NHSMUN

National High School Model United Nations

2023

BACKGROUND GUIDE: UNEA

Topic A: The Disproportionate Impact of Climate Change on the Global South

Topic B: The Environmental Impact of the Pharmaceutical Industry

NHSMUN
National High School Model United Nations

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Hello Delegates!

I hope everyone is excited for NHSMUN 2023! With the conference just a few short months away, allow me to take this opportunity to introduce myself. My name is Zaheer Sooliman, and I will be your Session 1 Director for the United Nations Environment Assembly (UNEA). This is my second year on NHSMUN Staff. Previously, I was the Assistant Director of the UNEA. I clearly have a deep love for the environment! I've been doing Model UN since I started high school and participated at every opportunity. After graduating, I moved on to the other side of the dais and started staffing as many debates as I could. Now, I'm part of the NHSMUN family, and I wouldn't want to be anywhere else. We have been working tirelessly to deliver the best conference experience yet!

Here's a bit about me. I'm typing this to you from way across the Atlantic! I'm South African, born and raised. I am a second-year student at the University of the Witwatersrand, where I'm majoring in Digital Arts, and I'll be a third-year student by the start of 2023. Yes, my degree major is pretty far off from the Model UN spectrum. All I can say is that I have an immense passion for the world. I love learning about international affairs, politics, and other countries' cultures and languages. Then, I met MUN in high school and found my happy place. There's just something special about the business attire and pretending to be politicians. I also love to read, draw, paint, listen to music, and play video games. I absolutely love Marvel, Harry Potter, and High School Musical. I also dabble in writing and hope to publish my books someday and be all rich and famous and stuff.

Being a part of the UNEA team has been an amazing experience. I pride myself on being an avid climate activist. In my spare time, I work with several youth organizations to advocate for climate action. In 2021, I was a lead coordinator for the first-ever national South African Youth Climate Action Plan. Even more recently, at the start of 2022, I submitted and published a research paper on Indigenous climate adaptation methods.

We are so happy to introduce this year's background guides to you. These topics are near and dear to our hearts and extremely relevant in today's world. Model UN needs ample research and understanding, which I'm sure will be a piece of cake for all of you. We encourage you to come with bright minds, fresh ideas, and holistic solutions. Be confident and diplomatic, and just believe in yourselves. I certainly believe in all of you, and I'm so so excited to hear your speeches and solutions. At the end of the day, just remember to have fun. That's all that Model UN is!

Until the conference, please do not hesitate to contact any member of the UNEA or NHSMUN teams with your questions or concerns. We're all here to help! I can't wait to see you all in New York!

Until then,

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Dear Delegates,

Welcome to the United Nations Environment Assembly (UNEA) for the 2023 National High School Model United Nations Conference! My name is Kruttika Gopal, and I am the Director of the UNEA for Session II. After attending NHSMUN all four years of high school, I enjoyed the experience so much that I had to come back! This is my third year on staff, and I have worked with UNEA the entire time. I was the Assistant Director in 2020, Director in 2021, and am now back as a Director again. I hope you find NHSMUN to be as impactful as I did, and I am so excited to work together at this year's conference.

The opportunity that NHSMUN offers delegates to meet students from across the globe while also participating in important debates is one-of-a-kind. It holds a special place in my heart. It has created lifelong friendships, taught essential leadership skills, and highlighted the importance of collaboration to enact meaningful change. I am so excited for all of you to experience it in just a few months!

Currently, I am a senior at American University, where I am majoring in environmental studies with a minor in political science. I am passionate about tackling the health disparities that stem from climate change, particularly among vulnerable populations in urban areas. During my time in Washington, DC, I have worked for the U.S. Environmental Protection Agency and environmental nonprofits. I have also become active with climate activism groups in the region. NHSMUN is an experience that highlighted the opportunities to enact meaningful change on environmental issues, and I'm so grateful for that. I also love music and am the president of an a cappella group at school! When not singing, I enjoy hiking and exploring nature.

My co-Director, Zaheer Sooliman, and I are thrilled to work with you in the UNEA this year. We believe that the environment should be at the forefront of everyone's minds when thinking about global issues in the modern world, and this year's topics truly reflect that. The two topics—"The Disproportionate Impact of Climate Change on the Global South" and "The Environmental Impact of the Pharmaceutical Industry"—are complex issues that have ramifications for the entire global community. We hope that this background guide will help you navigate your research and preparation for when our committee convenes in March. These topics are constantly evolving, so it is up to you to read what is covered in this guide and follow new developments leading up to NHSMUN.

If you have any questions, comments, or concerns, please don't hesitate to reach out to me! I would love to help you prepare for the conference. Best of luck, and I cannot wait to see you in March!

Best,

Kruttika Gopal
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A Note on the NHSMUN Difference

Esteemed Faculty and Delegates,

Welcome to NHSMUN 2023! We are Ming-May Hu and Ana Margarita Gil, and we are this year's Secretary-General and Director-General. Thank you for choosing to attend NHSMUN, the world's largest and most diverse Model United Nations conference for secondary school students. We are thrilled to welcome you to New York City in March!

As a space for collaboration, consensus, and compromise, NHSMUN strives to transform today's brightest thinkers into tomorrow's leaders. Our organization provides a uniquely tailored experience for all in attendance through innovative and accessible programming. We believe that an emphasis on education through simulation is paramount to the Model UN experience, and this idea permeates throughout NHSMUN.

Realism and accuracy: Although a perfect simulation of the UN is never possible, we believe that one of the core educational responsibilities of MUN conferences is to educate students about how the UN System works. Each NHSMUN committee is a simulation of a real deliberative body so that delegates can research what their country has said in the committee. Our topics are chosen from the issues currently on the agenda of that committee (except historical committees, which take topics from the appropriate time period). This creates incredible opportunities for our delegates to conduct first-hand research by reading the actual statements their country has made and the resolutions they have supported. We also strive to invite real UN, NGO, and field experts into each committee through our committee speakers program. Moreover, we arrange meetings between students and the actual UN Permanent Mission of the country they are representing. No other conference goes so far to deeply immerse students into the UN System.

Educational emphasis, even for awards: At the heart of NHSMUN lies education and compromise. Part of what makes NHSMUN so special is its diverse delegate base. As such, when NHSMUN distributes awards, we de-emphasize their importance in comparison to the educational value of Model UN as an activity. NHSMUN seeks to reward students who excel in the arts of compromise and diplomacy. More importantly, we seek to develop an environment in which delegates can employ their critical thought processes and share ideas with their counterparts from around the world. Given our delegates' plurality of perspectives and experiences, we center our programming around the values of diplomacy and teamwork. In particular, our daises look for and promote constructive leadership that strives towards consensus, as real ambassadors do in the United Nations.

Debate founded on strong knowledge and accessibility: With knowledgeable staff members and delegates from over 70 countries, NHSMUN can facilitate an enriching experience reliant on substantively rigorous debate. To ensure this high quality of debate, our staff members produce detailed, accessible, and comprehensive topic guides (like the one below) to prepare delegates for the nuances inherent in each global issue. This process takes over six months, during which the Directors who lead our committees develop their topics with the valuable input of expert contributors. Because these topics are always changing and evolving, NHSMUN also produces update papers intended to bridge the gap of time between when the background guides are published and when committee starts in March. As such, this guide is designed to be a launching point from which delegates should delve further into their topics. The detailed knowledge that our Directors provide in this background guide through diligent research aims to increase critical thinking within delegates at NHSMUN.

Extremely engaged staff: At NHSMUN, our staffers care deeply about delegates' experiences and what they take away from their time at NHSMUN. Before the conference, our Directors and Assistant Directors are trained rigorously through hours of workshops and exercises both virtual and in-person to provide the best conference experience possible. At the conference, delegates will have the opportunity to meet their dais members prior to the first committee session, where they may engage

one-on-one to discuss their committees and topics. Our Directors and Assistant Directors are trained and empowered to be experts on their topics and they are always available to rapidly answer any questions delegates may have prior to the conference. Our Directors and Assistant Directors read every position paper submitted to NHSMUN and provide thoughtful comments on those submitted by the feedback deadline. Our staff aims not only to tailor the committee experience to delegates' reflections and research but also to facilitate an environment where all delegates' thoughts can be heard.

Empowering participation: The UN relies on the voices of all of its member states to create resolutions most likely to make a meaningful impact on the world. That is our philosophy at NHSMUN too. We believe that to properly delve into an issue and produce fruitful debate, it is crucial to focus the entire energy and attention of the room on the topic at hand. Our Rules of Procedure and our staff focus on making every voice in the committee heard, regardless of each delegate's country assignment or skill level. Additionally, unlike many other conferences, we also emphasize delegate participation after the conference. MUN delegates are well researched and aware of the UN's priorities, and they can serve as the vanguard for action on the Sustainable Development Goals (SDGs). Therefore, we are proud to connect students with other action-oriented organizations to encourage further work on the topics.

Focused committee time: We feel strongly that face-to-face interpersonal connections during debate are critical to producing superior committee experiences and allow for the free flow of ideas. Ensuring policies based on equality and inclusion is one way in which NHSMUN guarantees that every delegate has an equal opportunity to succeed in committee. In order to allow communication and collaboration to be maximized during committee, we have a very dedicated administrative team who work throughout the conference to type up, format, and print draft resolutions and working papers.

As always, we welcome any questions or concerns about the substantive program at NHSMUN 2023 and would be happy to discuss NHSMUN pedagogy with faculty or delegates.

Delegates, it is our sincerest hope that your time at NHSMUN will be thought-provoking and stimulating. NHSMUN is an incredible time to learn, grow, and embrace new opportunities. We look forward to seeing you work both as students and global citizens at the conference.

Best,

Ming-May Hu
Secretary-General

Ana Margarita Gil
Director-General

A Note on Research and Preparation

Delegate research and preparation is a critical element of attending NHSMUN and enjoying the debate experience. We have provided this Background Guide to introduce the topics that will be discussed in your committee. We encourage and expect each of you to critically explore the selected topics and be able to identify and analyze their intricacies upon arrival to NHSMUN in March.

The task of preparing for the conference can be challenging, but to assist delegates, we have updated our **Beginner Delegate Guide** and **Advanced Delegate Guide**. In particular, these guides contain more detailed instructions on how to prepare a position paper and excellent sources that delegates can use for research. Use these resources to your advantage. They can help transform a sometimes overwhelming task into what it should be: an engaging, interesting, and rewarding experience.

To accurately represent a country, delegates must be able to articulate its policies. Accordingly, NHSMUN requires each delegation (the one or two delegates representing a country in a committee) to write a position paper for each topic on the committee's agenda. In delegations with two students, we strongly encourage each student to research each topic to ensure that they are prepared to debate no matter which topic is selected first. More information about how to write and format position papers can be found in the NHSMUN Research Guide. To summarize, position papers should be structured into three sections:

I: Topic Background – This section should describe the history of the topic as it would be described by the delegate's country. Delegates do not need to give an exhaustive account of the topic, but rather focus on the details that are most important to the delegation's policy and proposed solutions.

II: Country Policy – This section should discuss the delegation's policy regarding the topic. Each paper should state the policy in plain terms and include the relevant statements, statistics, and research that support the effectiveness of the policy. Comparisons with other global issues are also appropriate here.

III. Proposed Solutions – This section should detail the delegation's proposed solutions to address the topic. Descriptions of each solution should be thorough. Each idea should clearly connect to the specific problem it aims to solve and identify potential obstacles to implementation and how they can be avoided. The solution should be a natural extension of the country's policy.

Each topic's position paper should be **no more than 10 pages** long double-spaced with standard margins and font size. **We recommend 3–5 pages per topic as a suitable length**. The paper must be written from the perspective of your assigned country and should articulate the policies you will espouse at the conference.

Each delegation is responsible for sending a copy of its papers to their committee Directors via myDais on or before **February 24, 2023**. If a delegate wishes to receive detailed feedback from the committee's dais, a position must be submitted on or before **February 3, 2023**. The papers received by this earlier deadline will be reviewed by the dais of each committee and returned prior to your arrival at the conference.

Complete instructions for how to submit position papers will be sent to faculty advisers via email. If delegations are unable to submit their position papers on time, please contact us at info@imuna.org.

Delegations that do not submit position papers will be ineligible for awards.

Committee History

The establishment of the United Nations Environment Program (UNEP) in 1972 marked the start of global initiatives and discussions on environmental issues.[1] However, as the UNEP began to encounter issues of greater severity, the need for a stronger governing body arose. In 2012 the United Nations Conference on Sustainable Development (also known as Rio+20) published a document, *The Future We Want,* which called for strengthening the UNEP's role. Thus, in June 2012, the United Nations Environment Assembly (UNEA) was then established through resolution 67/213 as a result of this document. Shortly after, in March 2013, the designation of the UNEP Governing Council was appropriated to the UNEA.[2] This made the UNEA the world's highest-level decision-making body on the environment and related issues.

The UNEA addresses critical environmental challenges facing the world, promotes cooperation amongst member states, and provides guidance to the UN and other stakeholders on environmental matters through resolutions and calls to action.[3] Additionally, the UNEP has various divisions such as science, policy, and economics, which allow it to address the intersectionality of environmental challenges.[4]

UNEA decisions are guided by the environmental section of the 2030 Agenda for Sustainable Development which outlines the UN's vision for a more sustainable future.[5] The full UNEA meets biennially, but member states engage in formal preparatory discussions to plan for the conference throughout the year.[6] The Assembly also grants observer status to many organizations, including the African Biodiversity Network and the Indigenous Information Network. These organizations speak and attend UNEA meetings but may not vote on resolutions.[7]

In the past, the Assembly has encountered difficulty in fulfilling its mandate due to clashes between its jurisdictional restrictions and the intersectionality of environmental challenges. Therefore, the UNEA is often tasked with studying and minimizing the effects of threats that cause environmental harm instead of preventing the harm from occurring. For example, in conflict-stricken areas, the UNEA often conducts Post-Conflict Environmental Assessments (PCEA) to determine the extent of damage due to conflict but is often unable to prevent the damage from occurring.[8]

1 "United Nations Environmental Programme (UNEP) Established," *Environment & Society Portal*, accessed September 9, 2021, https://www.environmentandsociety.org/tools/keywords/united-nations-environmental-programme-unep-established.
2 "United Nations Environment Assembly – UNEA," *IISD Earth Negotiations Bulletin*, accessed September 10, 2021. https://enb.iisd.org/negotiations/united-nations-environment-assembly-unea.
3 United Nations Environment Assembly. "146th meeting of the Committee of Representatives." UNEP/CPR/146/8 https://wedocs.unep.org/bitstream/handle/20.500.11822/28451/Agenda%20Item%207a-Note%20on%20Assessment%20and%20lessons%20learned.pdf?sequence=1&isAllowed=y
4 "Divisions," *UNEP*, 2017, https://www.unep.org/about-un-environment-programme/why-does-un-environment-programme-matter/divisions.
5 "Fifth Session of the United Nations Environment Assembly," *UNEP,* accessed September 15, 2021. https://www.unep.org/environmentassembly/unea5
6 "About UN Environmental Assembly Presidency and Bureau," *UNEP*, accessed September 12, 2021, https://www.unep.org/environmentassembly/about-un-environment-assembly-presidency-and-bureau.
7 "List of Accredited Organizations," UNEP, last updated on 18 August 2021, accessed September 19, 2021, https://www.unep.org/civil-society-engagement/accreditation/list-accredited-organizations?field_major_group_target_id=All&field_associated_region_target_id=61&field_.
8 "Post-Conflict Environmental Assessment." UNEP, acessed September 19, 2021, https://www.unep.org/explore-topics/disasters-conflicts/where-we-work/cote-divoire/post-conflict-environmental

UNEA

NHSMUN 2023

TOPIC A:

THE DISPROPORTIONATE IMPACT OF CLIMATE CHANGE ON THE GLOBAL SOUTH

Photo Credit: Zaian

Introduction

Climate change is not a new phenomenon. Labeled as a "Code Red for Humanity" by UN Secretary-General António Guterres, the impacts of climate change have been felt worldwide.[1] Over the past three decades, it has devastated several countries and communities. Luckily, discussions and solutions around the topic are already in effect, with several resolutions across multiple United Nations bodies.

Most climate change discussions are scientific and focus on the issue's environmental effects. The general topic is almost always linked to global warming, rising sea levels, and the melting of the polar ice caps. In actuality, climate change affects society and the global economy just as much as it affects the environment.[2] Global forums on the topic (such as the United Nations Framework Convention on Climate Change) do not account for the already vulnerable communities currently feeling climate change's worst effects.[3] The socioeconomic impacts of climate change and their impact on the Global South are critical to fully addressing the climate crisis. Climate policies address more than saving the environment. It serves to save humanity as a whole.

