



Aiding efforts to building climate-resilient infrastructure for drought and famine

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Introduction

What more can the Member States of the United Nations to ease or even reverse the effects of climate change and global warming? The greatest and most predictable suffering will come largely in regions exposed to the effects of drought and famine caused or worse by global warming.

The 193 Member States pledged aggressive action under the 2015 Paris Convention on Climate Change and the Sustainable Development Goals also agreed that same year. But there is growing concern these efforts are not enough.

Many Member States are hedging on their Paris pledges to reduce fossil fuel use and greenhouse-effect emissions. Some are acting slowly due to suspicion other large countries are not carrying their fair share of the burdens of change. Others fear aggressive steps will antagonize domestic opposition from voters who have to pay for any adjustment.

The dangers are increasingly obvious. Anthropogenic (human caused) climate change may be the greatest existential threat humanity faces. Climate change brings with it numerous challenges effecting all nations in various ways.

Human activity has caused an average increase of the global climate temperature of over 1.0°C since the year 1880.¹ Human activity is thought to be major cause of extremes in weather temperature, precipitation, and other weather events world-wide.^{2,3}



Heavy precipitation and severe drought have become common in several regions globally. A region such as the northeast of the United States is poised to experience higher precipitation extremes, while southern Africa and South

¹ IPCC. "Summary for Policymakers," Cambridge University Press, Cambridge, UK and New York, NY, USA, (2018), pp. 3-24, <https://doi.org/10.1017/9781009157940.001>.

² Bisbis, Mehdi Benyoussef. Gruda, Nazim. Blanke, Michael. "Potential impacts of climate change on vegetable production and product quality – A review." *Journal of Cleaner Production* 170, (2018), 1602-1620. <https://doi.org/10.1016/j.jclepro.2017.09.224> ;

Mahli, Gurdeep Singh. Kaur, Manpreet. Kaushik, Prashant. "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review." *Sustainability* 13, 3 (2021), 1318. <https://doi.org/10.3390/su13031318>

³ Mahli, Gurdeep Singh. Kaur, Manpreet. Kaushik, Prashant. "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review." *Sustainability* 13, 3 (2021), 1318. <https://doi.org/10.3390/su13031318>

America are poised to experience harsher drought conditions.^{1,3}

These conditions are not only harsh for humans and other animals to survive in, but they also pose changes to the yield and quality of agricultural product². Maize and wheat crops have fallen due to environmental changes caused by global warming.^{3,4} Other crops experience the change in atmospheric conditions as a boon to their development.²

Sea level rise is brought about by glaciers melting and the thermal expansion of ocean water.⁵ This has multiple impacts on human civilization. Rising sea levels causes loss of coastal land, displacing human settlements. As settlements occur disproportionately around coastlines and bodies of water, experts agree that displacement will be drastic, with sea levels rising by up to a meter by 2100.^{6,7} According to IPCC's 2018 Summary for Policymakers, every ten centimeters of sea level rise exposes ten million people to related risks. Specifically, coastal erosion, loss of coastal land, floods, and ocean water entering freshwater bodies are major impacts of sea level rise.⁵

Severe weather phenomena cause great economic damage and loss of life annually.

Effects of climate change result in severe weather events to increase in damage, as measured by the economic cost of the damages and the resulting loss of life.^{8,9} However, the physical mechanisms of each variety of severe weather event—tornadoes, hurricanes, thunderstorms, etc.—are disparate and complex. Connecting the complex mechanisms of climate change to the complex mechanisms exhibited by a given weather event for modeling and predictive purposes proves a subject of ongoing work for computational meteorologists.⁹



Certain geographic regions will experience greater crop productivity, but many will experience worse productivity. Some regions will experience harsher droughts and greater water insecurity, while others will experience greater availability of fresh rainwater. Coastal

⁴ Pais, Isabel. Reboredo, Fernando. Ramalho, Jose. Pessoa, Maria. Lidon, Fernandon. Silva, Maria. "Potential Impacts of Climate Change on Agriculture – A Review." *Emirates Journal of Food and Agriculture* 32, 6 (2020), 397-407.

