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Global Climate Agreements: Successes and Failures

Prepared By
Muhammad Faizan
M.sc (Hons) ERE
University of Agriculture Faisalabad
&
Sana Akram
Bs (Hons) Commerce
GCWUF

Global Climate Agreements: Successes and Failures

Summary:

- International discussions on combating climate change have been ongoing since the early 1990s, leading to the creation of key agreements like the Kyoto Protocol and the Paris Agreement.
- While there is widespread agreement among governments regarding the scientific basis of climate change, there are disagreements regarding issues such as assigning responsibility for emissions, tracking emissions reduction goals, and providing support to countries severely impacted by climate change.
- The findings of the first global stock take, presented at the 2023 UN Climate Summit in Dubai, UAE, underscored the necessity for governments to intensify their efforts to limit the global temperature increase to 1.5°C.

Introduction

Over the past few decades, governments worldwide have made collective pledges to mitigate global warming. Despite increased diplomatic efforts, the world is already experiencing the impacts of climate change, which are projected to worsen.

Through agreements like the Kyoto Protocol and the Paris Agreement, countries committed to reducing greenhouse gas emissions. However, the concentration of carbon dioxide in the atmosphere continues to rise, leading to rapid global warming. Scientists caution that unchecked warming could result in severe environmental consequences, such as significant sea-level rise, unprecedented droughts and floods, and widespread species extinction.

Since the negotiation of the Paris accord in 2015, many of the 195 signatory countries have reinforced their climate commitments. This includes pledges to reduce emissions and support vulnerable nations in adapting to extreme weather events, as seen in the annual UN climate conferences known as the Conference of the Parties (COP). Nevertheless, the absence of U.S. President Joe Biden and Chinese President Xi Jinping from the recent COP28 summit in Dubai, UAE, has raised concerns about the future climate commitments of the world's two largest greenhouse gas emitters.

Which international agreements are the most significant regarding climate change?

Montreal Protocol, 1987: Although not originally designed to address climate change, the Montreal Protocol was a landmark environmental agreement that served as a blueprint for future climate diplomacy. It required all countries to phase out the production of ozone-depleting substances like chlorofluorocarbons (CFCs), resulting in the elimination of nearly 99 percent of these harmful substances. The Kigali Amendment in 2016 further extended its scope to include the reduction of hydrofluorocarbons (HFCs), potent greenhouse gases.

UN Framework Convention on Climate Change (UNFCCC), 1992: Ratified by 197 countries, the UNFCCC was the first global treaty to explicitly address climate change. It established the Conference of the Parties (COP) as an annual forum for international discussions on stabilizing greenhouse gas concentrations in the atmosphere. The Kyoto Protocol and the Paris Agreement were outcomes of these discussions.

Kyoto Protocol, 2005: Adopted in 1997 and in force from 2005, the Kyoto Protocol was the first legally binding climate treaty. It required developed countries to reduce emissions by an average of 5 percent below 1990 levels and set up mechanisms to monitor their progress. However, it did not impose obligations on developing countries like China and India. The United States signed but never ratified the agreement, eventually withdrawing from it.

Paris Agreement, 2015: Considered the most significant global climate agreement, the Paris Agreement mandates all countries to set emissions reduction targets, known as nationally determined contributions (NDCs). Its main objectives are to limit global warming to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. It also aims for global net-zero emissions in the second half of the century, achieving a balance between emissions produced and removed from the atmosphere.

Former President Donald Trump's decision to withdraw the United States from the Paris Agreement in November 2020 made it the only country to exit the accord. However, President Joe Biden reversed this decision and reentered the United States into the agreement during the early stages of his presidency. Three countries—Iran, Libya, and Yemen—have yet to formally approve the agreement.

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Is there widespread agreement on the scientific understanding of climate change?

Yes, there is a broad consensus within the scientific community regarding climate change, although some individuals, including politicians in the United States, deny its significance as a problem. According to David Victor, a professor of international relations at the University of California, San Diego, when international climate negotiation teams convene, there is less doubt about the science and more disagreement on setting priorities.

The fundamental scientific facts are as follows: the Earth's average temperature is increasing at an unprecedented rate; human activities, particularly the burning of fossil fuels (coal, oil, and natural gas), are the primary contributors to this rapid warming and subsequent climate change; and continued warming is anticipated to have adverse effects worldwide.

Analysis of ice core data reveals that the Earth's average temperature is currently rising more rapidly than it has in the past eight hundred thousand years. Scientists attribute this primarily to human activities over the past century and a half, such as fossil fuel combustion and deforestation, which have significantly raised the levels of heat-trapping greenhouse gases, especially carbon dioxide, in the atmosphere, leading to global warming. The Intergovernmental Panel on Climate Change (IPCC), established by the UN in 1988, regularly evaluates the latest climate science and produces consensus-based reports for member countries.