The United Nations Environment Assembly (UNEA) is tasked with understanding climate change's social and economic impacts. These topics include food security, weather-related displacement, poverty, unemployment, and financing. These are issues that are present in many countries and need immediate attention. The "Global South," comprised of Latin America, Africa, Asia, and the Pacific Islands, will see the worst effects of climate change.[4] Africa is currently experiencing a deep food security crisis where climate change devastates crop yields.[5] Asia is seeing millions of individuals affected by weather disasters that destroy homes and displace families.[6] With its large informal working sector, Latin America will see its civilians succumb to poverty and unemployment if temperatures increase.[7] Finally, the Pacific Islands are at serious risk of being lost entirely to rising sea levels.[8]

This topic heavily studies the renowned Paris Agreement, which guides climate action discussions. The legally binding agreement calls for every country to contribute to a greener future. It also urges developed states of the Global North to financially support developing states without outlining how that should happen.[9] Disagreement on the execution of climate actions and policies is typical. Not every country wants to prioritize climate change over areas like economic growth. This consequently affects the global community.

Ultimately, every country needs to play its part in redirecting humanity to stop climate change. Every continent, country, and city, is seeing or will see climate change affect their lifestyle and impact fundamental human rights. People of the Global South, in particular, are living in the worst hotspots.[10] Temperatures in these hotspots are warming at nearly double the rate as the rest of the world. These countries also lack the necessary infrastructure and economic stability to recover from climate disasters. Therefore, assistance and policy

1 "Guterres: The IPCC Report Is a Code Red for Humanity," *United Nations*, August 9, 2021, https://unric.org/en/guterres-the-ipcc-report-is-a-code-red-for-humanity/.
2 Pankaj Lal, Janaki Alavalapati, and Evan Mercer, "Chapter 3: Socioeconomic Impacts of Climate Change on Rural Communities," *Effects of Climate Change on Natural Resources and Communities: A Compendium of Briefing Papers* https://www.srs.fs.usda.gov/pubs/ja/2011/ja_2011_lal_001.pdf.
3 "COP 26: The Climate Conference That Failed the South," *ReliefWeb*, November 19, 2021, https://reliefweb.int/report/world/cop-26-climate-conference-failed-south.
4 Saleemul Huq and Mohamed Adow, "Climate Change Is Devastating the Global South," *Al Jazeera*, May 11, 2022, https://www.aljazeera.com/opinions/2022/5/11/climate-change-is-devastating-the-global-south.
5 Lisa Schlein, "Sub-Saharan Africa Facing Severe Food Shortage," *VOA*, July 12, 2022), https://www.voanews.com/a/sub-saharan-africa-facing-severe-food-shortage/6655559.html
6 "Over 57 Million Affected by Climate Disasters across Asia Pacific in 2021," *IFRC*, 2021, https://www.ifrc.org/press-release/over-57-million-affected-climate-disasters-across-asia-pacific-2021.
7 "Climate Change and Poverty: The Perfect Storm," *World Bank Blogs*, February 2, 2022, https://blogs.worldbank.org/latinamerica/climate-change-and-poverty-perfect-storm.
8 "Five Pacific Islands Lost to Rising Seas as Climate Change Hits," *The Guardian*, May 10, 2016, https://www.theguardian.com/environment/2016/may/10/five-pacific-islands-lost-rising-seas-climate-change.
9 "The Paris Agreement," *UNFCCC*, 2020, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
10 H. O. Pörtner, et al., *Climate Change 2022: Impacts, Adaptation, and Vulnerability - Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press. In Press.

changes are desperately needed.[11]

Delegates in the UNEA are not necessarily required to solve the entire issue of climate change. Indeed, some of the impacts of climate change are now unavoidable. Instead, they are tasked with examining how climate change affects socioeconomic areas. Delegates must understand how people worldwide, particularly in the Global South, are losing basic human rights to the changing environment. As more and more people are left with insecure food, water, jobs, or shelter, the UNEA must create comprehensive solutions to combat worsening climate conditions.

History and Description of the Issue

The Paris Agreement

Created at the 21st session of the United Nations Framework Convention on Climate Change (COP21), the Paris Agreement is an international treaty and agreement on combating climate change. 193 member states signed the convention in Paris in December 2015 before it came into effect in November of the following year.[12] This document aims to limit global warming to 1.5° Celsius and stop global greenhouse gas emissions from growing.[13] Its creation was a milestone achievement century considering that nearly all UN member states agreed on the legally binding document. This means that ambitious efforts to combat climate change were required to avoid consequences.

The Paris Agreement replaced the Kyoto Protocol, a similar yet less effective agreement made in 1997. The protocol urged 41 developed countries and the European Union to commit to reducing the output of six of the most produced greenhouse gasses.[14] It was widely hailed as the most significant environmental treaty at the time. While the Protocol was a success, it applied to only some countries, was not legally binding, and had few restrictions on global emissions. The Paris Agreement took environmental diplomacy in a new direction, with nearly every UN member state signing on. The agreement is much more progressive, addressing all climate change aspects. In particular, it especially references lesser-developed countries.

The Paris Agreement works on a five-year cycle. It requires all parties to create Nationally Determined Contributions (NDCs) based on that country's social and economic conditions. The NDCs are mandatory climate action goals shared with the United Nations Environment Programme (UNEP) and the Climate Change Secretariat. NDCs can include any measures taken to build resilience to climate change. For certain countries, long-term strategies are necessary to secure social development and curb industrialization's adverse effects.[15] These include plans for employment or housing that would be affected by changing temperatures and weather. The Paris Agreement also calls for long-term low greenhouse gas emission strategies (LT-LEDS). LT-LEDS are plans for complete carbon neutrality, meaning that the amount of emissions produced equals the amount of emissions reabsorbed. Furthermore, the Paris Agreement outlines a framework for intersecting areas affected by climate change. These include finance, technology, capacity building, and gender. This framework reaffirms the role developed countries should play in providing necessary financial assistance to lesser-developed economies.[16]

The Paris Agreement makes special note of lesser-developed countries and island nations. It contributes to the idea that the Global South experiences climate change differently, perhaps at an accelerated rate.[17] The Agreement instructs member states to work together, specifically with climate-vulnerable countries, for greater climate action. The Paris Agreement is the first to encourage cooperation and affordances between economically divided nations. However, several Global South countries, such as Eritrea, Iran, Iraq, Libya, and Yemen, have not yet ratified the Agreement.[18] As a result, these countries

11 H. O. Pörtner, et al., *Climate Change 2022: Impacts, Adaptation, and Vulnerability - Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.*
12 *UNFCCC*, "The Paris Agreement."
13 *UNFCCC*, "The Paris Agreement."
14 "What Is the Kyoto Protocol?" *UNFCCC,* 2020, https://unfccc.int/kyoto_protocol.
15 *UNFCCC,* "The Paris Agreement."
16 *UNFCCC*, "The Paris Agreement."
17 United Nations Framework Convention for Climate Change, Resolution 1/CP.21, Adoption of The Paris Agreement, FCCC/CP/2015/L.9/Rev.1. (Dec. 12, 2015), https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.
18 Abbey Krulik and Mohammed Mahmoud, "Looking ahead to COP26: How recent developments could shape this year's meeting," *Middle East Institute*, October 29, 2021, https://www.mei.edu/publications/looking-ahead-cop26-how-recent-developments-could-shape-

do not have access to the resources and support from other countries signed onto the agreement.

The Agreement is, for the most part, working as intended. The document has promoted opportunities for climate diplomacy. It has brought equality and responsibility for global emissions to the discussion table. Furthermore, it encouraged several approaches for financing, transparency, and flexibility for governments.[19] However, the Paris Agreement is still flawed. For one, many countries' NDCs were inconsistent with their historical emissions. Therefore, they were highly unrealistic and unlikely to be achieved. Even more, most experts, activists, and civilians argue that the current commitments are insufficient.

According to the policy analysis group Climate Action Tracker, current policies could cause a 2.7° Celsius global temperature increase by 2100.[20] This statement included the renewed NDCs from COP26 in Glasgow in November 2021. An increase of 2.7° Celsius would result in a quarter of the Earth's species going extinct. It would cause severe wildfires, droughts, and rainstorms. Sea levels would increase by several meters, drowning coastal cities.[21] Even worse, none of the world's most developed countries are on track to meet their goals made through the Paris Agreement. This group includes all of the Group of 20 (G20) countries. With the G20 making up 80 percent of the world's greenhouse gas emissions, this remains an area of concern.[22] As time progresses, carbon emissions are spiking. The International Energy Agency reported a six percent increase in carbon emissions in 2021.[23] Stark energy emissions increase highlights global demand for more action and commitment to Agreement terms.

Before the Paris Agreement, the Montreal Protocol of 1987 was adopted to phase out a group of environmentally damaging chemicals used in everyday household items.[24] Because the treaty included incentives, every country ratified the Protocol. Chemical companies recognized a growing market of replacements which consequently helped facilitate innovation in the industry. Additionally, the Protocol created a mechanism for wealthy countries to help pay the costs for poorer ones to comply. The Montreal Protocol was highly effective, with 98 percent of the chemicals being phased out entirely.[25]

The Montreal Protocol was successful because every country was incentivized to phase out harmful chemicals independently. In addition, the harmful chemicals were not as engrained in the economy as fossil fuels are. In terms of climate change and the Paris Agreement, the "free-rider" effect is common. This phenomenon means that countries can benefit from climate action regardless of personally contributing. Under the Agreement, countries do not continuously increase their efforts year after year. Instead, they just "ride the wave."[26] Due to a lack of incentive and clear consequences for deviance from treaty terms, the Paris Agreement fails to push countries towards actively improving their climate action efforts. Such a dampened attitude was evident at the 2021 United Nations Framework Convention on Climate Change (UNFCCC's COP26) session. This session was the first of the five-year cycles where countries had to update their initial climate targets based on updated data and scientific knowledge. However, several countries, including Australia, Brazil, Ethiopia, Mexico, Russia, Singapore, and more, did not submit more ambitious climate action targets.[27]

years-meeting.
19 Todd Stern, "The Paris Agreement and Its Future," *Brookings*, October 2, 2018, https://www.brookings.edu/research/the-paris-agreement-and-its-future/.
20 "Global Climate Agreements: Successes and Failures," *Council on Foreign Relations*, 2020, https://www.cfr.org/backgrounder/paris-global-climate-change-agreements.
21 Nigel Arnell, "COP26: What Would the World Be Like at 3° C of Warming and How Would It Be Different from 1.5°C?," *The Conversation*, November 2, 2021, https://theconversation.com/cop26-what-would-the-world-be-like-at-3-c-of-warming-and-how-would-it-be-different-from-1-5-c-171030.
22 *Council on Foreign Relations*, "Global Climate Agreements: Successes and Failures."
23 "Global CO2 emissions rebounded to their highest level in history in 2021," International Energy Agency, March 8, 2022, https://www.iea.org/news/global-co2-emissions-rebounded-to-their-highest-level-in-history-in-2021.
24 "About Montreal Protocol," *UN Environment Programme*, 2018, https://www.unep.org/ozonaction/who-we-are/about-montreal-protocol.
25 "Ozone Layer Recovery Is an Environmental Success Story," *World Meteorological Organization*, September 15, 2021, https://public.wmo.int/en/media/news/ozone-layer-recovery-environmental-success-story.
26 Katelyn Weisbrod, "Why the Paris Climate Agreement Might Be Doomed to Fail," *Inside Climate News,* July 28, 2021, https://insideclimatenews.org/news/28072021/pairs-agreement-success-failure/.
27 "CAT Climate Target Update Tracker: List of non updating countries," *Climate Action Tracker*, accessed September 10, 2022, https://climateactiontracker.org/climate-target-update-tracker/list-non-updating-countries/.

With the Paris Agreement forming the foundation for present and future climate diplomacy, the entire world relies on its successes to address the environmental crisis adequately. With the Global South disproportionately experiencing many effects of climate change, member states must recognize the Agreement's limitations in effectively addressing these vulnerable communities. Delegates are tasked with understanding the Agreement and using its affordances and limitations to create solutions for all.

Fossil Fuel Use

For over a century, burning fossil fuels has generated most of the energy required to power the planet and keep humans alive. Even today, oil, coal, and natural gas serve about 80 percent of our energy needs.[28] Fossil fuels largely shaped modern society through increases in industrial production, urban development, population growth, and technological and medical advances.[29] Despite efforts to curb fossil fuel usage, substantial global reliance remains. Unfortunately, we are severely paying the price.

We now understand that using fossil fuels for energy has caused an enormous toll on humanity and the environment. Fossil fuels are the leading cause of global warming, accounting for 74 percent of all greenhouse gas emissions.[30] Other effects of burning fossil fuels include ocean acidification, acid rain, and air and water pollution. The chemicals released from fossil fuel pollution cause serious human health effects. A study by Harvard University indicates that fossil fuel pollution is linked to heart attacks, stroke, lung cancer, and asthma.[31] A Fossil Fuel Non-Proliferation Treaty report states how burning carbon-based fuels undermines each of the 17 Sustainable Development Goals. Notably, some countries spend more on fossil fuels than poverty or hunger eradication.[32]

Despite several interventions from the United Nations and the International Energy Agency, like the Sustainable Energy for All Initiative launched in 2011, fossil fuels remain challenging to abandon. The Initiative attempted to double the share of green energy and ensure every person has access to clean

28 Melissa Denchak, "Fossil Fuels: The Dirty Facts," Natural Resources Defense Council, June 1, 2022, https://www.nrdc.org/stories/fossil-fuels-dirty-facts#:~:text=Even%20today%2C%20oil%2C%20coal%2C,water%20pollution%20to%20global%20warming.
29 Samantha Gross, "Why Are Fossil Fuels so Hard to Quit?," Brookings, June 8, 2020, https://www.brookings.edu/essay/why-are-fossil-fuels-so-hard-to-quit/.
30 "Climate, Environmental, and Health Impacts of Fossil Fuels," *EESI*, 2021, https://www.eesi.org/papers/view/fact-sheet-climate-environmental-and-health-impacts-of-fossil-fuels-2021.
31 "Fossil Fuels & Health," *Harvard T.H. Chan School of Public Health*, January 7, 2019, https://www.hsph.harvard.edu/c-change/subtopics/fossil-fuels-health/.
32 "The Fossil Fuel Non-Proliferation Treaty," *The Fossil Fuel Non-Proliferation Treaty*, 2014, https://fossilfueltreaty.org/fuelling-failure.

Air pollution from a Polish coal-based power plant
Credit: Petr Štefek

energy.[33] Still in 2014, one billion people worldwide lacked access to reliable and affordable energy in 2014.

Furthermore, energy needs will increase by 45 percent within the next 15 years.[34] The global electricity demand is growing almost twice as fast as the total energy supply. This demand is difficult to meet, especially without fossil fuels. Fossil fuels still provide the cheapest and quickest access to energy and development. In this context, it makes sense why Global South countries face a far more difficult time switching from fossil fuels to renewable energies. A notable example is in Algeria and Kazakhstan. These two countries are close to rich fossil fuel reserves in the Middle East. It is significantly cheaper to import fossil fuels, especially when governments are struggling financially.[35] Algeria's economy even increased by 4 percent in 2021 because of its growth through oil and gas.[36] Thus, a considerable challenge for many developing countries in Africa, Asia, and Latin America is how to foster economic development sustainably.

Another cause for fossil fuel reliance in the Global South was in reaction to the 1992 Rio Declaration on Environment and Development. This declaration famously highlights three principles. The first two are that countries have a right to development, and the development needs of emerging economies should be prioritized. Last, countries have a common but differentiated responsibility to address global development and climate change. However, under the George H.W. Bush administration, the United States rejected these principles by stating that "development is not a right."[37] Because of this statement, many lesser-developed countries were forced to develop by their own means. The easiest way to do so is through industrialization with fossil fuels. India recently cited this sentiment when they doubled down on coal production and consumption just a few months before the Paris Agreement was ratified.[38]

In addition to the development incentive, fossil fuel projects get much foreign investment. A report from the International Institute for Sustainable Development (IISD) details how international public finance still funds gas and petroleum projects in low-and-middle-income countries. Some even four times as much as solar or wind power. These investments lock countries into fossil fuel reliance with no clear exit into cleaner energy sources. This dependence creates debt cycles, amplifies poverty and unemployment, and threatens human health[39]

Quitting fossil fuels, especially for developing economies, is extremely difficult. However, 37 countries in the region belong to the Organization of Economic Cooperation and Development (OECD). In 2019, OECD states still accounted for 40 percent of global energy consumption.[40] With few effective policies to reduce fossil fuel-based energy consumption, the Global North and South will see numerous consequences. Unfortunately, only industrialized countries are likely to socially or financially recover from climate change's effects. Fossil fuels and their continued use highlight how different the Global North and Global South experience climate change. While some countries are financially capable of transitioning to renewable energy and avoiding climate change devastation, others cannot. The UNEA must suggest nuanced solutions to move away from fossil fuels without compromising the socioeconomic sectors of various countries.

