

Past the Point of No Return?

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Global Climate change is one of the most acute problems in the world today. Industrial activities in developed countries have contributed significantly to climate change, yet low-income countries are often the first ones to pay the price. Due to scarce relevant recourses in the developing world, resiliency against climate change is limited, making developing countries more exposed to climate vulnerability. Georgia is no exception. The small country with a complex mountain relief is already experiencing the adverse consequences of climate change. The increased frequency of natural disasters over the past several years poses a significant threat to society and infrastructure, and thus to the country's stability and development. Since the major emitter countries have largely developed at the expense of the rest of the world, expecting them

to pay their 'responsibility debt'¹ to low-income countries through finance and technology support is justifiable.

The Earth is experiencing a significant rise in temperatures, which is primarily caused by increasing levels of greenhouse gases (GHG) which trap the sun's heat and prevent it from leaving the Earth's atmosphere. The Earth's average temperature has already increased approximately 1°C above preindustrial levels. As concentrations of greenhouse gases, particularly carbon dioxide (CO₂), continue to rise, it reduces Earth's heat radiation to outer space, thus causing an energy disbalance. Since the Industrial Revolution, CO₂ concentration has increased rapidly and is currently over 50% higher than before 1750.

Global climate change poses an ever-growing threat to human health and the environment. The adverse effects can already be observed on all continents, posing risks to health and security. In addition, climate change has a severe negative impact on ecosystems. Yet early signs show things are about to get worse. Freshwater scarcity, heat and cold waves, extinction of species, adverse effects on biodiversity, ocean acidification, rapid sea level rise, severe storms, droughts, and wildfires, diseases increasingly transmitted by insects and rodents, are just some of the current and anticipated effects of climate change.²

Since the industrial revolution, the biggest emitter countries have rapidly made economic advancements and developed in numerous aspects, while their contribution to global warming has made developing nations suffer severely. The Center for Climate and Energy Solutions estimates that most of the world's greenhouse gas emissions come from the United States, the European Union, Japan, and China.³ However, between 1998 and 2017, the list of the most adversely affected territories was topped by low-income countries with low levels of economic and infrastructural development: Puerto Rico, Honduras, Myanmar, Nepal, Peru, and Vietnam.⁴ Developed countries have the capacity to minimize or avoid the adverse consequences of climate change due to their advanced economies, technology and agricultural systems. Developing countries lack the same financial resources, lowering their adaptive capacity, thus are disproportionately burdened by climate impacts. Some of the impacts of climate change in low-income countries include rising food insecurity, freshwater shortages, increased natural disasters, health risks and aggravated poverty. In September 2017, Puerto Rico and Dominica were severely hit by Hurricane Maria, killing approximately 3000 people, driving thousands into homelessness, almost completely destroying the islands' infrastructure, and leaving people in the region without electricity for months. In May 2017, heavy floods occurred in Sri Lanka, killing more than 200 and displacing more than 600,000. In Peru, 67 people were killed and 115,000 homes destroyed due to heavy rainfall. More than 40 million people were affected by massive rainfall across Nepal, Bangladesh, and India in the same year.

Georgia is also facing the negative effects of climate change. According to the Third National Environmental Action Programme of Georgia, in light of climate change, the frequency of natural disasters has increased significantly in recent decades and the effects of climate change have

1 <https://www.bbc.com/future/article/20200618-climate-change-who-is-to-blame-and-why-does-it-matter>

2 https://library.wmo.int/doc_num.php?explnum_id=10211

3 <https://www.c2es.org/content/international-emissions/>

4 https://germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202019_2.pdf

become more apparent. Sea level rise of the Black Sea has damaged public infrastructure and private property near the coastline, the ski season in mountain resorts has shortened due to a lack of snow, eastern Georgia is under the threat of desertification because of decreases in rainfall, there are increasingly frequent heavy storms and flooding, forest fires, mudslides and avalanches, and changes in precipitation patterns. “The adverse impact of climate change on ecosystems and the economy pose severe threats to Georgia’s sustainable development. Geographical location, complex dissected landscape, land cover diversity and specific climate, containing almost every type of climatic zone, set the conditions for a wide variety of negative consequences of climate change in Georgia” warns the report.⁵