What is the reason behind countries' efforts to limit the global temperature increase to below 1.5°C?

Scientists have long cautioned about the catastrophic environmental repercussions if global temperatures continue to rise at their current rate. As per a 2021 assessment by the IPCC, the Earth's average temperature has already escalated by approximately 1.1°C above preindustrial levels. The report, authored by over two hundred scientists from more than sixty nations, anticipates that the world will surpass or match a 1.5°C warming within the next two decades, even with nations significantly reducing emissions promptly.

A previous, more comprehensive IPCC report outlined the severe consequences expected from a 1.5°C global temperature rise:

Heatwaves: Many regions will experience more frequent hot days, with about 14 percent of the global population facing severe heat periods at least once every five years.

Droughts and Floods: Increased susceptibility to droughts and floods will make agriculture more challenging, reduce crop yields, and lead to food shortages.

Rising Seas: Coastal regions, home to tens of millions of people, will face submersion in the coming decades, with small island nations particularly at risk.

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Ocean Changes: Up to 90 percent of coral reefs could disappear, and oceans will become more acidic, impacting fisheries worldwide.

Arctic Ice Thaw: The Arctic could experience a summer with no sea ice at least once a century, a phenomenon not seen in over two thousand years. Additionally, 40 percent of the Arctic's permafrost could thaw by the end of the century.

Species Loss: More insects, plants, and vertebrates will be at risk of extinction.

Scientists emphasize that if the world surpasses the 2°C threshold, the consequences will be even more severe. "We're heading towards disaster if we can't limit our warming, and we need to act swiftly," warns Alice C. Hill, a senior fellow at the Council on Foreign Relations (CFR) for energy and the environment.

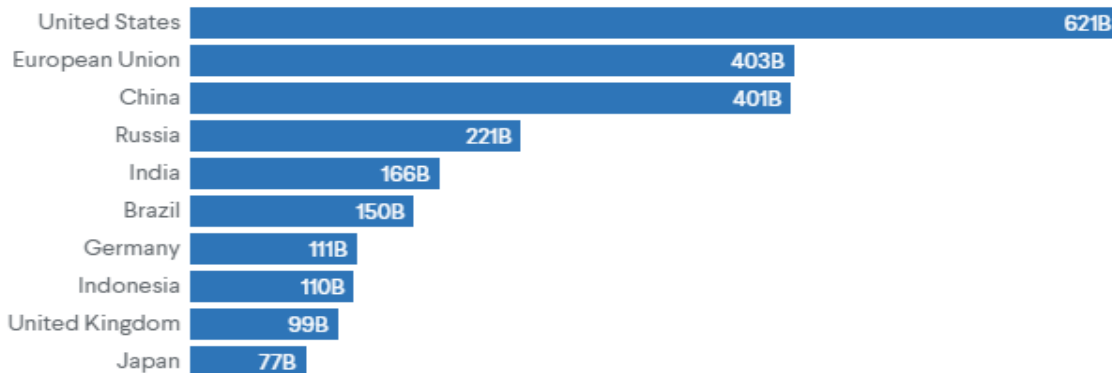
Which countries bear responsibility for climate change?

The responsibility for climate change is a subject of debate, influenced by perspective and methodology used to assess emissions. Since the inception of climate negotiations in the 1990s, there has been ongoing discussion regarding which countries, whether developed or developing, should bear more responsibility for addressing emissions.

Developing nations contend that developed countries have historically emitted a greater amount of greenhouse gases. They argue that developed nations should therefore bear a larger share of the responsibility, as they have been able to develop their economies without significant constraints. Notably, the United States holds the highest historical emissions, followed by the European Union (EU).

Top Greenhouse Gas Emitters Since 1850

Emissions in metric tons of carbon dioxide equivalent, as of 2021



Note: EU data does not include the United Kingdom.