Food Insecurity

Food security refers to the physical, social, and economic access to safe and nutritious food for all people at all times. It

33 "Sustainable Energy for All: An Overview of a Partnership That Delivers Results," *UN Energy,* Accessed July 23, 2022, https://www.un.org/millenniumgoals/pdf/SEFA.pdf.
34 Silvia Hostettler, "Energy Challenges in the Global South," *Sustainable Access to Energy in the Global South* 1, (Aug. 2015), 3-9, https://www.researchgate.net/publication/299538221_Energy_Challenges_in_the_Global_South.
35 Jessica Dillinger, "Fossil Fuel Dependency by Country," *WorldAtlas*, December 11, 2015, https://www.worldatlas.com/articles/countries-the-most-dependent-on-fossil-fuels.html.
36 "Algeria's Economic Update — April 2022," *World Bank*, April 18, 2022, https://www.worldbank.org/en/country/algeria/publication/economic-update-april-2022.
37 Greiner, "How Colonialism's Legacy Makes It Harder for Countries to Escape Poverty and Fossil Fuels Today."
38 Weisbrod, "Why the Paris Climate Agreement Might Be Doomed to Fail."
39 David Vetter, "Fossil Fuels Are 'Weapons of Mass Destruction' Preventing Economic Development, New Report Finds," *Forbes*, June 3, 2022, https://www.forbes.com/sites/davidrvetter/2022/06/01/fossil-fuels-are-weapons-of-mass-destruction-preventing-economic-development-new-report-finds/?sh=1bfc5e9e6b89.
40 Patrick Trent Greiner, "How Colonialism's Legacy Makes It Harder for Countries to Escape Poverty and Fossil Fuels Today," *The Conversation*, June 28, 2021, https://theconversation.com/how-colonialisms-legacy-makes-it-harder-for-countries-to-escape-poverty-and-fossil-fuels-today-159807.

An image showcasing the drought situation in Eastern Africa where crops have failed, livestock has died, and food prices have skyrocketed. Many are going without food daily.

Credit: USAID Africa Bureau

includes their food preferences and dietary needs for an active and healthy lifestyle.[41] To understand the complex reasons why food insecurity exists, we must establish a clear understanding of food sourcing.

The food system entails everything from agriculture to retail. The current food system feeds most of the world's population. Since 1961, the food supply per capita has increased by more than 30 percent.[42] Considerable agricultural and industrial growth has increased food production while access to food has declined—especially for rural populations. An estimated 821 million people are currently undernourished. 151 million children under five are growing up completely malnourished.[43]

Food insecurity and climate change share a direct link: the agricultural sector. Human-caused climate change affects temperatures, precipitation patterns, and crop yields. Even more, it can make land infertile. Research from 2015 revealed that the planet had lost around one-third of its fertile land in the previous 40 years. This loss was in large part due to climate disasters and poor conservation.[44] A report by the Food and Agricultural Organization (FAO) finds that climate change has already negatively impacted wheat and maize production in many areas around the globe.[45] A similar report by the IPCC shows that by the year 2050, we will probably see a 17 percent decrease in all global yields of grains, rice, and oil seeds.[46]

These trends are especially alarming for communities heavily reliant on agriculture for their livelihoods. More than 1.3 billion people live on weakening agricultural land, putting them at risk of depleted harvests that can cause hunger, poverty, and displacement.[47] In South Africa, 70 percent of the rural population depends on the agricultural center.[48] Low profits due to low yields because of climate change would plunge rural communities into deeper financial crises and food insecurity. Some farmers have no option but to sell their livestock to make up for lost income. As a result, farms become weak and have no money to invest. This causes changes to overall agricultural incomes, food markets, prices,

41 "Food security," International Food Policy Research Institute, accessed September 10, 2022, https://www.ifpri.org/topic/food-security.
42 "Special Report on Climate Change and Land," *IPCC,* 2016, https://www.ipcc.ch/srccl/chapter/chapter-5/.
43 "Global hunger continues to rise, new UN report says," *World Health Organization*, accessed September 10, 2022, https://www.who.int/news/item/11-09-2018-global-hunger-continues-to-rise---new-un-report-says.
44 Deborah Wolfe, "How Climate Change Impacts Poverty," *World Vision*, 2021, https://www.worldvision.ca/stories/climate-change/how-climate-change-impacts-poverty.
45 Food and Agricultural Organization, *Climate Change and Food Security: Risks and Responses,* (New York: 2015), https://www.fao.org/3/i5188e/I5188E.pdf
46 "Special Report on Climate Change and Land," *IPCC,* 2016, https://www.ipcc.ch/srccl/chapter/chapter-5/.
47 Wolfe, "How Climate Change Impacts Poverty."
48 "Agriculture and Food Security," USAID, May 24, 2022, https://www.usaid.gov/southern-africa-regional/agriculture-and-food-security.

and trade. Social issues around farming households are also impacted, limiting their ability to pay for other expenses, such as health, education, and the standard of living.[49]

The primary drivers of food insecurity are poverty and inequality. Climate change further exacerbates these aspects. Due to the lack of financial systems that normally allow countries to pay for their food, countries are now experiencing dire and immediate threats to food accessibility. What is especially concerning is that many communities cannot financially adapt. The food system is degrading rapidly in developing economies with large rural populations. Africa has the highest proportion of food insecurity, which has worsened since 1970. In 2020, more than one in five people in Africa faced hunger. This is more than double the proportion of hungry people in any other region. To add, 282 million of Africa's population are undernourished.[50] In West Africa alone, more than 27 million people needed immediate food assistance in 2021 due to drought, poverty, environmental degradation, and displacement. The malnourished population in sub-Saharan Africa remains in the 30 percent range.[51] The most substantial impact of climate change on the economics of agriculture is expected to be in sub-Saharan Africa. The poorest and already most food-insecure region is also expected to suffer the most.[52]

The latest IPCC report also details how food insecurity will increase the rate of food poisoning and other infectious diseases. Extreme rainfall events can increase the risk of outbreaks of water-borne diseases. This is more of a concern in areas where the water management systems are already flawed. Similarly, floods will strain sewage systems, exposing populations to inadequate sanitation and hygiene. Climate change will create a vicious cycle where disease is more prominent and climate-related food insecurity creates immunocompromised populations. As a result, human productivity decreases, creating more hunger.[53]

Food insecurity will affect rural and impoverished communities around the world. The Global North, in comparison, is known to have more safety nets to protect from climate change and food insecurity. Case studies point out how the food production system and rural populations are often disconnected in wealthier countries. In the United States, reliance on agriculture and food production in rural areas is much less pronounced than in rural communities in the Global South. The United States comprises 3,143 counties, of which only 14 percent depend on agriculture for their gross income. In contrast, this figure is 48 percent for African countries.[54] Even during the COVID-19 pandemic, the state of California held steady with agricultural production.[55] The US Families First Act also ensured that school-going children still received three meals a day. These examples highlight the unequal safety nets available to the Global North. Climate change strains the already systemic issues in economically developing countries as opposed to more developed ones.

Access to food is climate change's most pressing socioeconomic impact, especially in Africa. Decreasing food insecurity relies on good policy frameworks. Initiatives must close the gap between food produced and consumed, reduce food waste, and create sustainable solutions for lost fertile land. Food security relies on eradicating poverty and promoting employment opportunities. The UNEA must combine environmental and social policies to ensure that all people in the Global South have their fundamental human right to food.

Displacement Due to Weather-Related Disasters

Displacement refers to moving populations from one place to another, often from their established homes and communities to foreign destinations. These populations move in search of

49 Ahmad, Nafees, S. K. Shahnawaz, and Zaid Alam, *Food Insecurity: Concept, Causes, Effects and Possible Solutions,* (2021), 105-113, https://www.researchgate.net/publication/356613463_Food_Insecurity_Concept_Causes_Effects_and_Possible_Solutions.
50 Holger Kray et al., "The Urgency and Benefits of Climate Adaptation for Africa's Agriculture and Food Security," *Brookings*, March 24, 2022, https://www.brookings.edu/blog/africa-in-focus/2022/03/24/the-urgency-and-benefits-of-climate-adaptation-for-africas-agriculture-and-food-security/.
51 Ahmad, Nafees, S. K. Shahnawaz, and Zaid Alam, *Food Insecurity: Concept, Causes, Effects and Possible Solutions.*
52 "Global Food Security under Climate Change," *PNAS*, 2015, https://www.pnas.org/doi/10.1073/pnas.0701976104.
53 *PNAS,* "Global Food Security under Climate Change."
54 Subhashni Raj et al., "Food Security and Climate Change: Differences in Impacts and Adaptation Strategies for Rural Communities in the Global South and North," *Frontiers in Sustainable Food Systems* 5 (January 6, 2022), https://doi.org/10.3389/fsufs.2021.691191.
55 Raj et al., "Food Security and Climate Change: Differences in Impacts and Adaptation Strategies for Rural Communities in the Global South and North."

employment and safety. Sometimes, they move by force due to conflict and natural disasters. Displacement remains another saddening impact of climate change, especially across the Asian continent. In recent years, climate change has increased weather-related disasters. Droughts and heat waves ravage some parts of the planet, while others are prone to heavy flooding and storms. The number of weather-related disasters has increased by 500 percent over the past 50 years. According to the World Meteorological Organization (WMO), more than 11 thousand disasters were reported from 1970–2019. These caused over two million deaths and USD 3.64 trillion in losses.[56] More than 91 percent of these deaths occurred in developing countries.[57]

In the past decade, nearly 20 million people each year were affected by climate disasters and forcibly displaced. The Internal Displacement Monitoring Center (IDMC) reported 30 million new climate-related displacements in 2020.[58] COVID-19 posed additional challenges because it was challenging to maintain social distancing and hygiene measures in crowded places such as evacuation centers.[59] Another reason for this significant increase in displacement levels is that the population has skyrocketed in the past century. More people are living in hazard-prone areas, such as rivers and coastlines. People stay near these areas for employment, trade, and transport. In Asia, there is an exceptionally high population density in coastal megacities. Asia accounts for seven of the world's 10 most vulnerable countries to rising sea levels. These are Bangladesh, China, India, Indonesia, Japan, the Philippines, and Vietnam.[60] In the Global South overall, urban populations have increased by 326 percent since 1970. Because this growth is unplanned, the infrastructure is weak. Therefore, vulnerability to displacement increases.

While all regions of the world have been affected, East Asia, South Asia, and the Pacific have seen the highest levels of displacement by far, reports the WMO.[61] Global South countries have accounted for over 90 percent of weather-related displacements since 2008. In 2009, Cyclone Aila displaced 2.3 million in India and nearly a million in Bangladesh. Pakistan's 2010 floods destroyed 1.1 million homes and displaced about 11 million people. Many Pakistanis chose to resettle in major urban cities along river floodplains instead of returning home, increasing urban vulnerability.[62] The Philippines also had three significant typhoons between 2020 and 2021, which displaced 15 million people.[63] With such a large population of the planet being affected, these weather-related disasters truly display the devastating effects of climate change on the Global South.

Weather displacement also brings attention to international law regarding refugees and migrants. Climate disasters force many people to move across borders in search of safety. These people are often called "climate refugees." Climate refugees primarily originate from developing economies. India, Bangladesh, and the Philippines reported four million new climate displacements in 2019. In comparison, Europe reported only 700 thousand in the past 10 years.[64] Regardless, the issue is universal, considering many climate refugees that cross borders aim for Global North countries for social safety.

Unfortunately, many climate refugees were denied assistance based on their temporary status and reasons for migration. Governments believed they were not "true" refugees.[65] Kiribati is one island state desperately at risk of losing its land

56 "Weather-Related Disasters Increase over Past 50 Years, Causing More Damage but Fewer Deaths," *World Meteorological Organization*, August 31, 2021, https://public.wmo.int/en/media/press-release/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer.
57 *World Meteorological Organization*, "Weather-Related Disasters Increase over Past 50 Years, Causing More Damage but Fewer Deaths."
58 "Three out of Four Displacements in 2020 Were Weather-Related," *Red Cross Climate Centre*, 2020, https://www.climatecentre.org/4978/three-out-of-four-new-displacements-in-2020-were-weather-related/.
59 *Red Cross Climate Centre*, "Three out of Four Displacements in 2020 Were Weather-Related."
60 Asia Pacific Foundation of Canada, *Climate Change and the Risk of Displacement in Asia,"* Accessed July 19th, 2022, https://www.asiapacific.ca/sites/default/files/climate_refugees_v4.pdf.
61 "Disaster-Related Displacement in a Changing Climate," World Meteorological Organization, March 21, 2016, https://public.wmo.int/en/resources/bulletin/disaster-related-displacement-changing-climate.
62 "Climate-Induced Displacement: South Asia's Clear and Present Danger," *Wilson Center,* 2020, https://www.wilsoncenter.org/article/climate-induced-displacement-south-asias-clear-and-present-danger.
63 Nina Larson, "Philippines among Nations with Most Disaster-Related Internal Displacements in 2021," *GMA News* Online, 2021, https://www.gmanetwork.com/news/topstories/nation/832238/philippines-among-nations-with-most-disaster-related-internal-displacements-in-2021-report/story/.
64 Marta Rodriguez Martinez, "Extreme Weather Exiles: How Climate Change Is Making European Migrants," *euronews,* February 26, 2020, https://www.euronews.com/2020/02/26/extreme-weather-exiles-how-climate-change-is-turning-europeans-into-migrants.
65 Tetsuji Ida, "Climate Refugees – the World's Forgotten Victims," *World Economic Forum*, June 18, 2021, https://www.weforum.org/

to rising sea levels. In 2010, several Kiribati citizens applied for asylum, citing the climate disaster as their reason for refuge in New Zealand. The New Zealand government denied them asylum and moved the refugees back to Kiribati after their visas expired in 2015.[66] Notably, one Kiribati citizen filed a complaint with the UN Covenant on Civil Liberties. This Committee ruled that national courts must consider climate change's impacts when reviewing refugee status. This ruling is significant because it legitimizes climate change as a basis for refugee claims.[67] Furthermore, in 2018, the UN General Assembly developed the Global Compact on Refugees. It recognizes that "climate, environmental degradation, and disasters increasingly interact with the drivers of refugee movements."[68]

Despite this decision and the Global Compact, climate refugees are still not covered under the 1951 Convention Relating to the Status of Refugees. Therefore, their human rights and right to asylum are not always protected. In addition, there is no clear definition of climate refugees, making it difficult to protect them under official policy. Even more, there is very little data on climate refugees. These factors combine to make them the most vulnerable, "invisible" victims of climate change.[69]

A notable effort to curb the increasing displacement numbers is planned relocation. This refers to governments assisting whole communities in relocating to alternative locations. The relocation can be temporary or permanent. In Bangladesh, for example, the government invested in systems to evacuate whole communities and help them return after a cyclone. Policies that reduce moving costs or deal with immobility in threatened places make adaption to weather-related displacement more effective.[70]

Additionally, more developed countries can assist by offering support to those displaced. In February 2021, US President Joe Biden issued an executive order to create a report on how the government can help climate refugees. While some countries are opening pathways for the relocation of refugees, others are more resistant. For instance, Germany accepted 54,000 refugees in 2019. On the other hand, Japan only recognized 44 people as refugees. Overall, protecting the lives of climate refugees will require a collaborative effort from all countries.

While several UN committees have touched on this subtopic before, no clear policy plans have been laid out. Thus, the UNEA and delegates of this committee will need to develop solutions to address the issue. Cooperation among countries is thus crucial to working with cross-border migration without stepping out of the Assembly's mandate. Solutions should include reducing climate impacts and making financial provisions for displaced communities.

Poverty

Climate change especially impacts impoverished communities that cannot recover from its devastating effects. Furthermore, climate-displaced and fossil-fuel-reliant communities face unattainable healthcare, loss of shelter and job opportunities, and unreliable access to food. These impacts compound together and drive poverty and unemployment. More and more people are struggling to earn a living, feed their families, and create a stable home.[71] By 2050, more than 100 million people will be thrust into poverty because of climate change.[72]

Latin America and the Caribbean (LAC) will experience some of the worst economic impacts of climate change. Rising temperatures will lead to a 300 percent increase in extreme poverty in LAC by 2030.[73] Impoverished communities in the region live hand-to-mouth, meaning they can only provide for their basic and immediate needs. Any assets they may have are

agenda/2021/06/climate-refugees-the-world-s-forgotten-victims/.
66 "UN Landmark Case for People Displaced by Climate Change," *Amnesty International*, January 20, 2020, https://www.amnesty.org/en/latest/news/2020/01/un-landmark-case-for-people-displaced-by-climate-change/.
67 Ida, "Climate Refugees – the World's Forgotten Victims."
68 Ida, "Climate Refugees – the World's Forgotten Victims."
69 Tetsuji Ida, "Climate Refugees – the World's Forgotten Victims."
70 W. Neil Adger et al., "Urbanization, Migration, and Adaptation to Climate Change," *One Earth* 3, no. 4 (October 2020): 396–99, https://doi.org/10.1016/j.oneear.2020.09.016.
71 "The Facts: How Climate Change Affects People Living in Poverty," *Mercy Corps*, April 10, 2018, https://www.mercycorps.org/blog/climate-change-poverty
72 Deborah Wolfe, "How Climate Change Impacts Poverty," *World Vision*, 2021, https://www.worldvision.ca/stories/climate-change/how-climate-change-impacts-poverty.
73 "Climate Change and Poverty: The Perfect Storm," *World Bank Blogs*, February 2, 2022, https://blogs.worldbank.org/latinamerica/climate-change-and-poverty-perfect-storm.

not with a bank and, thus, uninsured. These assets are more likely to be damaged or destroyed during catastrophes without compensation or safety nets.[74] A World Bank report highlights four key areas where climate change will affect poverty and unemployment within LAC. These are labor productivity, food production, human capital, and healthcare. LAC has large numbers of agricultural or labor-intensive workers. Due to extreme heat from climate change, the region could experience productivity losses equivalent to almost three million full-time jobs. Each year, rising temperatures and rain volatility mean these workers produce less.[75]

Climate change also impacts human health, adding another burden to impoverished communities. For example, there is a link between storms in Brazil and higher infant mortality and lower birth weight.[76] Weakened infrastructure, rain shocks (abnormally high amounts of rainfall), and lowered water security from climate change increase water-borne diseases and intestinal infestations. Moreover, rain shocks reduce agricultural production, which can increase food insecurity.[77] Thus, pregnant citizens and infants in the region are more vulnerable to illness.

