensure a reduction in greenhouse gas emissions in 2012.
Domestic economies	The economy of a single country.
Economic growth rate	A change in the value of all of the goods and services produced in a nation during a specific period of time, as compared to an earlier period.
Economic output	Economic output refers to the amount of goods and services which a nation, industry, or company creates over a set time period."
Environmental degradation	The lack of natural resources no longer being abundant to the land causing a deterioration in the environment.
Extreme weather events	Extreme weather events are weather that occurs in a place where that particular type of weather is rare. Extreme weather events include things like floods, droughts and hurricanes.
Fossil fuels	Fossil fuels come from fossilized, buried remains of plants and animals that lived millions of years ago. Fossil fuels include coal, crude oil, and natural gas.
Fourth National Climate Assessment	A "congressionally mandated" report by the U.S. Global Change Research Program which provides public information on scientific research concerning the impacts of climate change on the United States.
GDP per capita	(Gross Domestic Product per capita) A country's economic output per person; Calculated by dividing the GDP of a country by its population.
Greenhouse gases	Greenhouses gases are gases that trap heat in earth's atmosphere.

Habitable land	Land that is fit to live on. Rising temperatures can alter the state of the land making it unsuitable for life to inhabit the land.
International Monetary Fund (IMF)	The IMF is an international organization that works to create global economic cooperation, facilitates international trade, promotes sustainable economic growth and helps reduce poverty around the world. The IMF is made up of 189 countries and often works in partnership with The World Bank.
Kyoto Protocol	The Kyoto Protocol consists of 192 industrialized parties committed to limit and reduce greenhouse gas emissions. These countries adopt specific policies to reduce and mitigate emissions and report back periodically on their progress. It was ratified in 2005.
Malaria	Malaria is a disease transmitted through a mosquito that has been infected by a parasite. Symptoms include high fevers, chills, and other flu-like symptoms.
Mitigation	Reducing risk of loss from the occurrence of any undesirable event.
Paris Accords	A treaty drafted in 2015, then signed in 2016 that legally binds all countries who have agreed to it. The treaty is meant to hold countries accountable and create a global boundary to avoid negative impacts of climate change by reducing emissions from major countries. Also known as the Paris Agreement.
Refugees	A refugee is someone who has been forced to flee his or her country because of persecution, war or violence.
Respiratory disease	Respiratory diseases include illnesses related to the lungs such as asthma, pneumonia and lung cancer. An increase in temperature can trigger symptoms leading to these diseases.
Soil degradation	A decline in the condition of soil due to poor management or improper use, often for agricultural or industrial purposes.
United Nations Declaration of Human Rights	This is a document produced by the United Nations that defines fundamental human rights that must be universally protected. This declaration has been translated into 500 different languages.
Water-borne diseases	Illnesses that are caused by bacteria in contaminated water.
Weather	Weather refers to the state of the atmosphere through a specific degree and how it may impact the environment. For example, the weather of regions in colder temperatures may result in natural factors such as snow or ice.
The World Bank	The World Bank is an international organization that provides direct and indirect funding and technical assistance aimed at promoting growth and development.
Zero-sum game	A situation in which one person's gain is equivalent to another's loss.