<https://doi.org/10.9755/ejfa.2020.v32.i6.2111>

⁵ Ankrah, Johnson. Monteiro, Ana. Madureira, Helena. "Geospatiality of sea level rise impacts and communities' adaptation: a bibliometric analysis and systematic review." *Nat Hazards* 116, (2023), 1–31.

<https://doi.org/10.1007/s11069-022-05675-3>

⁶ IPCC. "Summary for Policymakers," IPCC, Geneva, Switzerland, (2023) pp. 1-34,

<https://doi.org/10.59327/IPCC/AR6-9789291691647.001>

⁷ Nerem, R.S.; Beckley, B. D.; Fasullo, J. T.; Hamlington, B. D.; Masters, D.; Mitchum, G. T.

"Climate-change-driven Accelerated Sea-level Rise

Detected in the Altimeter Era," *PNAS* 115, 9 (2018). <https://www.pnas.org/doi/10.1073/pnas.1717312115>

⁸ Dinan, Terry. "Projected Increases in Hurricane Damage in the United States: The Role of Climate Change and Coastal Development," *Ecological Economics* 138, (2017), 186-198.

<https://www.sciencedirect.com/science/article/pii/S0921800916309752>

⁹ Balagaru, Karthik. Xu, Wenwei. Chang, Chuan-chieh. Leung, L. Ruby. Judi, David. Hagos, Samson. Wehner, Michael. Kossin, James. Ting, Mingfang. "Increased U.S. coastal hurricane risk under climate change." *Science Advances* 9, 14 (2023).

<https://doi.org/10.1126/sciadv.adf0259>



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areas and islands will experience loss of land as the sea level rises. Available freshwater sources will decrease for some nations as sea water rises to mix with coastal freshwater sources. The character of severe weather events will worsen, harming nations that lack resilient infrastructure disproportionately.

These changes cause shifts in power between nations as resources shift according to geography. All nations are impacted by climate change. From islands in the Caribbean, to the United States, to India and beyond. For this reason, it is of vital concern to the nations of the world to seek mitigation techniques as a matter of food security, national security, and existential security. The mitigation strategy of focus is climate-resilient infrastructure: the at-scale implementation of technologies that reduce the damages done by climate change-related conditions.

Strategy: Climate-Resilient Infrastructure

While the General Assembly Special Session at ODUMUNC focuses primarily on measures to *halt or reverse* global warming, the ECOSOC will try to deal with some of the worst consequences. Above all, under this agenda item, the ECOSOC looks for international action to reduce the *effects* of climate change-induced drought and famine.

For the ECSOC, under this agenda item, the guiding concepts are *resilience* and *mitigation*. In efforts to improve resilience in the face of climate change, many different mitigation strategies against the effects of climate change

have been presented, each requiring varying economic support to varying degrees of efficacy. Current mitigation strategies focus on climate-resilient infrastructure, of which there are seven areas of focus.



First, all critical roads, telecommunications networks, energy grids, and water access facilities must be strengthened to face the increased mechanical stresses related to extreme weather events. Even for wealthier nations, funding at-scale strengthening of all these vital socioeconomic arteries is a difficult challenge. In India, the government has announced a disaster resilient infrastructure (DRI) program. This accomplishes many things but focuses on the smart restructuring of water and road networks. Using GIS, the government aims to remap the placement of roads to keep communities connected even during flooding.¹⁰

Second, early warning systems are needed globally to give nations time to prepare for the impact of severe weather conditions. This may allow for preparation against wildfires amid heatwaves, which may ravage crop fields. According to the UN Environment Programme, early warning systems are some of the most cost-effective emergency preparedness measures with one third of the world population lacking coverage.¹¹

¹⁰ Prothi, Amit. "Building Resilient Infrastructure Pertinent to Face Climate Extremities: Amit Prothi." Forbes India, 1 September 2023. <https://www.forbesindia.com/article/news/building-resilient-infrastructure-pertinent-to-face-climate-extremities-amit-prothi/87945/1>.