Poverty's effects transcend generations. When parents cannot afford healthcare, essential nutrition, and education, their children will face malnourishment, disease, and stunted growth. Lack of education decreases opportunities to move out of poverty. Previous examples show how climate change will devastate communities through increased natural disasters and economic hardships. For instance, Hurricane Mitch devastated Central America in 1998. Children in affected communities were 30 percent less likely to be taken to healthcare facilities when ill due to displacement, poverty, and trauma.[78] In Jamaica, children who had previously suffered from severe undernutrition between six to 24 months of age lagged in overall IQ, vocabulary, and education.[79]

The threat of poverty does not only affect the Global South. The Global North has experienced increasing poverty numbers. Countries like the US, Germany, France, and Japan reported millions of communities being unable to afford the cost of living. These increases mainly occur within

74 *World Bank Blogs*, "Climate Change and Poverty: The Perfect Storm."
75 Andrés Castañeda et al., "A New Profile of the Global Poor," *World Development* 101 (January 2018): 250–67, https://doi.org/10.1016/j.worlddev.2017.08.002.
76 Rudi Rocha and Rodrigo R. Soares, "Water Scarcity and Birth Outcomes in the Brazilian Semiarid," *Journal of Development Economics* 112 (January 2015): 72–91, https://doi.org/10.1016/j.jdeveco.2014.10.003.
77 Rocha and Soares, "Water Scarcity and Birth Outcomes in the Brazilian Semiarid."
78 Stephane Hallegatte et al., *SHOCK WAVES: Climate Change and Development Series Managing the Impacts of Climate Change on Poverty,* (Washington, DC: World Bank Group, 2016), 111-114.
79 Hallegatte et al., *SHOCK WAVES: Climate Change and Development Series Managing the Impacts of Climate Change on Poverty.*

Social inequality in Brazil has reached an all time high with many being laid off work due to increased inflation and heatwaves

Credit: Wilfredor

marginalized communities in the Global North and will be exacerbated by climate change.[80] It is clear that poverty and climate change are global problems that need comprehensive solutions.

Typically, discussions about financing climate change have been centered around the impact of climate change on national GDPs.[81] This approach does not cover climate change's effect on individual households, particularly in rural areas. Thus, climate financing has not adequately addressed poverty eradication and assisting poorer communities in recovering from the impacts of climate change. Delegates must develop robust solutions that create safe and sustainable solutions for families affected by climate change.

Climate Financing and Action Goals

Climate financing refers to local, national, and international funds supporting climate action. The UNFCCC, Kyoto Protocol, and Paris Agreement call for climate financing from all signed parties. They also endorse the idea of "common but differentiated responsibility." This is the idea that each country is responsible for climate action, but in different ways based on its financial capability and past global emissions.[82] In this context, Global North countries should fund climate action more than the Global South.

Current climate financing includes the Green Climate Fund (GCF) established in 2011 at COP16. It is now the world's largest climate fund. The GCF's mandate is to help developing countries raise and realize their Nationally Determined Contributions (NDCs) from the Paris Agreement. So far, the GCF has approved 69 projects, corresponding to around USD 2.5 billion. Some include Pakistan's distributed solar project, Ecuador's Galapagos island climate project, and the multilateral coral reef preservation project.[83]

Despite GCF, climate financing has been falling flat in the last few years. When the Paris Agreement was signed, developed countries pledged to channel USD 100 billion to less wealthy nations by 2020. In 2019, they barely reached USD 80 billion. Furthermore, no outline is dedicated to allocating the amounts each country should pay.[84] Thus, some countries contribute far less than what their GDP and past emissions dictate. These include the United States, Canada, Greece, and Australia.[85] Studies conclude that the US should have contributed roughly 50 percent of the USD 100 billion considering its large amounts of emissions.[86] Furthermore, in 2021, the GCF's total portfolio was raised from USD 7.5 billion to USD 10 billion. All major economies pledged money for this portfolio increase, except for Australia and the US.[87]

The work of the GCF itself is also not sufficient. Since its creation, the GCF has only approved 29 percent of projects. 57 accredited institutions can directly access GCF funds, but only 14 come from developing countries.[88] These 14 have only managed to get five projects approved. The total operating budget of these five projects was USD 350 million. Therefore, lesser-developed countries have only had access to 14 percent of the current mobilized funds of the GCF.[89] In contrast, Global North countries had 64 percent of their projects approved. This illustrates an evident inequality in access to climate funds.

An unprecedented amount of climate finance needs to be mobilized to implement the Paris Agreement effectively. The

80 "The Global North and Rising Poverty," *Harvard Kennedy School*, June 27, 2018, https://ksr.hkspublications.org/2018/06/27/the-global-north-and-rising-poverty/.
81 Stephane Hallegatte, Marianne Fay, and Edward B. Barbier, "Poverty and Climate Change: Introduction," *Environment and Development Economics* 23, no. 3 (May 16, 2018): 217–33, https://doi.org/10.1017/s1355770x18000141.
82 "Introduction to Climate Finance," *UNFCCC*, 2020, https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance/introduction-to-climate-finance.
83 "Approved Projects," *Green Climate Fund*, May 4, 2022, https://www.greenclimate.fund/projects.
84 Saleemul Haq,, "How to Fix the Failures of Climate Finance," *Development Matters*, February 18, 2022, https://oecd-development-matters.org/2022/02/18/how-to-fix-the-failures-of-climate-finance/.
85 Jocelyn Timperley, "The Broken $100-Billion Promise of Climate Finance — and How to Fix It," *Nature* 598, no. 7881 (October 20, 2021): 400–402, https://doi.org/10.1038/d41586-021-02846-3.
86 Timperley, "The Broken $100-Billion Promise of Climate Finance — and How to Fix It," 400–402,
87 Johannes F. Linn, "Mobilizing Funds to Combat Climate Change: Lessons from the First Replenishment of the Green Climate Fund," *Brookings*, February 18, 2020, https://www.brookings.edu/blog/future-development/2020/02/18/mobilizing-funds-to-combat-climate-change-lessons-from-the-first-replenishment-of-the-green-climate-fund/.
88 Komna Djabare, Kouassigan Tovivo, Koffi Koumassi, *Five years of the Green Climate Fund*, (Climate Analytics, 2021), https://climateanalytics.org/media/five_years_of_the_green_climate_fund.pdf.
89 Djabare, Tovivo, and Koumassi, *Five years of the Green Climate Fund.*

UNEP reports that by the year 2050, costs to prevent and adapt to the effects of climate change could cost as much as USD 500 billion a year. Developing countries note how they have no technical or financial support to fully realize their NDCs.[90] Many NDCs from the Global South contained conditional commitments to reduce emissions. These can only be implemented with direct access to financial resources.[91] Zimbabwe, Zambia, Venezuela, Ecuador, Somalia, Rwanda, and Panama are just a few countries that could not meet their 2021 goals.[92] Global South countries are in incredible danger with the extreme cost of climate change and no one to hold accountable for financial pledges.[93]

The NDC Partnership notes two financial roadmaps for mobilizing financial flows toward NDC implementation. First, countries must integrate the NDCs into national planning, budgets, and revenue. Second, they must enhance access to climate finance from public and private sources for specific projects and initiatives.[94] With the UNEA's mandate focusing on climate financing, the committee will need to use these steps to develop solutions for this financial crisis. Delegates will need to understand how and why the Global South cannot access funds like the GCF and come up with creative solutions.

Current Status

Case Study: The Floods in Bangladesh

The effects of climate change have unfortunately manifested in Bangladesh, a country along the South Asian coast. Despite producing only 0.56 percent of carbon emissions, Bangladesh ranks seventh on the list of countries most vulnerable to climate devastation. Bangladesh's flat topography, dense population, and weak infrastructure make it uniquely vulnerable to climate change. Additionally, rising temperatures accumulate more water vapor in the air. This creates longer dry spells in between extremely heavy downpours. The cycle of drought and heavy rain damages the country's agriculture and rural communities. With the entire country fewer than 15 feet above sea level, the effects of climate change have been devastating. Bangladesh has experienced economic losses worth USD 3.7 billion and over 180 weather disasters related to climate change. [95]

All around the world, climate change is making rainfall more erratic and more intense. In Bangladesh, this reality is especially true. The effects of more substantial downpours—combined with rising temperatures melting the Himalayan glaciers that feed the country's rivers—leave the country far more prone to devastating floods. Increasingly, supercharged water levels in the Ganges-Meghna-Brahmaputra River Basin are destroying entire villages and hundreds of thousands of livelihoods. These floods have resulted in over 10 million Bangladeshi climate refugees, emphasizing the need to address climate migrants.[96]

In May 2022, a series of catastrophic floods started in the Northern part of Bangladesh. A second series followed shortly after, which lasted through June. These water disasters are estimated to have displaced and injured 15 million people. Bangladesh's Department of Public Health Engineering reported that the flooding destroyed over 106 thousand public water access points. To this day, accessible drinking water remains a problem. Nearly eight thousand cases of water-borne diseases have been reported.[97] This crisis has been classified as one of the worst climate change-related events ever, causing over 120 deaths. Villagers swam back into the ruin with makeshift rafts to rescue community members that

90 Taryn Fransen et al., *Enhancing NDCs: A Guide to Strengthening National Climate Plans,* (UNDP, 2019), 9-11.
91 "Full NDC Synthesis Report: Some Progress, but Still a Big Concern," *UNFCCC*, 2020, https://unfccc.int/news/full-ndc-synthesis-report-some-progress-but-still-a-big-concern.
92 "CAT Climate Target Update Tracker," *Climate Action Tracker*, 2022, https://climateactiontracker.org/climate-target-update-tracker-2022/.
93 "Navigating International Climate Finance," *NDC Partnership*, 2015, https://ndcpartnership.org/about-ndc-funding-and-initiatives-navigator.
94 *NDC Partnership*, "NDC Finance."
95 "How the Climate Crisis Is Impacting Bangladesh," *Climate Reality Project*, April 7, 2022, https://www.climaterealityproject.org/blog/how-climate-crisis-impacting-bangladesh.
96 *Climate Reality Project,* "How the Climate Crisis Is Impacting Bangladesh."
97 Sarah Ferguson, "UNICEF USA BrandVoice: UNICEF Providing Emergency Aid after Devastating Floods in Bangladesh," *Forbes*, July 11, 2022, https://www.forbes.com/sites/unicefusa/2022/07/11/unicef-providing-emergency-aid-after-devastating-floods-in-bangladesh/?sh=19fa2f43547f.

Homes and communities have been flooded and destroyed in Bangladesh

Credit: Marufish

were left behind.[98]

The flooding has washed away infrastructure, farmlands, and livelihoods. It has displaced millions of people. Over 155 thousand homes, roads, and essential infrastructure have been washed away. Health facilities, unions, and community centers have been destroyed. Those that remain have been converted to temporary shelters.[99] These impacts highlight the long-term effects of climate change that communities in the Global South are already experiencing. Local government officials said that it would take at least 10 to 15 years to recover from the floods.

By 2050, climate change will displace one in every seven people in Bangladesh. With a projected 19.6-inch rise in sea level, Bangladesh may lose approximately 11 percent of its land. Up to 18 million people may have to migrate because of sea-level rise alone.[100] Due to the sea-level rise, many Bangladeshis are moving inland to urban centers. Dhaka, the capital city, has seen a massive increase in population over the last 30 years. However, population growth has not been matched with sustainable infrastructure.[101] There are inadequate hospitals, clinics, schools, mosques, and temples. Large-scale disruption to education from climate disasters contributes to low literacy rates, while long-term healthcare and support are becoming exceedingly difficult.[102]

Despite these unfortunate circumstances, Bangladesh has made numerous efforts to prevent the effects of climate change. One notable initiative is the Flood Action Plan of 1990. The Plan details actions to improve infrastructure stability, control flood paths, and increase food preparedness.[103] Still, Bangladesh faces substantial obstacles to addressing this issue. Only 8 percent of the territory of the river floodplains falls within Bangladesh.[104] The remaining area belongs to neighboring countries. Bangladesh suffers the most as the water flows down the Himalayan mountains and Indian rivers towards the flat area. All countries within the region are

98 "Floods in Bangladesh Turn People into Paupers Overnight," *Anadolu Agency*, 2022, https://www.aa.com.tr/en/asia-pacific/floods-in-bangladesh-turn-people-into-paupers-overnight/2634150.
99 "Bangladesh, Asia-Pacific," *ReliefWeb*, July 10, 2022, https://reliefweb.int/report/bangladesh/bangladesh-asia-pacific-floods-emergency-appeal-no-mdrbd028-operational-strategy.
100 *Climate Reality Project,* "How the Climate Crisis Is Impacting Bangladesh."
101 "How Climate Change Deepens Bangladesh's Fragility," *United States Institute of Peace*, May 16, 2022, https://www.usip.org/publications/2021/09/how-climate-change-deepens-bangladeshs-fragility.
102 International Federation of the Red Cross/Crescent, *EMERGENCY APPEAL OPERATIONAL STRATEGY | Bangladesh, Asia-Pacific | Floods,* (IFRC, 2022), 3-6.
103 "Flood Action Plan," Banglapedia.org, 2021, https://en.banglapedia.org/index.php/Flood_Action_Plan.
104 Faisal Mahmud, "Bangladesh Floods: Experts Say Climate Crisis Worsening Situation," *Al Jazeera*, June 22, 2022, https://www.aljazeera.com/news/2022/6/22/bangladesh-floods-experts-say-climate-crisis-worsening-situation..

affected, but unfortunately, Bangladesh sees the worst effects. In order to truly combat the floods, Bangladesh must work with the surrounding countries to create effective policies.

Fortunately, actions have been taken worldwide to assist Bangladesh. In partnership with international Non-Governmental Organizations (NGOs) and local bodies, UNICEF has appealed to mobilize funds to provide relief for Bangladeshi families. The Bangladesh Red Crescent is spending USD 10 million on relief and recovery operations. Volunteer teams on the ground have been distributing food and drinking water. The International Red Cross has launched an emergency appeal to raise a further USD 7.8 million. This fund could help another 300 thousand people. Furthermore, UNICEF has assisted local medical teams through several initiatives. Through their support in routine immunization, around one thousand children were vaccinated in the flood-affected areas. In addition, since the second flood started on June 17, 3,000 people have received medical treatment in flood shelters and communities. UNICEF also delivered therapeutic milk, nutrition kits, and water filters to health facilities in Sylhet and Sunamganj districts. This aid reached approximately 360 children with Severe Acute Malnutrition.[105]

The disastrous floods in Bangladesh are a direct reflection of the effects of climate change. It exemplifies how climate change disproportionately affects Global South. These countries may be geographically disadvantaged. Even more, they do not have the economic and social safety nets to keep their people safe from such disasters. The UNEA must promote cross-border communication and improve service delivery for food, water, and electricity access.

Case Study: The South African Energy Crisis

The previous case study showed how climate change directly affects the weather through natural disasters. In contrast, this case study discusses the impact of climate financing. Insufficient climate action and financing are exacerbating South Africa's energy crisis.