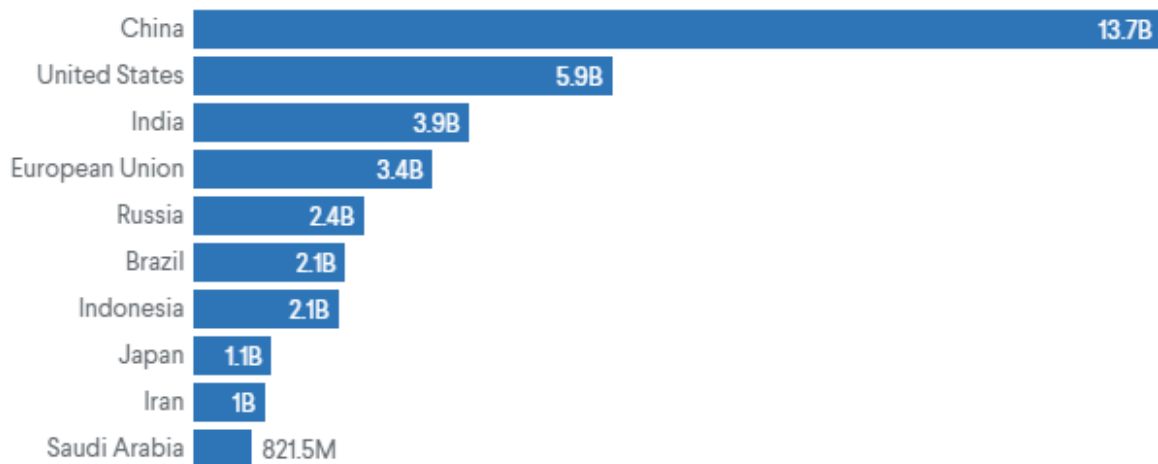
Source: Jones et al. via Our World in Data.

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Nevertheless, China and India have become some of the world's largest annual emitters, alongside the United States. Developed nations have asserted that these countries must now take greater action to combat climate change.

Top Greenhouse Gas Emitters in 2021

Emissions in metric tons of carbon dioxide equivalent



Note: EU data does not include the United Kingdom.

Source: Jones et al. via Our World in Data.

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Within this discourse, significant climate agreements have evolved in their approach to reducing emissions. The Kyoto Protocol mandated emission reductions solely for developed nations, whereas the Paris Agreement acknowledged climate change as a collective challenge and urged all countries to establish emission targets.

How much progress have countries achieved since the Paris Agreement?

Every five years, countries are expected to evaluate their progress in implementing the Paris Agreement through a process called the global stock take. The first of these assessments, released in September 2023, cautioned governments that "the world is not on track to meet the long-term goals of the Paris Agreement."

Despite this, countries have achieved some significant milestones during the annual UN climate summits. For instance, at COP27 in Sharm el-Sheikh, Egypt, a landmark commitment was made to establish the Loss and Damage Fund. This fund aims to address climate change inequality

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by providing financial assistance to poorer countries, which are often the least responsible for global emissions yet the most vulnerable to climate disasters. At COP28, countries decided to initially house the fund at the World Bank, with several wealthy nations, including the United States, Japan, the United Kingdom, and EU members, pledging approximately \$430 million combined. Additionally, the UAE pledged \$100 million, potentially increasing pressure on other high-emitting countries, such as China and Saudi Arabia, to bolster their contributions to climate action funding.

Efforts to reduce methane emissions, which contribute significantly to human-induced warming due to their potency and heat-trapping ability, have also gained momentum. The United States and the EU introduced the Global Methane Pledge at COP26, aiming to reduce methane emissions by 30 percent from 2020 levels by 2030. At COP28, oil companies pledged to cut methane emissions from wells and drilling by over 80 percent by the end of the decade. The pledge also included international monitoring efforts to ensure accountability. Additionally, the United States announced its commitment to reduce methane emissions from the oil and gas industry by nearly 80 percent over the next fifteen years.

Do the commitments outlined in the Paris Agreement suffice?

According to most experts, the commitments made by countries under the Paris Agreement are deemed insufficient and unlikely to be implemented swiftly enough to restrict global temperature rise to 1.5°C. As of late 2022, the policies of Paris Agreement signatories could lead to a temperature increase of 2.7°C (4.9°F) by 2100, as per the Climate Action Tracker compiled by German non-profits Climate Analytics and the New Climate Institute.