¹¹ UNEP. "5 ways countries can adapt to the climate crisis," United Nations Environment Program, 2022. <https://www.unep.org/news-and-stories/story/5-ways-countries-can-adapt-climate-crisis>

On the Caribbean Island state of Dominica, for example, the government has implemented an early warning system. This allows the island’s inhabitants to move to higher ground in the face of increased flooding from harsher storm surge and hurricanes due to climate change¹². As is seen in Dominica, these systems save lives by allowing individuals to temporarily relocate in the face of severe weather events.



The effects of Hurricane Katrina, in New Orleans, 2005.

Third, ecosystem restoration, when implemented correctly, can decrease flood risk drastically. For instance, planting mangroves along coastlines serves as a natural sea defense, comparable to seawalls. Preventing flooding of coastal agriculture will increase the stability of these crop yields. Changing agricultural practices with Climate Smart Agriculture can increase the resiliency of farmland by increasing long term nutrient density of the soil, decreasing

temperatures, and boosting water availability for crops. Often, planting native, temperature resilient trees increase arability for areas under tree-cover¹³.

Fourth, seawalls may serve as flood defenses in regions lacking natural seawater defenses. Seawalls have become ubiquitous in the American zeitgeist following Hurricane

Katrina’s disastrous impact on New Orleans. From Louisiana to Norfolk, Virginia, cities everywhere are seeking funds to invest in seawall protections. Seawalls are critical to protecting the lives of coastal inhabitants and the capital invested in these areas¹⁴.

Fifth, cloud seeding allows temporary drought relief by inducing rainfall in existing clouds^{15,16}. As droughts are projected to worsen over the ensuing hundred years and beyond, robust irrigation systems allow scant water resources to be used more efficiently, abating famine and increasing available water.

Sixth, desalination techniques allow coastal nations to access fresh water for their populations, but this water comes at a much higher cost than other fresh water sources. Israel has invested heavily in the technology, with five major desalination facilities producing more

¹² Kentish, Jose Alison. “A Caribbean Island’s Quest to Become the World’s First Climate-Resilient Nation.” BCC, 24 April 2023.

<https://www.bbc.com/future/article/20230418-how-caribbean-island-dominica-is-fighting-climate-impacts>.

¹³ Sain, Gustavo. Loboguerrero, Ana Maria. Corner-Dolloff, Caitlin. Lizarazo, Miguel. Nowak, Andreea. Martinez-Baron, Deissy. Andrieu, Nadine. “Costs and benefits of climate-smart agriculture: The case of the Dry Corridor in Guatemala,” *Agriculture Systems* 151 (2017), 163-173.

<https://doi.org/10.1016/j.agsy.2016.05.004>.

¹⁴ Schwartz, John, and Mark Schleifstein. “Fortified but Still in Peril, New Orleans Braces for Its Future.”

The New York Times, 8 March 2018.

<https://www.nytimes.com/interactive/2018/02/24/us/new-orleans-flood-walls-hurricanes.html>.

¹⁵ Neyman, Jerzy. Scott, Elizabeth. Vasilevskis, Marija. “Randomized Cloud Seeding in Santa Barbara,” *Science* 131, 3407 (1960), pp. 1073-1078.

<https://www.jstor.org/stable/1705242>

¹⁶ Rosenfeld, Daniel. Nirel, Ronit. “Seeding Effectiveness—The Interaction of Desert Dust and the Southern Margins of Rain Cloud Systems in Israel,” *J. Appl. Meteor. Climatol.* 35, (1996), 1502–1510, [https://doi.org/10.1175/1520-0450\(1996\)035<1502:SEIODD>2.0.CO;2](https://doi.org/10.1175/1520-0450(1996)035<1502:SEIODD>2.0.CO;2).

water than the country needs.¹⁷ Desalinated water costs around 70 percent more to produce than freshwater sources.¹⁸ Switching to desalinated water will increase water related costs by 70 percent for every product that requires water, especially food. Wealthier nations with seawater access might be able to finance this, but many nations will not be able to afford this for their populations at scale. Desalination is expensive.