Beginning in 2007 and continuing to this day, South Africa has been experiencing an energy crisis. Due to a lack of power stations, design flaws, corruption, and worker strikes, the electricity demand in South Africa exceeds the supply. Shortages in the electricity system unbalance the network, which can cause it to collapse. The current solution is rounds of "load-shedding." This term refers to a series of planned blackouts during the day. The power is forcibly turned off for 2–4 hours at a time.[106]

In 2022, the energy situation worsened. In 2021, a total of 1,152 hours of blackouts were implemented throughout the whole year. As of July 2022, this figure is roughly 1,104 hours. From January through June 2022, South Africa had already implemented blackouts for almost the same amount of time the entirety of 2021. Parts of the country have ramped up load-shedding. The power will go out multiple times a day for a few hours.[107] In July 2022, the country entered stage six for the first time since December 2019. Stage six means it had to cut six thousand megawatt hours to prevent a complete nationwide blackout and economic failure.[108] Nationwide, power cuts are headed for a record and may increase by 10 times by 2026.[109]

Increasing blackouts are highly concerning because every stage of load-shedding causes about ZAR 250 million in losses (approximately USD 15 million).[110] Furthermore, global warming is actively making the energy and economic needs of South Africa rise. At the same time, it creates instability in electricity production. In 2022, South Africa started burning 9 million liters of fuel daily to keep the electricity flowing.[111] The

105 UNICEF, *Bangladesh Country Office Humanitarian Situation Report No. 4,* (Bangladesh, UNICEF Official, June 2022), https://www.unicef.org/media/123081/file/Bangladesh-Floods-SitRep-27-June-2022.pdf.
106 "What Is Load Shedding?," *City of Joburg*, 2019, https://www.joburg.org.za/departments_/Pages/MOEs/city%20power/What-is-load-shedding.aspx.
107 Kevin Brandt, "Eskom Ramps Power Cuts to Stage 4 as Shortage in Generation Capacity Persists," *EWN*, August 4, 2022, https://ewn.co.za/2022/08/04/eskom-ramps-power-cuts-to-stage-4-as-shortage-in-generation-capacity-persists.
108 Vumani Mkhize, "South Africa Electricity Crisis: No Power for up to Six Hours," *BBC News*, July 7, 2022, https://www.bbc.com/news/world-africa-62053991.
109 Dominic Naidoo, "LOOK – Load Shedding: SA Has No Place for Large-Scale Gas Power, Study Finds," *IOL*, June 28, 2022, https://www.iol.co.za/news/environment/look-load-shedding-sa-has-no-place-for-large-scale-gas-power-study-finds-d4bde0ef-40c8-4f37-9542-39a6c16bd78e.
110 Mkhize, "South Africa Electricity Crisis: No Power for up to Six Hours."
111 "Eskom Burnt R626 Million in Diesel in 20 Days," *MyBroadband*, 2022, https://mybroadband.co.za/news/energy/441914-eskom-

country is increasing coal production with no improvements in energy stability.

South Africa is currently the world's 13th largest producer of greenhouse gas emissions. 80 percent of its power grid relies on coal mining and fossil fuel burning. Unfortunately, South Africa's inaction towards climate change has worsened its energy crisis. South Africa has historically not produced policies and domestic targets that will contribute to the 1.5 degree Celsius goal set out by the Paris Agreement. Furthermore, the COVID-19 pandemic took a toll on the country's health, social, and economic systems. The government then looked at fossil fuel investments as a means to recover financially. This is an example of when countries are trapped in using fossil fuels for economic development and stability.

As mentioned earlier, climate change causes increased droughts, agricultural damage, and food insecurity. This is highly prevalent in sub-Saharan Africa and affects South Africa the most. South Africa is warming at double the rate of any other in the world.[112] Additionally, the country heavily relies on its agricultural exports and coal production. Both industries employ nearly 20 percent of the workforce and account for USD 2 billion.[113] Lower agricultural yields, droughts and heatwaves, and an unstable economy are causing massive losses.

Fortunately, South Africa has made progress towards a more sustainable pathway. At COP26 in 2021, an international energy partnership was launched between the US, UK, France, Germany, and a few other countries. The partnership created climate financing grants for South Africa to move away from fossil fuels.[114] The deal involves USD 8.5 billion in grants, investments, and lower-interest debt for South Africa. The deal also includes a consultative process during which young people across the country can voice their opinions and share climate solutions. This initiative will empower and educate youth.

On July 31, 2022, South African President Cyril Ramaphosa announced a new energy plan. The plan includes improving the current energy fleet and increasing independent and

burnt-r626-million-in-diesel-in-20-days-enough-to-fill-a-million-vw-polos.html.

112 "If We Don't Take Climate Action Now, This Is What Life in South Africa Will Look like – Centre for Environmental Rights," *Centre for Environmental Rights*, September 28, 2021, https://cer.org.za/news/if-we-dont-act-now-on-climate-change-this-is-what-life-in-south-africa-will-look-like.

113 Marleny Arnoldi, "Collaboration between Public, Private Sectors Contribute to Record Agricultural Exports," *Engineering News*, 2022, https://www.engineeringnews.co.za/article/collaboration-between-public-private-sector-contribute-to-record-agricultural-exports-2022-02-22.

114 "South Africa Secured $8.5 Billion to Transition Away from Coal. It'll Be a Test Case.," *The New York Times*, 2022, https://www.nytimes.com/2021/11/03/world/africa/south-africa-coal-renewables.html.

Mpumulanga, a South African province, is now noted as the world's largest NO_2 hotspot, where 2,000 people die from pollution each year

Credit: Kgara Kevin Rack

private power production. It also promotes investment in solar energy and restructuring the national grid to be more sustainable.[115]

This case study serves as a call to action for delegates to understand the many different aspects of climate change. Climate change impacts politics and the economy as much as the environment. The energy crisis is only persistent because of South Africa's inadequate infrastructure. Its developing economy has difficulty transitioning to expensive green energy options. Even more, it is challenging to curb other effects of climate change, such as food insecurity, poverty, or agricultural damage.[116] South Africa is just one example of a country locked into fossil fuel dependence. The UNEA should use this as an example of what policies must be implemented worldwide to prevent similar energy crises.

Sustainable Development Goals

The 2030 Agenda for Sustainable Development was adopted by all United Nations Member States in 2015. It provides a shared blueprint for peace and prosperity for people and the planet. Several Sustainable Development Goals (SDGs) relate to climate change in the Global South. SDG 11: Sustainable Cities and Communities aims to make cities and human settlements inclusive, safe, resilient, and sustainable. The goal promotes a global shift towards green cities while recognizing the need for inclusive policies considerate of marginalized groups. A number of this SDG's subtopics deal with urbanization. However, the goal also lays out a framework for how people living in urban areas adopt green and sustainable practices. It also discusses the resource gap between developed and developing countries regarding financial and technical capacity.[117]

Another SDG closely related to this topic is SDG 12: Responsible Consumption and Production. This goal aims to ensure that supply chains provide equal access and sustainable patterns. This goal highlights the triple threat of climate change, pollution, and biodiversity loss. Although this goal seems complex, its primary goal is to protect people and the environment from pollution, manufacturing, and consumption. SDG 12's targets aim to reduce the environmental impacts of the energy, food, agriculture, and pollution sectors. Understanding this goal should allow for solutions catered around energy, agriculture, and production. These three are leading areas of concern in Global South countries.[118]

The third prominent SDG related to this topic is SDG 13: Climate Action. This goal advocates for all to take urgent action to combat climate change and its impacts. All the targets of this goal are vital and related. The goal integrates components of environmental education, awareness, and individual and collective climate action initiatives. At the same time, it recognizes vulnerable communities in the effort to address climate change.[119]

The above three goals are highly relevant. They target poverty, unemployment, displacement, food security, sustainable cities, and climate action. It is worth noting, however, that this topic is extensive, and many of the SDGs apply. Goals 14 and 15 are Life Below Water and Life on Land, respectively. Each bears some of the impacts of climate change. Goals 2 and 7 are for ending hunger and access to clean and affordable energy. With some of the intersectional aspects of climate change, we have seen how food security is directly related to the changing climate. Moreover, without clean energy, countries depend on fossil fuels, which causes climate change and hinders economic growth. As such, all of the SDGs are prevalent to this topic, focusing on Goals 11, 12, and 13. Stressing these three goals will guide delegates in addressing the socioeconomic impacts caused by climate change, especially within the Global South. These three goals highlight the importance of responsible and equitable action from the UNEA and countries worldwide.

115 "President Cyril Ramaphosa: Address to the Nation on Energy Crisis," *South African Government*, news release, 2022, https://www.gov.za/speeches/president-cyril-ramaphosa-address-nation-energy-crisis-25-jul-2022-0000.
116 "Junk Status – What Is Awaiting SA?," *Solidariteit Wêreld*, November 19, 2019, https://solidariteit.co.za/en/junk-status-what-is-awaiting-sa/.
117 "Sustainable Development Knowledge Platform," *United Nations*, 2020, https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals.
118 *United Nations,* "Sustainable Development Knowledge Platform."
119 *United Nations,* "Sustainable Development Knowledge Platform."

Bloc Analysis

Points of Division

People across the globe experience the consequences of climate change. Countries are well aware of its drastically negative effect both domestically and internationally. However, points of contention over climate change lie in the execution of policy and infrastructure. Most Global North countries argue for equal action, while Global South countries argue for differentiated action.[120] They believe countries in the Global North that are responsible for most carbon emissions should take on more of the burden. This is a critical point of division in climate discussions and why many Global South countries are left unsatisfied at larger forums. The bloc guidelines below shape how countries fight climate change. Some stable economies will not experience poverty, food insecurity, and displacement as severely as others. As a result, their priorities and capacity to enact meaningful climate action can differ from other vulnerable and unstable economies. The indices used below are the Germanwatch's Climate Risk Index (CRI) and Climate Action Tracker. The CRI ranks countries based on their vulnerability to climate change. In contrast, the Climate Action Tracker tracks countries' climate goals and policies.

Countries Most Vulnerable to Climate Change

This bloc includes countries most vulnerable to climate change based on the 2021–2022 CRI. The index considers the risks and effects of storms, droughts, floods, and heat waves. This bloc also includes Global South countries that do not possess any ambitious climate targets or policies or are not aligned with the Paris Agreement. Members of this bloc may also be countries with poor NDC rankings on the Climate Action Tracker or low financial ability to adapt to climate change. Countries aligned with the criteria above are most vulnerable to climate change effects.

Nevertheless, while some countries might be prone to natural disasters, their economies or green strategies allow them to recover quickly from natural disasters. These countries, such as Japan and Costa Rica, have social and economic safety nets to curb serious weather effects. Therefore, they would not be in this bloc.

The countries in this bloc interact with climate change in various ways. Due to their economic status, geographical location, or governments, they often do not prioritize climate adaptation and mitigation. Their current economic and social development does not allow them to shift away easily from high-carbon pathways or recover from disasters. These countries rely heavily on fossil fuels for growth. They, therefore, push for Global North countries to pay their fair share towards climate action, citing the Paris Agreement's "common but differentiated responsibility."[121] Examples of countries in this bloc include Afghanistan, Zimbabwe, Mozambique, Malawi, and the Bahamas.

Countries With Some Climate Action Progress

This bloc includes countries considerably on the higher end of the CRI. They are not as vulnerable to climate change. According to the Climate Action Tracker, they have ratified the Paris Agreement but only have "almost sufficient" goals. These countries have climate policies but have withdrawn from climate discussions or have not updated their NDCs in 2021 at COP26.

While there is no clear push towards increased climate action in these countries, members of this bloc have the capabilities to pursue more extraordinary efforts. These countries have made progress towards green energy and sustainable cities but still rely heavily on fossil fuels. These countries do not bear the full brunt of climate change as opposed to many Global South countries. Countries in this bloc are economically capable of taking climate action but are hindered due to leadership or other circumstances. Examples of countries in this bloc include Australia, Mexico, Russia, Saudi Arabia, and Singapore.

120 Christopher Todd Beer, "Climate Justice, the Global South, and Policy Preferences of Kenyan Environmental NGOs." *The Global South* 8, no. 2 (2014): 84–100. https://doi.org/10.2979/globalsouth.8.2.84.
121 "Introduction to Climate Finance," *UNFCCC*, 2020, https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance/introduction-to-climate-finance.

COP26 in Glasgow, 2021, where government leaders discussed global climate issues

Credit: Dati Bendo

Countries With Safety Nets to Curb Climate Change Effects

This bloc includes countries who, despite their climate action policies (good or bad), are economically and socially protected from the effects of climate change. They will feel the effects of climate change, especially in marginalized and impoverished communities, but have a higher capacity to recover or already have green policies in place. These countries are aligned with and ratified the Paris Agreement. Bloc members have made significant progress towards green energy, sustainable communities, and ambitious NDCs.

However, it is worth noting that this bloc also contains room for some outlier countries. Some may rely heavily on fossil fuels. They may also have no climate policies but have more economic and social protections due to their high GDPs. Therefore, they will not feel the effects of climate change as much as the vulnerable Global South. This bloc includes the most sustainable countries and many members of the Global North. It also includes countries belonging to the OECD that are classified as highly industrialized and have made great strides in climate action. With any of the above criteria, these countries are grouped because they will not face severe repercussions from the rising temperatures. As a result, some countries in these blocs push for equality in climate action, as opposed to the "common but differentiated responsibility" outlined in the Paris Agreement. Example bloc members include Japan, the United States, Norway, Denmark, Germany, and China.

Committee Mission

The United Nations Environment Assembly (UNEA) is the highest decision-making body on all critical environmental issues.[122] All decisions are in line with the 2030 Agenda for Sustainable Development. The UNEA's mandate is to set the global environmental agenda in cooperation with multiple UN institutions and its own respective body, the United Nations Environment Programme.[123] With climate change being one of the greatest threats to humanity as we know it, UNEA must take immediate and comprehensive action. In particular, renewed focus must be given to the Global South, which is disproportionately impacted.

The UNEA has the authority to set the tone and agenda for all other relevant bodies regarding critical environmental

122 "About the United Nations Environment Assembly," *United Nations Environment Assembly*, 2012, https://www.unep.org/environmentassembly/about-united-nations-environment-assembly.

123 "United Nations Environment Assembly of the UNEP (UNEA)," *UN Environment Programme*, 2018, https://www.unep.org/events/civil-society-events/united-nations-environment-assembly-unep-unea

challenges. Delegates must consider the committee's mandate and power while drafting resolutions. It must be noted that the UNEA is solely a recommendation forum. It cannot force its policies but should encourage countries to follow its initiatives. Furthermore, the UNEA does not have control over solving non-environmental issues. However, delegates must be conscious of the interconnected nature between these topics and the environment. This means asking how climate change and other environmental issues impact the world, specifically the Global South. Solutions should be built around pathways that reduce climate change's effects. Examples include decreasing emissions, increasing infrastructure, sustainable adaptation and mitigation, and strengthening climate action goals. Increasing climate financing is also within the Assembly's mandate.

In addition, delegates are encouraged to research and follow conventions set by related bodies and organizations. These include the World Meteorological Organization, the Intergovernmental Panel on Climate Change, the Food and Agricultural Organization, and the UNFCCC COP conferences. The UNEA's agenda directly influence these bodies. They offer relevant and sometimes more nuanced discussions around specific ideas within the broader topic of climate action.

The goal of this session is for members of the Assembly to increase climate resilience and build toward a sustainable society. Delegates will have to create practical solutions and negotiate the global and domestic responsibility of each country's contribution towards climate action. Without comprehensive solutions, climate change will continue to threaten the livelihoods of millions across the globe.

UNEA

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TOPIC B:
THE ENVIRONMENTAL IMPACT OF THE PHARMACEUTICAL INDUSTRY

Photo Credit: Lynn Betts

Introduction

The origins of the modern pharmaceutical industry are the apothecaries, herbalists, and chemists that provided medicines for their local communities. However, the way healthcare was delivered started to change with the discovery of chemicals like aspirin, insulin, and penicillin. These chemicals need to be manufactured through complex industrial processes. These were not practical for local apothecaries to take on. The cost of making the new chemicals favored the creation of large pharmaceutical companies such as Eli Lilly, Merck, and Pfizer. Rapidly growing demand for these chemicals only accelerated the growth of these multinational companies. For example, during World War II, intense demand for penicillin for wounded soldiers led to an explosion of large pharmaceutical factories.[1]

As of 2020, the global pharmaceutical industry is worth over USD 1.2 trillion. Large companies based out of North America and Europe dominate the industry.[2] These companies have much more diverse operations than the apothecaries they started as. Modern pharmaceutical companies develop new drugs through government-regulated trials and testing. Successful drugs are then manufactured and distributed worldwide, backed by sophisticated sales and marketing teams.[3] The impact of this has been enormous. During the 50 years between 1970–2020, the average global life expectancy grew by 24 percent from 59 years to 73 years.[4]

With such diverse and expansive operations, it is perhaps unsurprising that pharmaceutical companies can have dramatic environmental impacts. Like many global industries, the pharmaceutical industry significantly contributes to environmental pollution, climate change, and other environmental threats. It also contributes to the rise of dangerous new diseases that resist traditional antibiotics, threatening human and animal life. Polluted water runoff does not respect national boundaries or existing treaties. To protect the progress humans have made toward developing long and happy lives, the UNEA must push for coordinated, global action. Dramatic change is necessary to reduce the environmental damage caused by the pharmaceutical industry.

History and Description of the Issue

Greenhouse Gas Emissions

The pharmaceutical industry is one of the leading contributors to global warming. Climate change is primarily driven by greenhouse gas emissions (GHGE), which include gases such as carbon dioxide and methane. The Earth constantly absorbs heat and energy from the Sun, but it also releases energy back into space. As greenhouse gases are released into the atmosphere, they trap the heat the Earth releases, causing the atmosphere to warm. Today, greenhouse gas levels in the atmosphere are higher than at any point in the last two million years. This causes numerous severe problems for our planet's delicate ecosystems. In 2015, 196 countries signed the Paris Climate Agreement. This agreement set ambitious targets for how much each country needed to reduce its emissions by 2030.[5] Unfortunately, most countries are falling behind in meeting those goals.