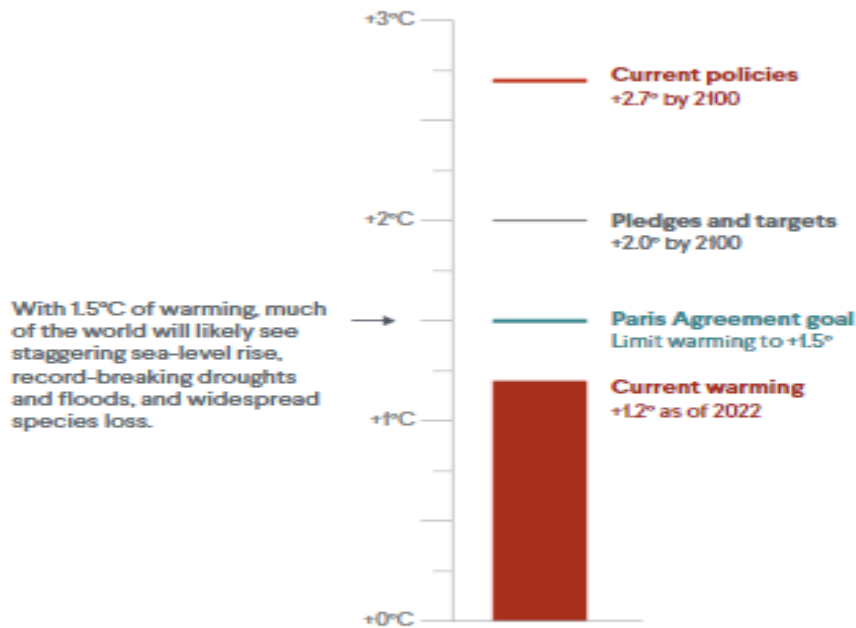
"The Paris Agreement falls short. It was recognized as inadequate even during the negotiation phase," remarks CFR's Hill. "It was seen as an initial step, with the expectation that countries would increase their emissions reduction ambitions over time."

Since 2015, numerous countries, including major emitters, have made more ambitious pledges. For instance, President Biden announced in 2021 that the United States aims to reduce emissions by 50 to 52 percent compared to 2005 levels by 2030, doubling the commitment made by former President Barack Obama. Subsequently, the U.S. Congress passed legislation in 2022 that could significantly contribute to achieving this goal. Additionally, the EU pledged to reduce emissions by at least 55 percent compared to 1990 levels by 2030, while China declared its intention to reach peak emissions before 2030.

Despite these efforts, global temperatures are still projected to rise by 2.0°C (3.6°F) by 2100, even if countries fully implement their pledges for 2030 and beyond. However, if the more than one hundred countries that have set or are considering net-zero targets follow through, warming could be limited to 1.8°C (3.2°F), according to the Climate Action Tracker.

Even With Pledges, World Is Not on Track to Meet Paris Agreement's Goal

Global temperature rise over preindustrial average



Note: Current policies and pledges and targets are projections. In each scenario, the temperature shown is the most likely of a range of possible outcomes. Pledges and targets include submitted and binding commitments for 2030 and beyond.

Source: Climate Action Tracker.

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What other options exist instead of the Paris Agreement?

Some experts envision the most impactful climate action occurring in alternative forums. Yale University economist William Nordhaus argues that voluntary international agreements like the Paris Agreement encourage free-riding and are likely to be ineffective. He suggests that the most effective approach to reducing global emissions would be for governments to negotiate a universal carbon price rather than focusing on country-specific emissions limits. Others propose new agreements that target specific emissions or sectors to complement the Paris Accord.

"Progress is likely to occur not through a global, unified effort, but through smaller groups and sector-specific actions," notes Victor, an international relations professor. Recent years have seen examples of this approach. The Group of Twenty (G20), representing countries responsible for 80 percent of the world's greenhouse gas emissions, has pledged to cease financing new coal-fired power plants abroad and has committed to tripling renewable energy capacity by the end of the decade. However, the G20 has yet to establish a deadline for phasing out fossil fuels. In 2022, countries within the International Civil Aviation Organization set a goal of achieving net-zero emissions for commercial aviation by 2050. Additionally, cities worldwide have made their own

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climate pledges, with over six hundred local governments in the United States alone detailing climate action plans that include emissions reduction targets.

Industry is a significant source of carbon pollution, and many companies have expressed intentions to reduce their emissions or achieve carbon neutrality or negativity, meaning they would remove more carbon from the atmosphere than they emit. While there is limited oversight of corporate emissions, some governments, including the United States, are considering mandating large businesses to report their carbon footprint. The Science Based Targets initiative, a UK-based organization considered the "gold standard" in validating corporate net-zero plans, has certified the plans of over three thousand firms and aims to more than triple this number by 2025. Nonetheless, analysts highlight several challenges, including questions about accounting methods and a lack of transparency in supply chains.

Despite these developments, many observers emphasize that policymakers still play the most crucial role in establishing and enforcing emissions targets. "Compared to governments worldwide implementing robust climate policies, everything else is relatively insignificant," notes Michael Greenstone, an economics professor at the University of Chicago.

References:

- **This timeline tracks UN climate talks since 1992.**
- **CFR's World101 library explains everything to know about climate change.**
- **Climate Action Tracker assesses countries' updated NDCs under the Paris Agreement.**
- **CFR's Alice C. Hill and Madeline Babin unpack the successes and failures of the 2022 U.S. climate bill.**
- **In this series on climate change and instability by the Center for Preventive Action, CFR's Michelle Gavin looks at the consequences for the Horn of Africa and the National Defense University's Paul J. Angelo for Central America.**