Seventh, as certain regions experience harsher droughts, others are experiencing more flooding and rainfall. In the United States, national water grid proposals would send water from these oversaturated regions (Missouri, Arkansas, Mississippi) to droughted regions (western states). This approach could be taken elsewhere in the world, but it will require greater international cooperation to achieve.¹⁹ Smart Water Grid proposals suggest implementing telemetry devices throughout the grid. This would increase efficient use of water for domestic use and agricultural use, preventing water losses and optimizing distribution.²⁰

Various mitigation strategies may be implemented to defend against climate-change induced drought and famine, but each have different expenses, efficacies, and cooperation needs. Early warning systems and ecosystem restoration can provide cheaper strategies than infrastructure projects, but they can only go so far to address the global need to increase resilience. Infrastructure and new technologies offer many strategies for nations to pursue. However, desalination, national smart grid

technology, and seawalls are expensive and often include diplomacy challenges. There is no one-size-fits-all plan that can offer salvation from drought and famine to every nation.



Irrigation is essential to agriculture in much of Africa. Dependence will grow in the near future.

United Nations Actions, Roles, and Resolutions

COP 27, the 2022 Conference of Parties (CoP) United Nations Framework Convention on Climate Change, in Sharm el-Sheikh, Egypt, introduced the *Sharm el-Sheikh Adaptation Agenda*. This largely economic plan aimed to alleviate the damage done to developing nations through a fund predominantly fed by richer nations.

Although this agenda goes far to alleviate the impact of climate change, it mostly addresses loss and damage recompense with discussion of

¹⁷ Jacobsen, Rowan. "Israel Proves the Desalination Era Is Here." *Scientific American*, 29 July 2016.

<https://www.scientificamerican.com/article/israel-proves-the-desalination-era-is-here/>.

¹⁸ Balbuena, Natalie and DiFelice, Mia. "5 Reasons Why Desalination Isn't Worth It." *Food & Water Watch*, 3 May 2023.

<https://www.foodandwaterwatch.org/2023/04/27/5-reasons-desalination/>.

¹⁹ Beaulieu, Ronald. "NATIONAL SMART WATER GRID," Lawrence Livermore National Laboratory, (2009) <https://www.osti.gov/servlets/purl/963122/>

²⁰ Joshi, Naveen. "Smart water grids: The future of water distribution and management," *Allerin*, (2019). Accessed online at

<https://www.allerin.com/blog/smart-water-grids-the-future-of-water-distribution-and-management>



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ecosystem restoration techniques considered as well.^{21,22} The climate-resilient infrastructure in this agenda is limited to the discussion of ecosystem restoration.

In 2022, the UN Environment Assembly adopted a resolution to support sustainable and resilient infrastructure.²³ This resolution reaffirmed guidelines for sustainable infrastructure development, the need for continued technological innovation, and the importance of cooperation across political boundaries in the development of sustainable, resilient infrastructure.

Additionally, this resolution called on the UN Environment Programme to support cooperation between member states in facilitating the goals of sustainable development through communication assistance, increasing private sector engagement in the planning and development of sustainable infrastructure, and promoting the existence of existing tools and guidelines for sustainable infrastructure development. This resolution aims to increase smart development of roads and communication networks while increasing communication between member states. This has the potential to allow for better use of shared resources and better early warning systems.

In the same session of the UN Environment Assembly, a resolution was passed on nature-based solutions for supporting sustainable development. This resolution, through the UN

Environment Programme, compiles best practices for and supports research into nature-based solutions.²⁴ These allow member states to draw from existing frameworks to implement for abating drought and famine. These solutions are cheaper, but do not address many of the impacts that climate change has on infrastructure.

The UN Environment Programme has identified 10 landmark ecosystem restoration projects that are underway. The Central America Dry Corridor project attempts to rejuvenate agriculture in drought-ridden regions throughout Central America with Climate Smart Agriculture practices. The African Union launched the great green wall initiative to restore farmlands, inhibit desertification, and sequester carbon.

The Shan-Shui Initiative in China blends traditional farming practices with innovative techniques that increase restoration efforts. In Indonesia, mangrove habitats are being protected to increase the ecosystem's ability to rejuvenate naturally, protecting coastal farmland from flooding through the growth of natural mangrove seawalls. Various other ecosystem restoration projects are finding ways to improve farming methods to align with climate goals while increasing resiliency to famine and drought.