One 2019 study calculated US companies' GHGE per million USD of revenue. Scaling emissions by revenue is a way to compare companies of different sizes and industries fairly. On this basis, the study found that pharmaceutical companies released 55 percent more GHGE than the automotive industry. It also found that of the 15 largest US pharmaceutical

1 "A History of the Pharmaceutical Industry," pharmaphorum, September 1, 2020, https://pharmaphorum.com/r-d/a_history_of_the_pharmaceutical_industry/.
2 "Global Pharmaceuticals Market Report 2021-2030 Featuring Major Players - Pfizer; F. Hoffmann-La Roche Ltd; Sanofi; Johnson & Johnson and Merck & Co," Cision PR Newswire, April 1, 2021, https://www.prnewswire.com/news-releases/global-pharmaceuticals-market-report-2021-2030-featuring-major-players---pfizer-f-hoffmann-la-roche-ltd-sanofi-johnson--johnson-and-merck--co-301260487.html.
3 Lisa Ellis, "Snapshot of the American Pharmaceutical Industry," Harvard T.H. Chan School of Public Health Executive and Continuing Professional Education, July 14, 2016, https://www.hsph.harvard.edu/ecpe/snapshot-of-the-american-pharmaceutical-industry/.
4 "Life Expectancy at Birth, Total (Years)," The World Bank, accessed August 30, 2022, https://data.worldbank.org/indicator/SP.DYN.LE00.IN.
5 "What Is Climate Change?," United Nations (United Nations), accessed August 23, 2022, https://www.un.org/en/climatechange/what-is-climate-change.

companies, only four reached the 2020 emissions targets under the Paris Climate Agreement. Alarmingly, three had increased their rate of GHGE since 2015, when the Paris Climate Agreement was signed. These emissions must be reduced to reach the ambitious targets that have been set.[6]

A major portion of these emissions come from the manufacturing process. Thankfully, engineers have developed ways to make pharmaceutical plants more efficient and sustainable. For example, in 2017, the US company Amgen opened a new plant in Singapore using various cutting-edge techniques. The effort was successful, as the plant emitted 69 percent less GHGE than plants using traditional methods. In 2018, Amgen announced the construction of a similar plant in the United States. The French manufacturer Sanofi has been trying similar techniques, achieving an 80 percent reduction in GHGE compared to their traditional plants.[7] While these developments are very promising, the rate of progress is still slow. New manufacturing plants take time to build, and replacing the old plants would take decades. Most countries are already missing their 2030 targets under the Paris Climate Agreement, and the climate may not be able to wait for decades.

Besides manufacturing, a sizable portion of emissions comes from the supply chain. The supply chain is the network of avenues through which companies get the raw materials to manufacture their goods. These raw materials often come from other parts of the globe. There are significant GHGE released during transit. Emissions are highest for products in the "cold chain," a part of the supply chain for products that must remain refrigerated or frozen at all times. Cooling these materials adds to the GHGE released during transit. Various solutions are being explored, including alternative fuels and creating raw materials closer to the pharmaceutical plants. However, none of these solutions have been adopted on a national scale yet.

Environmentally Persistent Pharmaceutical Pollutants (EPPPs)

Greenhouse gases and climate change are grave threats to our planet. However, they are not the only danger the pharmaceutical industry poses. The manufacturing process creates other waste products that can enter the environment with catastrophic effects. Some of these chemicals linger for long periods. This is often intentional, as companies want their products to last for a long time rather than expire. Therefore, these chemicals are called environmentally persistent pharmaceutical pollutants (EPPPs). Because they last so long, they take a long time to degrade in the environment. They are also often extremely difficult to remove from the environment. These factors make EPPPs a major threat to the environment.[8]

When animals and wildlife encounter EPPPs, it can make them very ill. Even chemicals that are helpful for humans can be toxic to animals. One well-known example is that chocolate is toxic to dogs because of the chemical theobromine in chocolate.[9] Pharmaceutical chemicals can be just as, if not more, potent. One example that is well-known to scientists is diclofenac, an anti-inflammatory medicine that is often given to cows. In India, many people have religious objections to eating beef. Therefore, when the cows die, rather than being harvested for human consumption, their bodies are consumed by natural processes. White-backed vultures, once common in South Asia, would frequently eat the dead cows and the diclofenac is still present in their bodies. Diclofenac is very toxic to vultures. Due to this consumption, their populations plummeted by up to 95 percent. White-backed vultures are now considered critically endangered. Later studies have found that diclofenac is similarly toxic to species of fish and crabs as well.[10] Countless similar examples of EPPPs destroying wildlife populations can be found in every country and continent.

6 Lotfi Belkhir and Ahmed Elmeligi, "Carbon Footprint of the Global Pharmaceutical Industry and Relative Impact of Its Major Players," Journal of Cleaner Production 214 (March 20, 2019): 185–94, https://doi.org/10.1016/j.jclepro.2018.11.204.
7 Darcy Jimenez, "Cutting the Carbon Footprint of Pharma's Supply Chain," Pharmaceutical Technology (blog), February 9, 2022, https://www.pharmaceutical-technology.com/analysis/cutting-carbon-footprint-pharma-supply-chain/.
8 "Environmentally Persistent Pharmaceutical Pollutants (EPPPs)," UNEP - UN Environment Programme, September 17, 2020, http://www.unep.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/environmentally-persistent-pharmaceutical.
9 Remy Melina and Mindy Weisberger, "Why Is Chocolate Bad for Dogs?," livescience.com, April 17, 2022, https://www.livescience.com/32976-why-is-chocolate-deadly-for-dogs.html.
10 Gwynne Lyons, "Pharmaceuticals in the Environment: A Growing Threat to Our Tap Water and Wildlife" (United Kingdom: CHEM Trust, 2014), https://chemtrust.org/wp-content/uploads/CHEM-Trust-Pharma-Dec14.pdf.

The original distribution of the white-backed vulture is shaded on this map. Today, the black dot in Pakistan represents the last remaining breeding colony.

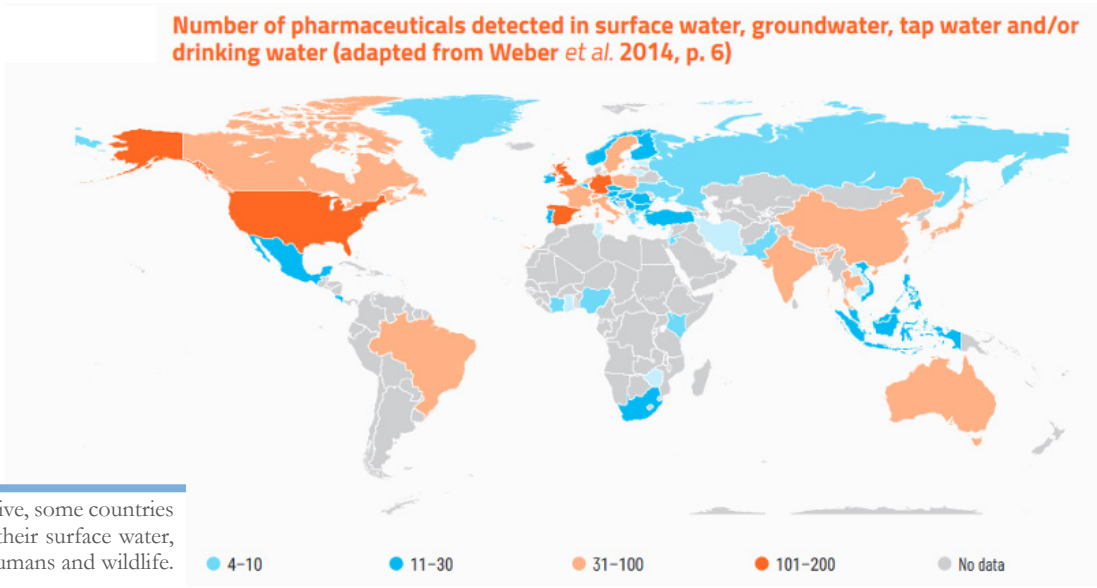
Credit: Asian Vulture Crisis Project

PPPs can also undermine the effectiveness of the medications they are derived from. In the Xiao River in China, scientists tested water samples that were upstream and downstream (i.e., with wastewater mixed in) from a pharmaceutical plant. They found that upstream, the bacteria in the river were between 3–26 percent resistant to antibiotics. In contrast, downstream bacteria were 60–95 percent resistant. This suggests that the EPPPs in the wastewater were helping naturally select bacteria immune to the medication's intended effect.[11] If these bacteria spread worldwide, it could undermine the effectiveness of the medicines we use today. Bacterial antibiotic resistance could cause an additional 10 million preventable deaths annually by 2050.[12] These issues will be explored further in the next section.

The most common way that EPPPs enter the environment is through wastewater. When humans take medications, the active chemical in the medicine is often filtered from the body through urination. The EPPPs then enter sewer systems. Unsurprisingly, hospitals show very high levels of EPPPs in their wastewater because of the high number of patients taking medication there. However, most sewage systems are only designed to treat and filter particles and bacteria. They are not equipped to filter out pharmaceuticals. Therefore, EPPPs often leave water treatment plants intact, entering the environment as runoff. Furthermore, when animals are given antibiotics and other medications (as is often the case in industrial farming), their waste is released directly into the environment.[13]

EPPPs can also be released directly from the manufacturing process. Particularly in countries with weaker regulations, pharmaceutical plants can dump their untreated wastewater directly into rivers and other bodies of water. This waste can kill or severely harm wildlife. With the plethora of EPPPs available, each chemical may have different adverse effects on wildlife and even different effects on different species. In fact, there are rarely beneficial effects. This runoff does not have to be released into waterways. Many manufacturing plants in countries with strong regulations can dramatically reduce the amount of EPPPs in their runoff. However, those systems are costly, and manufacturers rarely implement these systems

11 Olivier Cardoso, Jean-Marc Porcher, and Wilfried Sanchez, "Factory-Discharged Pharmaceuticals Could Be a Relevant Source of Aquatic Environment Contamination: Review of Evidence and Need for Knowledge," Chemosphere, Pharmaceutical Products in the Environment: For a More Reliable Risk Assessment, 115 (November 1, 2014): 20–30, https://doi.org/10.1016/j.chemosphere.2014.02.004.
12 Laura J. Shallcross et al., "Tackling the Threat of Antimicrobial Resistance: From Policy to Sustainable Action," Philosophical Transactions of the Royal Society B: Biological Sciences 370, no. 1670 (June 5, 2015): 20140082, https://doi.org/10.1098/rstb.2014.0082.
13 Tim aus der Beek, Frank-Andreas Weber, and Axel Bergmann, "Pharmaceuticals in the Environment: Global Occurrence and Potential Cooperative Action under the Strategic Approach to International Chemicals Management (SAICM)" (Dessau-Roßlau: German Environment Agency, November 2015), https://www.umweltbundesamt.de/en/publikationen/pharmaceuticals-in-the-environment-global.



Although the data is not comprehensive, some countries show very high levels of EPPPs in their surface water, affecting both humans and wildlife.

Credit: Global Chemicals Outlook II, UNEP, 2019

without being required.[14]

Although the research on EPPP sources is not comprehensive (only 13 percent of waste has been studied), there are noteworthy regional variations. For example, only two countries track EPPP sources in Africa—Nigeria and South Africa. Both countries have shown that farm animal waste is the largest known source of EPPPs. This is perhaps unsurprising considering the importance of farming in those countries. However, urban runoff is the largest known source in Eastern Europe and Latin America. These differences suggest that different approaches are needed in different parts of the world. However, the overall lack of knowledge about how EPPPs enter the environment suggests that more research and reporting are needed.[15]

Antimicrobial Resistance

The previous section briefly discussed antimicrobial resistance (AMR). Microbes are anything too small to be seen without a microscope—a broad group including viruses, bacteria, parasites, and more. AMR is a natural effect where overuse of antibiotics, antivirals, antiparasitics, and similar treatments leads microbe populations to develop a resistance to them. In the previous section, scientists found that bacteria in rivers exposed to EPPPs developed significantly stronger resistance to the antibiotic. However, this is not limited to manufacturing runoff. Each year, 40.2 billion doses of antibiotics alone are administered.[16] As discussed, those doses become EPPPs from animal and human waste that enters the environment, making AMR a global threat.

AMR is not a theoretical concern; it is something that is already taking place around the world. Ciprofloxacin is an antibiotic used to treat urinary tract infections in humans. However, scientists have found that some strains of the bacteria *E. coli* have developed up to 92.9 percent resistance to ciprofloxacin. The World Health Organization (WHO) includes ciprofloxacin on its List of Essential Medicines. If ciprofloxacin becomes less effective over time, doctors will lose a crucial tool in their fight against disease.[17]

AMR can also make hospitals more dangerous places for patients. There are many diseases present in hospitals because

14 Olivier Cardoso, Jean-Marc Porcher, and Wilfried Sanchez, "Factory-Discharged Pharmaceuticals Could Be a Relevant Source of Aquatic Environment Contamination: Review of Evidence and Need for Knowledge."
15 Tim aus der Beek, Frank-Andreas Weber, and Axel Bergmann, "Pharmaceuticals in the Environment: Global Occurrence and Potential Cooperative Action under the Strategic Approach to International Chemicals Management (SAICM)."
16 Annie J. Browne et al., "Global Antibiotic Consumption and Usage in Humans, 2000–18: A Spatial Modelling Study," The Lancet Planetary Health 5, no. 12 (December 1, 2021): e893–904, https://doi.org/10.1016/S2542-5196(21)00280-1.
17 "Antimicrobial Resistance," The World Health Organization, November 17, 2021, https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance.

sick people gather there. Many diseases are called "hospital-acquired infections" because patients often acquire the disease when they go to the hospital for unrelated reasons. One common hospital-acquired infection, *K. pneumoniae*, is naturally resistant to common antibiotics like ampicillin (humans did not cause this resistance). Therefore, doctors treat *K. pneumoniae* with powerful antibiotics called carbapenems. Because carbapenems also harm the good bacteria humans need to live, these are considered risky, last-resort treatments.[18] Unfortunately, doctors worldwide have noted strains of *K. pneumoniae* becoming resistant to even last-resort carbapenems. When this happens, patient mortality rates can increase by as much as 400 percent, depending on where the infection is.[19] Because this disease spreads in hospitals, it also tends to target already vulnerable patients.

A full solution to AMR is beyond the scope of this committee because it would require action from not just pharmaceutical companies but also patients, doctors, governments, and researchers. However, the role that pharmaceuticals play is undeniable and should be discussed.

Unfortunately, the world is divided on how to best fight AMR. While some countries have started implementing policies to fight AMR, coordinated international action has been limited. The International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) has partnered with the WHO and others to start the AMR Action Fund. Rather than prevent AMR, the AMR Action Fund is financing research to develop two to four new effective antibiotics by 2030.[20] If successful, this would be an effective approach, as it would take time for microbes to develop new resistances. However, there is no guarantee that these antibiotics will not also become ineffective due to AMR. Other environmental groups have called for limiting the use of antibiotics in agriculture through lawsuits and public awareness campaigns. This would not be an insignificant change. In the United States, approximately 80 percent of antibiotics are taken by animals, not humans.[21] Although agricultural demand for antibiotics is still very high, groups have noted some progress.

Environmental Degradation and Non-Pharmaceutical Healthcare

Although large pharmaceutical companies dominate global healthcare, four billion people still rely primarily on natural and traditional medicines.[22] However, global environmental degradation threatens both traditional and pharmaceutical medicine. As shown, the pharmaceutical industry plays a significant role in driving environmental degradation and climate change. The industry, therefore, poses a risk to itself through its environmental waste.

Over 50 percent of modern medicines are based on medicinal plants. However, the ecosystems needed to sustain those plants are constantly shrinking. For example, mangrove forests—coastal forests of trees that thrive in salt water—are shrinking at an alarming rate of 2–7 percent each year.[23] These trends have caused one-fifth (20 percent) of the plants used in medicine to be at risk of extinction.[24] In this way, environmental degradation directly threatens the availability of medicines we have already studied.

There are also many species of plants with undiscovered or unstudied medical properties. Scientists estimate species are going extinct 100–1,000 times faster because of human interference and impacts. These estimates suggest that every two years, we lose a plant species that could be part of a

18 "Antimicrobial Resistance."
19 Liangfei Xu, Xiaoxi Sun, and Xiaoling Ma, "Systematic Review and Meta-Analysis of Mortality of Patients Infected with Carbapenem-Resistant Klebsiella Pneumoniae," Annals of Clinical Microbiology and Antimicrobials 16 (March 29, 2017): 18, https://doi.org/10.1186/s12941-017-0191-3.
20 "What Is and How Do We Prevent Antimicrobial Resistance?," FIFARMA (blog), November 17, 2020, https://fifarma.org/en/what-is-and-how-do-we-prevent-antimicrobial-resistance/.
21 Giorgia Guglielmi, "Are Antibiotics Turning Livestock into Superbug Factories?," Science, September 28, 2017, https://www.science.org/content/article/are-antibiotics-turning-livestock-superbug-factories.
22 S. Díaz et al., "Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services" (Bonn, Germany: IPBES Secretariat, November 25, 2019), https://doi.org/10.5281/zenodo.3553579.
23 Mahmoud Mohieldin and Paula Caballero, "Goal 15—Seeing the Forest for the Trees—Making the Most of Synergies to Achieve SDGs in a Constrained Environment," UN Chronicle (United Nations), accessed August 23, 2022, https://www.un.org/en/chronicle/article/goal-15-seeing-forest-trees-making-most-synergies-achieve-sdgs-constrained-environment.
24 "Deforestation, a Headache for Natural Medicine," Text/HTML, The World Bank, January 13, 2015, https://www.worldbank.org/en/news/feature/2015/01/13/la-deforestacion-un-dolor-de-cabeza-para-la-medicina-natural.

critical pharmaceutical treatment.[25] Scientists have studied only a small fraction of plants for their medicinal properties, and even 2,000 more species are discovered each year.[26] With every lost botanical medicine, countless lives could have been improved or saved if those treatments had been discovered. This suggests a very real human toll from environmental degradation.