Climate change poses a threat to the Georgian economy, particularly the agriculture sector, which is both vitally important for the Georgian economy and the most climate-sensitive of all economic sectors. Although agriculture's contribution to the GDP of Georgia is relatively low, around 6.22%, it employs up to 42% of the Georgian population.⁶ Unfortunately, consequences of climate change are already significantly reducing agricultural productivity, and natural disasters such as drought and hail continue to impact the sector’s development. The increased frequency of natural disasters has resulted in lower quality crops, crop failure and poorer livestock yields. These risks have necessitated the development of a national plan for agriculture sector adaptation to climate change, initiated by the Ministry of Agriculture of Georgia within the scope of the project Agriculture Modernization, Market Access, and Flexibility (AMMAR). The adaptation plan aims to increase climate resilience through investments to upgrade relevant infrastructure, enterprises and smallholder farmer production systems and technologies. Yet, Georgian farmers are still not suitably adapted to the current climate. The key strategic directions of the strategy for Georgian agriculture development of the 2015-2020 period were not achieved.

Tourism, which is also highly climate-sensitive, is another major economic sector for Georgia. Tourism in Georgia has grown rapidly over the past decades to become the largest single contributor to the country's economy.⁷ The prospects for the growth of this field, however, rely on a number of factors, primarily the environment. According to the Georgian National Tourism Administration, approximately 64.3%⁸ of Georgia's service export revenue comes from tourism. Moreover, in 2018, the sector contributed 7.5%⁹ to the total GDP. A lack of snow can already be observed in all ski resorts of Georgia – one of the most popular destinations for winter tourists – threatening the future economic viability of ski resorts. Climate change poses a threat to Georgia's cultural heritage as well. The risks of physical damage to cultural heritage monuments and archeological sites rise dramatically with extreme temperature changes and frequent natural disasters. Regretfully, systematic in-depth research has yet not been conducted to assess the full scope of risks climate change poses to Georgia’s cultural heritage.

The Georgian Laws on Environmental Protection (1996) and on Ambient Air Protection (1999) acknowledge the significance of mitigation, which involves limiting GHG emissions, either by

5 <http://eiec.gov.ge/getattachment/NavMenu/Documents/National-Reports/2007-2009-National-Report-of-the-State-of-the-Environment-of-Georgia.pdf.aspx>

6 <https://www.statista.com/statistics/441382/georgia-gdp-distribution-across-economic-sectors/>

7 <https://unstats.un.org/bigdata/events/2019/tbilisi/presentations/Session%203/4%20-%20Georgia%20NTA%20-%20Tbilisi%20-%20202019.pdf>

8 <https://gnta.ge/wp-content/uploads/2018/07/2017-ENG.pdf>

9 <https://gnta.ge/wp-content/uploads/2018/07/2017-ENG.pdf>

reducing sources or enhancing the sinks of greenhouse gases. The good news is, the share of Georgia's contribution to the world's GHG emission is very small. No mitigation efforts, however, will stop the need for adaptation. Unfortunately, Georgia has still not presented its national adaptation plans. Building adaptive capacity to develop climate resilience is crucial for Georgia to adjust to climate change. When developing adaptation plans, it is important to remember that due to diverse climatic zones, the regions of Georgia are impacted by climatic factors differently, thus an individually tailored approach to each region is needed. Notably, environmental awareness and education in Georgia is growing. In 2013 the Ministry of Environment Protection and Agriculture of Georgia established the Environmental Information and Education Center. The Center promotes sustainable development through environmental and agricultural education. Still, there is a need for further improvement in raising awareness among Georgian society to support policies that will promote sustainable development in the long-term.