The Global Ecosystem-based Adaptation (EbA) fund, established by the UN Environment Programme, provides quickly deployable funding to innovative techniques to tackling

²¹ Stallard, Esme. "COP27: What was Agreed at the Sharm el Sheikh Climate Conference," BBC, 8 December 2022. Accessed online at <https://www.bbc.com/news/science-environment-63781303>

²² United Nations, "Report of the Conference of the Parties on its twenty-seventh session, held in Sharm el-Sheikh from 6 to 20 November 2022," Framework Convention on Climate Change, (2022) FCCC/CP/2022/10/Add.1 <https://unfccc.int/documents/626564>

²³ United Nations Environment Assembly resolution 9, "Sustainable and resilient infrastructure,"

UNEP/EA.5/Res.9 (2 March 2022) <https://wedocs.unep.org/handle/20.500.11822/39744>

²⁴ United Nations Environment Assembly resolution 5, "Nature-based solutions for supporting sustainable development," UNEP/EA.5/Res.5 (2 March 2022) <https://wedocs.unep.org/handle/20.500.11822/39744>



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climate change. This fund focuses on grants that are using natural methods to increase climate resiliency.

So far, much focus has been on natural, ecosystem-restoration-driven protections against famine and drought. Many resolutions have been drafted and actions have been taken to this end. Strengthening roads, telecommunications, power, and water networks has greater costs and complications between political boundaries. Building seawalls and sourcing freshwater is expensive faces similar issues. Consequently, infrastructure has seen less emphasis from the UN Environment Programme.

However, the UN General Assembly has established a Green Climate Fund. This fund pledges just under USD 10 billion to be replenished annually. The Green Climate Fund may be used to fund actions towards improving climate-resilience in infrastructure.²⁵ Additional funding of research and development for new technologies has been a focus of UN bodies. Many nations and international organizations have used the frameworks, guidelines, and research from the UN Environment Programme to implement mitigation strategies.

Country & Bloc Positions

China: As the highest emitter of greenhouse gasses globally and a growing economy, China has an important voice in the international conversation on climate-resilient infrastructure.

China's climate policy generally relies on an adaptation approach versus a mitigation approach. Consequently, they invest more in infrastructure that can handle the consequences of climate change. Chinese policy tackles climate change with an engineering and technology approach.²⁶

China welcomes opportunities for the entire international community to cooperate to slow the effects of climate change, and especially to better insulate the effects on former colonial territories still recovering from the effects of their bondage at the hand of colonial European powers and the United States.

As a former colonial state itself, China cannot offer as much direct aid as it would like. Instead, it calls on former colonial powers to bear these burdens justly. China instead offers generous loans to other developing countries, as part of its *Belt and Road* program to support economic development everywhere. Belt and Road loans enable all countries to share directly in China's growing prosperity.

European Union (EU) climate law demonstrates intent for increasing adaptive infrastructure techniques in response to climate change.

Heatwaves and drought became headline news as average temperatures soared across all of Europe in summer 2023. In particular, nations bordering the Mediterranean faced life-threatening levels of heat²⁷. Storm surge and flooding have always been problems for nations bordering a sea or ocean, but the damage only

²⁵ UNGA, Protection of global climate for present and future generations of humankind, resolution 77/165. New York United Nations, 14 December 2022, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N22/755/85/PDF/N2275585.pdf>

²⁶ Prytherch, Mallie. Lieberthal, Kenneth G. Hass, Ryan. "Unpacking China's Climate Priorities." Brookings, 14 June 2023.

<https://www.brookings.edu/articles/unpacking-chinas-climate-priorities/>.

²⁷ Sky News. "How Europe's Heatwave Is Impacting Spain, Italy, and Other Popular Holiday Destinations." Sky News, 21 July 2023. <https://news.sky.com/story/europe-heatwave-how-is-it-impacting-spain-italy-and-the-continent's-other-most-popular-holiday-destinations-12922373>.



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worsens as climate change continues to change weather patterns while sea levels rise.