There are also grave concerns about the risk of new diseases spreading as humans disrupt the environment. The microbes that cause many prominent diseases come from animals. Most scientists believe COVID-19 originated in bats, and the Zika virus is spread through mosquitoes. There is danger in what we do not know. In a recent report, a UN expert panel estimated that approximately 750,000 currently unknown diseases that could affect humans exist in animals. Many of these exist in animal species that humans rarely interact with. However, as humans expand cities and agriculture into wildlife areas (perhaps to construct new pharmaceutical factories), we increase our exposure to these species. Therefore, we also increase the risk of disease. The UN expert panel warns that if we do not change how we expand into natural spaces, pandemics like the COVID-19 pandemic will become more common. In turn, this will dramatically increase the demand for pharmaceuticals, amplifying the environmental stresses discussed previously.[27]

Global climate change also accelerates the spread of known diseases, further increasing pressure to produce pharmaceutical chemicals. As global temperatures rise, species that carry diseases expand into new areas. For example, researchers in Scandinavia have noted how tick-borne encephalitis has spread north. As arctic temperatures increase, ticks find it easier to live in northern regions. This exposes the people and wildlife living in northern communities to diseases they have not encountered. Climate change also led to recent outbreaks of bluetongue in Europe, a disease affecting animals such as cows and goats. Bluetongue is spread through biting midges (small flies common near water sources), which are more common as temperatures rise. These are just two examples of a broader trend of climate change contributing to the spread of diseases.[28]

The relationship between the pharmaceutical industry and the environment is deep and complex. The pharmaceutical industry could take steps to have zero environmental impact. Nevertheless, these other environmental factors would still increase our risk of developing new diseases and slow research into new treatments. This committee will not try to find ways to prevent climate change in this debate, as that is a vast subject on its own. However, as climate change causes diseases to spread, the production of medicines must increase, creating more environmental impacts. This is known as a positive feedback loop, as impacts amplify over time. Delegates should be mindful of this positive feedback loop as they craft their resolutions.

Direct Health Impacts on Humans

Climate change, environmental degradation, and AMR have indirect influences on humans. In those cases, there are a few steps between environmental damage and its effect on humans. For example, with climate change, greenhouse gases do not directly harm humans, but their effects on the environment do. However, pharmaceutical pollution also directly affects human health, impacting billions worldwide every day. Limiting this damage has been one of the foremost priorities of the UN and its bodies.

Among the most essential human rights is the right to clean drinking water. As previous sections have discussed, pharmaceutical waste and even medicines easily contaminate water systems. These are often the same water systems that provide drinking water for people. The effect of this runoff is global. A study in 41 countries found traces of dozens of different pharmaceuticals, including antibiotics, painkillers, cardiovascular drugs, and antidepressants.[29] Other studies

25 Shi-Lin Chen et al., "Conservation and Sustainable Use of Medicinal Plants: Problems, Progress, and Prospects," Chinese Medicine 11, no. 37 (July 30, 2016), https://doi.org/10.1186/s13020-016-0108-7.
26 A. Antonelli et al., "State of the World's Plants and Fungi 2020" (Royal Botanic Gardens, Kew, 2020), https://doi.org/10.34885/172.
27 P. Dasak et al., "Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services" (Bonn, Germany: IPBES Secretariat, October 29, 2020), https://doi.org/10.5281/zenodo.4147317.
28 P. Dasak et al., "IPBES (2020) Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services."
29 Stephen R. Hughes, Paul Kay, and Lee E. Brown, "Global Synthesis and Critical Evaluation of Pharmaceutical Data Sets Collected

have shown that the presence of some drugs is truly global. In 2014, it was found that 17 different pharmaceuticals were present in the drinking water in countries in each of the 5 UN regions. One of these pharmaceuticals was diclofenac, which was previously discussed as the cause of the near-extinction of the white-backed vulture.[30]

At this point, there is no conclusive evidence that pharmaceuticals in drinking water are harming humans. So far, studies have shown that the amount of pharmaceuticals in drinking water should not pose an immediate risk to human health. However, there is no consensus on this issue. For one, pharmaceutical consumption is expected to increase as the average human becomes older and as new drugs are developed. This would lead to higher concentrations of these drugs in the drinking water. Additionally, as previously discussed, there are well-studied adverse effects on aquatic animal species. This leaves some scientists to speculate that the effects of these pharmaceuticals on the water supply might take years or even decades to appear.[31]

Different rivers have different concentrations of pharmaceuticals. A groundbreaking study in 2022 examined water samples from 258 rivers on every continent. As expected from earlier studies, nearly every river showed the presence of pharmaceuticals (with the only exceptions being two rivers in Iceland and one in Venezuela). However, there were dramatic differences between the remaining rivers. The most polluted sample was from the Ravi River in Lahore, Pakistan. The sample showed over 70 micrograms of pharmaceuticals per liter of water compared to the median value of just 1.5 micrograms per liter. The differences were likely because pharmaceuticals are easier to obtain in some countries and because different countries have different regulations.[32] Therefore, a country with easy access to pharmaceuticals but low regulations on those pharmaceuticals might have the most contaminated drinking water. At higher concentrations, it would be easier for pharmaceuticals to harm human health.

Current Status

Resistance to Regulation

The pharmaceutical industry has long been a powerful and influential force in politics. However, the COVID-19 pandemic demonstrated the world's reliance on a select few pharmaceutical companies. Many countries' return to "normal" has been dictated by their access to vaccines and treatments for COVID-19. A lot of countries still have COVID-19 restrictions in place. In 2021, the 10 largest global pharmaceutical companies generated 98.2 percent profit growth on average. They brought in a collective USD 734.8 billion in revenue and USD 130.6 billion in profits.[33] Global pharmaceutical companies benefited financially because COVID-19 vaccines have been approved through special processes. Many companies have also enjoyed very close relationships with regulators. Also, with billions of dollars at companies' disposal, challenges to regulations and laws are often guaranteed. These legal hurdles are roadblocks to establishing lasting regulations. Historical precedent has also given the pharmaceutical industry power to influence governments. While the trend is not new, the past few years have seen many attempts by pharmaceutical companies to resist regulation worldwide.

Potential conflicts of interest may also slow efforts at regulation. For example, many regulatory officials begin careers in industry, then work in a regulatory agency, and then return to an industry position at a higher level. This is a phenomenon referred to as the "revolving door."[34] Expert advisors, individuals with scientific expertise used to inform the opinions of regulators, may also be politically and financially

from River Systems," Environmental Science & Technology 47, no. 2 (January 15, 2013): 661–77, https://doi.org/10.1021/es3030148.
30 "Global Chemicals Outlook II – From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development" (Geneva, Switzerland: United Nations Environment Programme, March 11, 2019), https://www.unep.org/resources/report/global-chemicals-outlook-ii-legacies-innovative-solutions.
31 "Pharmaceuticals in the Water Supply," American Rivers, accessed August 30, 2022, https://www.americanrivers.org/threats-solutions/clean-water/pharmaceuticals-personal-care/.
32 John L. Wilkinson et al., "Pharmaceutical Pollution of the World's Rivers," Proceedings of the National Academy of Sciences 119, no. 8 (February 22, 2022): e2113947119, https://doi.org/10.1073/pnas.2113947119.
33 Paige McGlauflin, "Meet the 10 Biggest Pharma Companies in the World," Fortune, August 15, 2022, https://fortune.com/2022/08/15/global-500-biggest-pharma-companies/.
34 John Abraham, "The Pharmaceutical Industry as a Political Player," The Lancet 360, no. 9344 (November 9, 2002): 1498–1502, https://doi.org/10.1016/S0140-6736(02)11477-2.

tied to certain pharmaceutical companies.[35] Although there has been discussion on the repercussions of these conflicts of interest, concrete action has been limited. Thus, resistance to pharmaceutical regulations has been fortified on a large scale and individual levels.

Further, stated commitments to regulations do not always translate into action. For example, pharmaceutical packaging is a significant source of environmental contamination. However, the industry focuses on patient safety and sterility, not minimizing environmental waste. Although 76 percent of pharmaceutical companies have policies on packaging, only 13 percent of companies have set hard targets for waste reduction.[36] Antibiotic waste is another serious environmental threat the industry has identified but lags in tackling. The NGO Changing Markets emphasizes this point, positing that pharmaceutical companies have a responsibility to tackle pollution in their supply chains. However, reports on India and China, where most of the world's generic drugs are made, cite a lack of transparency about pharmaceutical supply chains.[37] Without transparency comes limited oversight and regulation. It is no wonder that a 2017 Bureau of Investigative Journalism report revealed "excessively high" levels of antimicrobial drugs, including superbugs, in wastewater from a major drug production hub in Hyderabad, India.[38]

Overall, there is wide variation between top and bottom performers in sustainability action. Low performers are not necessarily smaller companies or those based in a particular geographic location. Instead, the biggest factor in regulation adherence appears to be corporate will.[39] However, US companies, in particular, have been lagging in commitments to regulation. Top US pharmaceutical companies, such as Johnson & Johnson, Pfizer, and Eli Lilly, have fallen behind their European counterparts in fulfilling commitments. The UK's GlaxoSmithKline PLC and AstraZeneca PLC, Denmark's Novo Nordisk A/S, and Switzerland's Novartis AG are years ahead.[40] This lagging commitment may be due, in part, to the financial power of big pharmaceutical companies. For example, the American pharmaceutical industry spent at least USD 142 million on lobbying efforts against the I nflation Reduction Act to change climate, health, and tax policies. This year, they spent more than any other industry to lobby Congress and federal agencies.[41] Although this act will become law, the ability of this industry to spend millions of dollars on fighting against regulations they do not want demonstrates a significant obstacle in establishing regulations.

UN and Multinational Solutions

Environmental issues are difficult to contain because, by nature, they do not respect or observe national borders. All countries share the same planet, and environmental changes in one area almost always lead to changes in other areas. Similarly, the environmental damage caused by the pharmaceutical industry rarely restricts itself to just one country. Therefore, coordinated global action is required to restore the environment and protect human and animal life. The UN System has been actively working on containing and managing pharmaceutical pollutants for several years, and many solutions are being actively discussed. However, politics have slowed the process.

One pressing issue is the implementation of existing treaties and plans. For example, in 2015, the World Health Organization (WHO) developed a global action plan on antimicrobial resistance, which included various ambitious targets. One of those targets was the development of stronger regulations

35 John Abraham, "The Pharmaceutical Industry as a Political Player."
36 Michael Earl, "Environment: Where Does the Pharmaceutical Industry Stand?," PMLive (PMGroup Worldwide Limited, August 15, 2022), World, https://www.pmlive.com/pharma_intelligence/Environment_where_does_the_pharmaceutical_industry_stand_1452990.
37 Madlen Davies and Sam Loewenberg, "Big Pharma Fails to Disclose Antibiotic Waste Leaked from Factories," The Bureau of Investigative Journalism, January 24, 2018, https://www.thebureauinvestigates.com/stories/2018-01-24/big-pharma-fails-to-disclose-waste-leaked-from-factories.
38 Madlen Davies, "Big Pharma's Pollution Is Creating Deadly Superbugs While the World Looks the Other Way," The Bureau of Investigative Journalism, May 6, 2017, https://www.thebureauinvestigates.com/stories/2017-05-06/big-pharmas-pollution-is-creating-deadly-superbugs-while-the-world-looks-the-other-way.
39 Michael Earl, "Environment: Where Does the Pharmaceutical Industry Stand?."
40 Michael Gibney, "US Pharma Giants Combat Emissions Crisis with Long-Term Net-Zero Pledges," S&P Global Market Intelligence, September 27, 2021, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/us-pharma-giants-combat-emissions-crisis-with-long-term-net-zero-pledges-66729132.
41 Ahmed Aboulenein, "Analysis: U.S. Move to Negotiate Drug Prices a Rare Defeat for Big Pharma," Reuters, August 13, 2022, sec. Healthcare & Pharmaceuticals, https://www.reuters.com/business/healthcare-pharmaceuticals/us-move-negotiate-drug-prices-rare-defeat-big-pharma-2022-08-13/.

to only use antibiotics where they are needed in humans and animals. It also encouraged states to focus their research on how resistance spreads among microbes and the water supply.[42] Unfortunately, work on this action plan has been slow. While two-thirds of countries have created national action plans that follow the global action plan, the national plans are not being implemented. As of 2019—four years after the release of the global plan—only 26 countries had self-reported making progress toward implementing their action plans. Today, 95 countries report progress, accounting for only about half of the members of the WHO.[43] UN Secretary-General Antonio Guterres has said that these efforts "are currently too slow and must be accelerated."[44] Therefore, making meaningful progress toward the global action plan is still a topic on the UN's agenda.

In February 2006, the First International Conference on Chemicals Management was held in Dubai. This conference established the Strategic Approach to International Chemicals Management (SAICM). Today, SAICM does vital policy work for the UNEP focused on chemical waste and pollutants, including pharmaceuticals. It also collects valuable information from other entities to make recommendations about how to manage chemical waste.[45] For example, one report from the Organisation for Economic Co-operation and Development (OECD) makes dozens of policy recommendations. One such recommendation is to monitor and track the runoff of the highest-risk pharmaceuticals. It also recommends adding eco-labels to over-the-counter medicines that pose the greatest environmental risks.[46] These solutions are crafted for both national and international entities to consider.

The UN Environment Assembly has also been actively working on this issue. One noteworthy resolution from its 2019 session is "Sound management of chemicals and waste." In this resolution, the UNEA gave the UNEP broad responsibility to oversee the global chemical industry. The UNEP was empowered to research best practices for producing chemicals (including pharmaceuticals). It also allowed the UNEP to increase its capacity-building efforts with states. This means the UNEP can work directly with countries to help their chemical industries be more sustainable.[47] While this resolution and others fail to set up specific benchmarks and accountability measures, it is a sign that pharmaceutical waste is an increasingly important issue on the UN's agenda.