Responding to climate change is a global concern and cannot be solved by countries working individually. For several decades, the debate over how to combat climate change has raged, resulting in several important agreements, including the Kyoto Protocol and the Paris Agreement, both legally binding under international law. The Kyoto Protocol entered into force in 2005 and required developed countries to reduce emissions. However, it did not oblige developing countries, including major carbon emitters China and India, to take action.¹⁰ This issue was resolved in the Paris Agreement, adopted by nearly every nation in 2015, which requires all countries to cut GHG emissions to prevent a global temperature increase and to strengthen those commitments over time. The treaty is a landmark environmental achievement that recognizes the significance of collective global action and adaptation to current and future dangers ahead. Regretfully, many experts insist that even if all signatories fulfill their commitments, the Paris Agreement is not effective enough to prevent a global temperature rise by 1.5°C or even 2°C.¹¹ As mentioned in the Climate Change Performance Index (CCPI) 2021, “While a turning point in global emissions seems to be within reach, five years after the Paris Agreement no country is on a path compliant with the Paris Agreement goals.”¹²

Despite all the issues, the Paris Agreement shows that the world has united to work together towards positive change, leaving room for hope. Simply put, the Paris Climate Agreement is better than no agreement.

How Did the COVID-19 Pandemic Affect Climate Change?

The Covid-19 Pandemic forced governments to impose measures to limit the spread of the virus. Although, due to lockdowns and suspensions of public transit around the world, daily global emissions of CO₂ fell significantly, concentrations of the long-lasting gas have continued to rise in the atmosphere. Concerns are growing that the current health crisis has taken the focus away from the climate change. Without a doubt, the pandemic has hindered global environmental efforts and countries' plans to step up climate action in 2020. Furthermore, due to lockdowns, scientists have been unable to travel to do their fieldwork. Many climate expeditions were stopped and scientific meetings were cancelled, forcing scientists to find alternative ways to continue their work and exchange information. Scientists working from home have limited access to equipment and data,

¹⁰ <https://www.cfr.org/backgrounder/paris-global-climate-change-agreements>

¹¹ <https://www.concernusa.org/story/paris-climate-agreement-humanitarian-work/>

¹² <https://newclimate.org/2020/12/07/the-climate-change-performance-index-2021/>

which significantly affects their research, posing the threat of a data gap, as well as slows the pace of their overall fieldwork.

The United Nations Climate Change Conference, also known as COP26, which was set to take place in November 2020, has been officially postponed by a year due to the ongoing, worldwide effects of COVID-19. However, the pandemic should not be used as a cover by governments to weaken their environmental regulations or as an excuse to delay climate action. Indeed, the delay of COP26 has risks, potentially impeding progress and losing momentum in the fight against climate change, but it is not necessary for countries to wait until the conference to take further action. There is no time to waste – even after the pandemic ends, the climate crisis will still be here.

Without serious mitigation and adaptation, climate change will have dramatic adverse impact on everyone, especially the least developed countries, who have contributed little to the problem, but suffer the most. The later serious actions are taken, the worse the consequences and the cost will be. To significantly reduce future damages, we need to act now. The Covid-19 The COVID-19 pandemic has shown us how much can be done in a short time with political will and by mobilizing public attention and funds to combat the crisis. When defining policy priorities, climate change vulnerability analyses are important. Regions with the highest vulnerability need the most attention. Developed countries who provide climate finance to the developing world should choose different approaches for different countries. For rapidly developing countries, the focus should be on mitigation of GHG emissions, and for the least developed countries, more attention on adaptation is needed to reduce their vulnerability.

The question remains: Is it too late to prevent the most catastrophic effects of climate change? As climate scientists Jorgen Randers and Ulrich Goluke explain, even if we reduce human-produced greenhouse emissions to zero today, global temperatures will continue to rise and affect future generations.¹³ In other words, we are past the point of no return. However, it is not too late to avoid some of the worst effects of climate change if the major emitters of the world cooperate to address the issue head on.

¹³ <https://www.nature.com/articles/s41598-020-75481-z>