Given the general level of wealth across the European Union, financial support for climate-resilient infrastructure is seen favorably.

The 27 Member States of the EU support the world's largest development aid program. The EU increasingly supports climate resilience and mitigation projects. The EU sends aid globally, but especially favors assistance to African countries and the Middle East. In exchange, the EU asks recipients to support liberal values, including greater inclusion of women and minorities in these projects, to show more official transparency, support democratic values.

India is the world's third highest emitter of greenhouse gasses, behind the United States. As a growing economy with hundreds of millions of citizens without connection to the power grid, infrastructure is constantly expanding as new people get connected for the time to power and communication networks.

As India expands infrastructure and rebuilds infrastructure after extreme climate events, they have taken a future-proof approach to their development of climate-resilient infrastructure. This may be seen in Kerala, where government has redesigned placement of roads, transmission lines, and telephone cables to increase resilience to climate shocks²⁸.

Non-Aligned Movement: The 120 Member States of the Non-Aligned Movement (NAM) are mostly developing nations, former colonial territories who weren't aligned with NATO or the Soviet Union during the Cold War.

In the UN, the NAM is extremely powerful, due to its large size, but members have different interests. Maintaining unity is difficult. The 120 NAM Member States vary on climate infrastructure policy. Some strongly support measure to halt or reverse climate change. Others are suspicious, preferring to emphasize their economic development instead. Most welcome foreign assistance for problems such as climate change resilience and mitigation, but they can be suspicious of the political condition of aid, such as Chinese insistence that aid recipients favor Chinese imports, or European demands that recipients support liberal democratic values.

NAM Member States typically push for funding UN programs related to climate change, welcoming funding from wealthier nations. Nations that industrialized long ago, the NAM notes, emitted greenhouse gasses without a thought for the consequences. Many NAM members feel they should be allowed a similar leeway today.

Russian Federation climate policy has historically been rather weak across the board. According to Christer Pursiainen, the understanding of Russian critical infrastructure protection is rather weak in the non-Russian-speaking regions of the world²⁹. However, infrastructure projects requiring international collaboration with EU member states is scant.

Half of Russian exports in 2021 were in crude oil, petroleum, and natural gas, accounting for 12 percent of GDP. These products are a frequent target of international climate change, which has given Russia a typically antagonistic view of climate policy. One must also

²⁸ Keou, Oceane. Bezzam, Vijetha. "India's Road to Resiliency: Why Climate Proofing India's Road Network Is Vital to Secure Sustainable Development." World Bank Blogs (blog), 2 October 2023.
<https://blogs.worldbank.org/endpovertyinsouthasia/indias-road-resiliency-why-climate-proofing-indias-road-network-vital-secure>.

²⁹ Pursiainen, Christer. "Russia's Critical Infrastructure Policy: What Do We Know About It?" European Journal for Security Research 6, no. 1 (29 October 2020): 21–38.
<https://doi.org/10.1007/s41125-020-00070-0>.



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acknowledge the fact that thawing permafrost and increasing temperatures across Russia are posing dangers to oil, petroleum, and natural gas infrastructure.³⁰

United States: Recent action from the administration of President Joe Biden provides over USD 100 billion in funding for infrastructure projects with a focus on climate resiliency. Much of the USD 100 billion is focused on improving the transit system in the United States to provide alternatives to internal combustion engine vehicles. However, USD 10 billion is focused on building evacuation routes, increasing coastal resilience, strengthening existing infrastructure against extreme weather, and relocating power generation and water treatment facilities to locations less likely to be impacted by extreme weather without decreasing their functionality.³¹

Infrastructure investment has been a hot topic in the past few presidential elections in the United States. However, the United States tends to flip between climate-forward policy decisions from one administration to another.

The United States itself experiences the full gamut of climate-change, from damaging hurricanes to severe droughts. For the US, climate resilience and mitigation start at home, including protection from drought, although famine is a more remote issue.

American delegates are aggressively cautious. They will be outspoken in their efforts to ensure that the ECOSOC only approves action that is low risk or risk free. As a major foreign aid donor, the United States supports projects with assured results. Above all, American aid money is contingent on results. For the US, all foreign

engagement ultimately is about local, domestic politics. American Foreign Service Officers are civil servants, not elected officials, but they are very sensitive to the demands of elected officials. Projects are evaluated not just by what they do, but how they will be seen by voters at home.