With such a clear direction from the Assembly, the UNEP is working to fight pharmaceutical pollution by focusing on the areas of greatest need. Before the 2022 study discussed previously, information gaps were a significant barrier to understanding the scope of environmental pollution. Earlier studies focused on Western countries, with very little coverage of Africa. The UNEP has helped focus scientific efforts and national research to ensure global coverage of this global issue. The UNEP has also prioritized working with industry organizations. These organizations have companies as members rather than countries. Working with industry organizations, the UNEP can help companies worldwide find more sustainable practices without sacrificing profit.[48] However, even the UNEP has been critical of its progress. In very clear language, the UNEP said, "Progress has been made under SAICM, but not enough." The UNEP continues to make policy recommendations to make greater progress on the issue. However, it needs further support from the UNEA or the member states.[49]

Sustainable Development Goals

The Sustainable Development Goals (SDGs) are among the

42 "Global Action Plan on Antimicrobial Resistance" (World Health Organization, January 1, 2016), https://www.who.int/publications/i/item/9789241509763.
43 "Global Database for the Tripartite Antimicrobial Resistance (AMR) Country Self-Assessment Survey (TrACSS)," 2021, http://amrcountryprogress.org/.
44 Louise Munkholm and Olivier Rubin, "The Global Governance of Antimicrobial Resistance: A Cross-Country Study of Alignment between the Global Action Plan and National Action Plans," Globalization and Health 16, no. 1 (November 11, 2020): 109, https://doi.org/10.1186/s12992-020-00639-3.
45 "What Is SAICM," SAICM Knowledge, March 30, 2021, https://saicmknowledge.org/about/saicm.
46 OECD, "Pharmaceutical Residues in Freshwater: Hazards and Policy Responses," OECD Studies on Water (Paris, France: OECD Publishing, November 2019), https://doi.org/10.1787/c936f42d-en.
47 United Nations Environment Assembly, Sound management of chemicals and waste, UNEP/EA.4/Res.8, March 28, 2019, http://wedocs.unep.org/bitstream/handle/20.500.11822/28518/English.pdf.
48 "Environmentally Persistent Pharmaceutical Pollutants (EPPPs)."
49 "An Assessment Report on Issues of Concern: Chemicals and Waste Issues Posing Risks to Human Health and the Environment" (United Nations Environment Programme, September 2020), https://wedocs.unep.org/bitstream/handle/20.500.11822/33807/ARIC.pdf.

highest priorities of the entire UN System. The SDGs are 17 goals set in 2015 to be achieved by 2030. Notably, these goals are not simply goals for developing states to achieve. They are goals meant for every country to work towards.[50] In fact, some high-income countries considered to be highly developed, such as the United States, have yet to achieve a single SDG.[51]

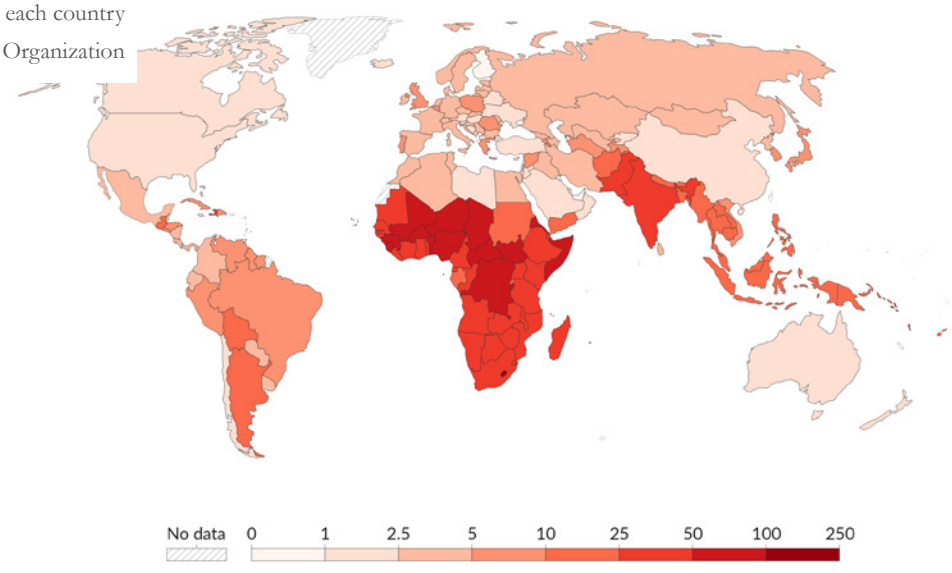
Of the 17 goals, the one that relates to this issue most directly is SDG 3: Good Health and Well-Being. SDG 3 is primarily focused on reducing preventable deaths. However, it also includes targets such as "access to safe, effective, quality and affordable essential medicines and vaccines for all." As discussed previously, manufacturing these medicines poses dramatic risks to the environment and may create new diseases that are more difficult to treat. To make any progress towards this goal "sustainable," action must be taken to prevent deadlier diseases. Also, under SDG 3, Target 3.9 is to "substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination."[52] There are many different sources of water contamination, so data regarding Target 3.9 will not be solely focused on pharmaceutical waste. However, because water is an essential channel for pharmaceutical waste, the overall data will still help suggest countries that are more affected by pharmaceutical pollution.

This topic also touches on SDG 12: Responsible Consumption and Production and SDG 13: Climate Action. Regarding SDG 13, it was previously discussed that the pharmaceutical industry is a major contributor to greenhouse gas emissions. By some metrics, it may even pollute more than the automotive industry. Unfortunately, global progress toward this goal has been slow. The Intergovernmental Panel on Climate Change (IPCC) has recommended that to keep warming below 1.5 degrees Celsius, global emissions in 2030 must be 4 percent lower than in 2010. Unfortunately, even if every country achieves its climate change commitments, emissions are on track to be 14 percent higher by 2030.[53] Regarding SDG 12, one of its significant targets, Target 12.4, is to "achieve [by 2020] the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their

50 "THE 17 GOALS | Sustainable Development," Department of Economic and Social Affairs | Sustainable Development, accessed September 1, 2022, https://sdgs.un.org/goals.
51 "Sustainable Development Report 2022," Sustainable Development Report, accessed September 1, 2022, https://dashboards.sdgindex.org/.
52 "Goal 3 | Department of Economic and Social Affairs," Department of Economic and Social Affairs | Sustainable Development, accessed September 1, 2022, https://sdgs.un.org/goals/goal3.
53 "Goal 13 | Department of Economic and Social Affairs," Department of Economic and Social Affairs | Sustainable Development, accessed September 1, 2022, https://sdgs.un.org/goals/goal13.

A map showing how often humans die because of unsafe water in each country

Credit: World Health Organization



Source: World Health Organization

release to air, water and soil in order to minimize their adverse impacts on human health and the environment." Although this was not achieved by 2020, work continues to meet this goal by 2030.[54]

There is some good news regarding the SDGs, however. According to a key UNEP report, chemical and pharmaceutical industry manufacturers and governments are including the SDGs in their plans. In Thailand, the government has prioritized managing chemical waste (including from pharmaceuticals) in its plans to achieve SDGs 3, 11, and 12. Industry associations, including the European Chemical Industry Council, have also committed to achieving the SDGs. There is still much work to be done, but these developments suggest that increased attention to pharmaceutical waste is coming soon.[55]

Bloc Analysis

Points of Division

Traditionally, blocs are presented as static, opposed groups of countries that draft different resolutions during debate. For many topics, this is a fair approach. However, for topics such as this, countries' policies are influenced by several major factors. Two countries may agree on some factors and disagree on others, making the blocs more fluid. Here, we will describe the various factors that will help you determine which countries you are most likely to work with. You may find that your country's position on each of these factors would group it with seemingly different blocs. This should not be seen as an obstacle but rather an opportunity to bring different groups towards the same global consensus.

Pharmaceutical Consumption

Different countries have varying degrees of access to modern pharmaceuticals. While this raises pressing questions about equity and human rights, it also means that pharmaceutical waste affects countries differently. Countries that use more pharmaceuticals are more likely to suffer the effects of pharmaceutical waste.

Unfortunately, global data on the use of pharmaceuticals is difficult to find. Data is readily available for Western countries but not others. Data on spending per country is also challenging, as countries use different systems to pay for medical services (such as universal healthcare). However, the WHO does collect statistics about the number of pharmacists per 10,000 people in a country. Having more pharmacists is likely a sign that pharmaceuticals are more readily available to people. This data is found on pages 106–113 in the World Health Statistics Report.

The regions with the highest values of pharmacists per 10,000 people are South-East Asia (6.6) and Europe (6.5). Africa has the lowest value (0.8). Within these regions, there is considerable variation. For example, in Europe, Belgium has 19.8 pharmacists per 10,000 people, but Bosnia and Herzegovina only has 1.3. In Africa, South Africa has 2.7, while Malawi has less than 0.1. While these regional summaries are available, delegates should not consider this information strictly regionally. Countries in Asia may more closely resemble countries in South America than their neighbors. For this reason, it is essential to explore and research country-specific information to obtain a more encompassing understanding of pharmaceutical consumption by country.[56]

Standard Pharmaceutical Regulations

In countries that have pharmaceutical manufacturers, governments will apply different types of regulations on those manufacturers. Unfortunately, it can be complicated to compare regulations between different countries. Countries may have different regulatory and approval processes for the pharmaceutical industry. Other countries may not be allowed to regulate certain aspects of the manufacturing process based on laws or even their constitution. However, delegates are still encouraged to research the regulations present in their country as an essential starting point. For example, delegates may research how much greenhouse gas is emitted by the pharmaceutical industry in their country. Delegates may also

54 "Goal 12 | Department of Economic and Social Affairs," Department of Economic and Social Affairs | Sustainable Development, accessed September 1, 2022, https://sdgs.un.org/goals/goal12.
55 "Global Chemicals Outlook II – From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development"
56 "World Health Statistics 2022: Monitoring Health for the SDGs, Sustainable Development Goals" (Geneva: World Health Organization, 2022), https://www.who.int/data/gho/publications/world-health-statistics.

research their country's steps to reduce emissions overall.

The WHO maintains an online database of manufacturers that produce "prequalified medicines." This means that the manufacturing process meets the WHO's standards. Many countries consider this when deciding whether a pharmaceutical produced by another country should be sold in their country.[57] Therefore, countries with manufacturers on this list are more likely to have stronger pharmaceutical regulations. The complete list of manufacturers, including the country they operate in, can be found in the WHO's online database. The search fields include an option for "Manufacturing site," which delegates can use to find which prequalified medicines their country produces (if any). Although China, India, and Western countries are strongly represented on this list, dozens of other countries, such as Ecuador, Kenya, and Thailand, are also present.

Implementation of New Regulations

As discussed, many countries may make commitments and national action plans but fail to implement them. Therefore, countries in this committee may be divided based on whether or not they have taken steps to implement their plans. Generally, countries that have implemented their plans will be more compelled to make other countries follow through.

Earlier, we discussed the WHO global action plan on antimicrobial resistance, just one example of a national plan related to this topic. The WHO has created an online library with each national plan that countries have submitted following the global plan (note that many plans are not in English). These plans often show what parts of the issue a country prioritizes. However, as of 2021 (six years after the release of the global plan), only about half of WHO member states reported that they are implementing their plans.[58] Delegates can find their country's progress toward implementing their plan in this global database. For example, Colombia, Saudi Arabia, and Switzerland have all reported that their national plans are being implemented. Their governments are actively tracking their progress. However, Argentina, Canada, and Sudan have only reported developing a national plan without any implementation. Some countries, like Algeria and Poland, have yet to complete or even begin their national plans.[59] This suggests that these issues may not be national priorities for these governments. Such countries would likely resist efforts to give the UNEP more oversight over each country's management of pharmaceutical pollution.

Note that geography may also play a role in whether countries are concerned with other countries' implementation of regulations. Consider the Danube River in Europe, which runs through or along Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, and Bulgaria. Some countries, like Austria and Serbia, are implementing their national plans. Others, such as Bulgaria and Hungary, have not started to implement plans.[60] In theory, one country's failure to implement its national plan could lead to the spread of AMR or pharmaceutical runoff in another country that is implementing its national plan. In this case, the country receiving the runoff could be more motivated to ensure that surrounding countries are taking similar action to prevent further damage to their country.

Committee Mission

The pharmaceutical industry has revolutionized our health and our lives. People are living longer, healthier lives thanks to life-saving medications and treatments. However, these miracles come at a cost. The pharmaceutical industry's impact on the environment is undeniably concerning and requires coordinated, global action to address. Although many people think of climate change when they think about environmental risks, it is not the only one. Even if climate change were solved today, there would be numerous dangers from pharmaceutical waste in our water.

In this committee, delegates will be asked to tackle a multifaceted problem by managing the different adverse impacts of the

57 "Overview — History & Mission," WHO - Prequalification of Medical Products (IVDs, Medicines, Vaccines and Immunization Devices, Vector Control), September 12, 2016, https://extranet.who.int/pqweb/medicines/overview-history-mission.
58 Louise Munkholm and Olivier Rubin, "The Global Governance of Antimicrobial Resistance: A Cross-Country Study of Alignment between the Global Action Plan and National Action Plans."
59 "Global Database for the Tripartite Antimicrobial Resistance (AMR) Country Self-Assessment Survey (TrACSS)."
60 "Global Database for the Tripartite Antimicrobial Resistance (AMR) Country Self-Assessment Survey (TrACSS)."

pharmaceutical industry on the world. There are many tools at delegates' disposal. The UNEA works to identify key priorities for global environmental action regarding policy formulation and project-based initiatives. The UNEA has taken steps very recently to empower the leadership of the UNEP to start tackling these threats. Despite these advances, the UNEP still says that more must be done. Only the member states can authorize the kind of bold action that the UNEP leadership is calling for. Therefore, it falls on the delegates to develop ideas to ensure a healthy, prosperous world for future generations.

Research and Preparation Questions

Your dais has prepared the following research and preparation questions as a means of providing guidance for your research process. These questions should be carefully considered, as they embody some of the main critical thought and learning objectives surrounding your topic.

Topic A

1. Which region does your country fall in, Global South or Global North? Considering your country's overall emissions, what has been your country's history with climate change effects?
2. Did your country submit stronger NDCs at COP26 in 2021? How do your country's NDCs influence environmental policy decisions that your country has made so far, and have they been effective?
3. What are the biggest socio-economic areas (jobs, food, housing) that are being affected in your country because of climate change? What has your country done to try to remedy the situation?
4. What is your country's stance on the Paris Agreement? What is your country's stance on the principle of "common but differentiated responsibility" in terms of solving the climate crisis?
5. What strides, if any, has your country made toward greener energy and reducing greenhouse gas emissions in accordance with the 1.5°C goal? How dependent is your country on fossil fuels?

Topic B

1. How economically dependent is your country on the pharmaceutical industry? How dependent is it on natural and traditional medicines? What solutions can be created for countries that depend heavily on these industries? Has your country used such solutions?
2. What pharmaceutical products does your country produce? How much of your country's economy is driven by the pharmaceutical industry?
3. Has your country entered into any international treaties or agreements that consider the impacts of the pharmaceutical industry on GHGE and vice versa? If so, have they been effective in combating this positive feedback loop?
4. What is the quality of drinking water in your country? This could include not just pharmaceutical contamination but other types of contamination as well.
5. Most countries (but not all) have an agricultural industry that raises animals and livestock. Are those animals given antibiotics? Are more antibiotics given to humans or animals in your country?
6. Does your country have a national plan to limit antimicrobial resistance? If so, has your country started implementing its national plan?
7. How has your country's relationship with the pharmaceutical industry changed throughout the COVID-19 pandemic? How present are pharmaceutical companies in your country's politics?

Important Documents

Topic A

Climate Action Tracker. "CAT Climate Target Update Tracker." 2022. https://climateactiontracker.org/climate-target-update-tracker-2022/.

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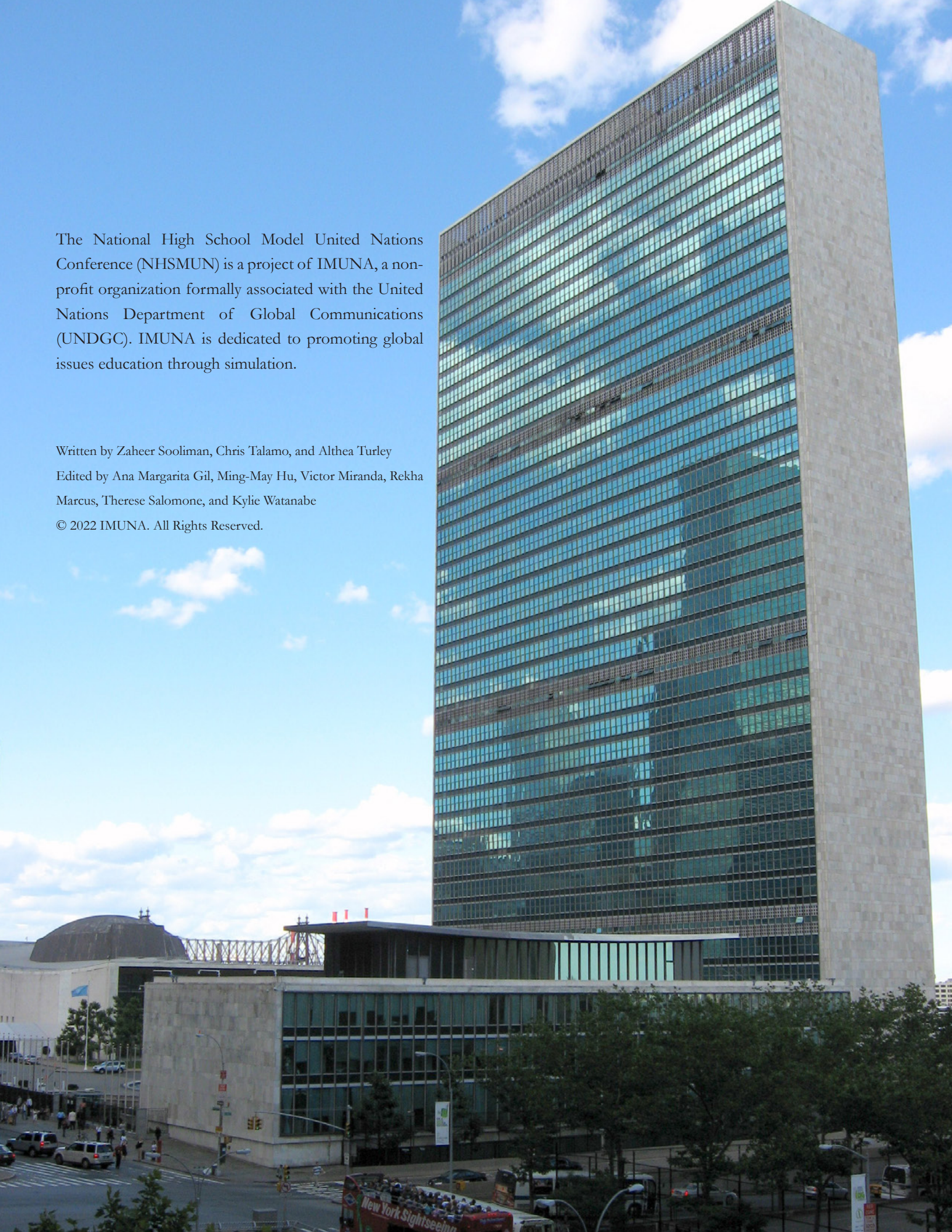

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