Because the domestic political criticism of failed aid projects is high, sure to be denounced in Congress as waste, fraud and abuse, American officials have to be very careful about which projects they support. They are hesitant to support strong UN mandates for action, preferring to retain complete control over the use of American Taxpayer Dollars, a phrase that might apply to any donor state, but which has great implications in American domestic politics.

Some possible proposals for action

When it comes to issue of climate change mitigation and resilience from drought and famine, the ECOSOC has great latitude. As the representative of sovereign UN Member States, the delegates at the ECOSOC are free to develop the proposals and projects they themselves can agree on. Here are several possible proposals for action, suggestions of typical approaches UN Member States have been able to agree on in the past.

Commission a Secretary-General's study the issue: When the Member States of the UN are sharply divided on major action, they often chose instead to authorize a major study of the issue. This allows the ECOSOC to stay engaged,

³⁰ Conley, Heather A., and Cyrus Newlin. "Climate Change Will Reshape Russia." CSIS, 21 September 2022.

<https://www.csis.org/analysis/climate-change-will-reshape-russia>.

³¹ US Department of Transportation. "Fact Sheet: Climate and Resilience in the Bipartisan Infrastructure Law," n.d.

<https://www.transportation.gov/bipartisan-infrastructure-law/fact-sheet-climate-and-resilience-bipartisan-infrastructure-law>.



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postpones debate, and ensures it will have to deal with the issue later.

The ECOSOC could have the UN Secretary-General study the general issue of climate change, drought and famine, or a specific aspect. A study would have to be authorized by an ECOSOC resolution. This resolution would establish the study's *mandate*. It should explain:

- What are the goals of the study?
- What is its production schedule for delivery to the Council?
- Where is the Secretary-General to find authors; *independent experts* chosen by the Secretary-General, or *government appointed experts* chosen by each of the Security Council Member States?
- Finally, the mandating resolution should explain what happens when the study is finished. Does it make recommendations for the Council to vote on? Or is it strictly an advisory document?

Increase the resources available to UN agencies to help developing countries cope with the dangers of drought and famine. Simply increasing resources available to major UN agencies responsible for helping Member States anticipate or respond to climate-related drought and famine emergencies would be an important step.

UN agencies already heavily involved include the *United Nations Development Programme* (UNDP), the largest UN agency, with large offices around the world. The *World Food Programme* (WFP) is the UN's major outlet for emergency assistance.

Establish a global early warning system to give nations time to prepare for the impact of severe weather conditions. This may allow for preparation against wildfires amid heatwaves, which may ravage crop fields. According to the UN Environment Programme, early warning systems are some of the most cost-effective emergency preparedness measures with one third of the world population lacking coverage.

Create a new United Nations global drought and famine adjustment fund. fund to support drought and famine disaster resilient infrastructure (DRI). Three major issues would have to be resolved. First, which countries to support? This program could include money to help all Member States ensure the resilience of their major roads, telecommunications networks, energy grids, and water access facilities, strengthened to face extreme weather events. Even for wealthier nations, funding large-scale strengthening of all these vital socioeconomic arteries is a difficult challenge. The Non-Aligned Movement will prefer to have funding only for post-colonial or poorer countries, rather than spread thinly among all countries.

A second issue is whether to make funding available through grants or loans. Traditional aid donors, like Europe, Japan and the United States, rely on direct grants. This gives them greater control, ensures fast results, and few long-term disadvantages to the recipient, but keep the scale of assistance limited. China and other newer donors such as Middle East oil exporters prefer to distribute loans. This gives them more long-term influence and allows much bigger projects, but with obvious disadvantages for recipients.

A third issue for a new adjustment fund is how to use the money? Should choices be left to each sovereign Member States recipient? That would be popular with recipients, but not with donors, who need to see specific results and promote their own foreign policy and international development goals. If donors have little or no control, they will not be generous. But recipients want to maximize their own national control.



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