Medical students' brief overview of climate change policies implemented by developed countries: their application to small islands and low-lying developing states

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ABSTRACT

Small Island Developing States (SIDS) are disproportionately impacted by climate change. SIDS emit less than 2.42% of global greenhouse gas emissions, yet they are the most affected. This article discusses the impact of climate change on SIDS, the strategies implemented by developed countries that can be adapted for SIDS and the challenges that must be overcome to combat climate change in SIDS.

INTRODUCTION

Climate change is defined as any change in climate due to natural or human causes that can persist for an extended time, such as decades or more.[1] Climate change impacts many sectors of society, including health, quality of life, the economy and the livelihoods of citizens. Small Island Developing States (SIDS) are disproportionately affected by climate change.[1,2] Climate change should be prioritised due to its potential to severely burden healthcare systems across the globe with water-, vector- and food-borne infections, mental health conditions and respiratory diseases.[3] As future doctors, current medical students should prepare themselves for the emerging healthcare system by advocating for climate change education.[4]

The World Health Organization conducted a health and climate change survey report, which found that less than 30% of low and lower-middle-income countries (LLMICs) have been internationally funded for climate change support.[3] The Pan American Health Organization put forward the SIDS initiative, which aims to shape healthcare systems that are more resilient to climate change by the year 2030.[1] The United Nations also has a climate change-related agenda called Net Zero, aimed at reducing greenhouse gas (GHG) emissions to as little as possible by the year 2050.[5] Additionally, countries in the European Union (EU) have implemented important policies that aim to tackle greenhouse gas emissions by focusing on electricity, transportation and fossil fuels.[6] These efforts were made in response to the trend of rising global temperatures due to increasing carbon emissions and the hazardous consequences of such a reality. These successful policies can be amended and enforced in SIDS to reduce the burden that climate change has on their populations.

DISCUSSION

The production of greenhouse gas emissions due to human actions, such as fossil fuel combustion or deforestation, disrupts the removal of carbon dioxide from the atmosphere, thereby resulting in climate change. SIDS, including many of the Caribbean nations, have been disproportionately impacted by the effects of climate change, despite contributing a minority of global GHG emissions.[1] Extreme weather events, including abnormally hot days, repeated and prolonged droughts, catastrophic hurricanes, floods and storms impact the food, water and nutrition security of these nations. Rates of vector-, food-, water-borne and noncommunicable diseases are rising, as climate change increases the risk of climate-sensitive diseases.[1,7]

Rising sea levels due to climate change are threatening the physical existence of these islands, proving that climate change is more than an environmental threat for SIDS. Climate change affects the healthcare system, livelihoods, culture and economies of these countries.[1-3] Hence, there is a vital need to develop and implement policies to mitigate the disastrous consequences of climate change.

The disproportionately severe impact climate change has on low-income countries makes it a concern for environmental justice. Policy proposals designed for climate change must be carefully planned and executed with socioeconomic inequalities in mind, lest they inadvertently exacerbate these issues.[8] Consumerist strategies for targeting climate change, with their focus on wealthy rather than vulnerable nations, leave climate activists wary. Schlosberg and Collins state, "The concern is that any policy to reduce carbon emissions…will inevitably raise the price of energy. That, of course, hurts the poor most. [8]"

Potent greenhouse gases, including methane and carbon dioxide, are produced by fossil fuel combustion. Experts agree that the world must transition from a fossil fuel-dependent economy towards more eco-friendly energy alternatives, such as wind, hydroelectric, or solar power. To achieve this, policies must be adopted to reduce fossil fuel usage, such as instituting carbon emission caps or increasing fossil fuel taxes for significant GHG emitters. Unfortunately, such actions would raise energy costs and adversely affect economic growth.[8] These strategies must therefore be carefully considered and adapted to local needs and resources to prevent undue negative impacts within SIDS.

Secondary policies consider mitigating climate change by increasing the usage of biofuels obtained from agricultural products. Yet, such tactics would significantly increase food prices to the detriment of low-income populations, who are already disadvantaged by climate change the most. Other policies, such as re-educating or retraining previous employees of significant fossil fuel producers for more eco-friendly jobs, financing social welfare for those negatively impacted by the transition to a more climate-conscious economy and strategies to mitigate the increased energy costs, may also be worth consideration.[8]

The Eastern and Southern Caribbean (ESC) region's GHG emissions are below 2.42% of worldwide emissions. Notably, the Caribbean's per capita emissions surpass the

global average. Most of these emissions are produced by the energy sector, with ESC nations attributing this to their strong fossil fuel dependence for electricity generation and transportation, as cited in a report to the United Nations Framework Convention on Climate Change (UNFCCC).[9]

The countries of the European Union have implemented policies and mitigation strategies that are targeted towards three of the main contributors of climate change: electricity generation, industry and fossil fuel production and transportation.[6,7] Though the ESC region contributes a minority of GHG emissions worldwide, the aforementioned contributors are the major factors in their increased per capita emissions.[9] Therefore, policies should be adapted and implemented to target these sources of emissions in the ESC region. Looking at successful policies enforced in other nations, such as those cited below, may potentially serve as a roadmap to combat such issues in SIDS.

In 2018, electricity generation was the second-highest contributor to GHG emissions, generating 25% of worldwide emissions. The EU has implemented several successful initiatives to lessen these emissions, including the EU Renewable Energy Directive and Member States support programmes. These programmes measure success as a rise in the share of renewable forms of energy in total electricity generation each year. In the EU, from 2005 to 2015, the proportion of renewable energy in total electricity generation increased by 1.35% points annually, excluding hydroelectricity, compared to the global average of 0.5% points per year.[6]

Industry and fossil fuel production accounted for 29% of global GHG emissions in 2018. In response, the EU has implemented successful policies to improve their levels of energy efficiency, indicated by less final energy consumption per physical output. These have included energy efficiency rules, air pollutant emission standards and an emissions trading mechanism. As a result, the EU's energy efficiency has risen by up to 1.3-1.8% annually, compared to approximately 1% per year globally.[6]

In 2018, transportation accounted for 13% of worldwide GHG emissions. Subsidies for owning electric cars and incentives for parking them are among the successful initiatives enacted in Norway that have resulted in a higher proportion of electric vehicles in new registrations. The share of electric cars in Norway increased from 0.3% to 56% between the years 2010 and 2019, compared to the share of new electric vehicles globally being less than 1%.[6]

Health adaptation and mitigation requires financing and resources. The most climate-vulnerable countries often have the highest illness burdens and lack adequate resources to fully plan for and guard against the magnitude of climate consequences they encounter.[3] Such countries can use funding sources to conduct climate projects that will help minimise the effects of climate change on their populations. Parties to the UNFCCC agreed to mobilise $100 billion per year by 2020 to assist low- and lower-middle-income countries in adapting to climate change and promoting low-carbon development.[3,8] However, only 28% of LLMICs said their health ministry is currently receiving foreign financing to help their health adaptation and mitigation initiatives. Inadequate climate financing creates huge hurdles for the world's most vulnerable countries, which rely on funds to implement actions to strengthen their climate resilience and adapt to specific climate effects.[3] If climate finance falls short of the mark, we risk worsening existing global, regional and local inequities. Countries can acquire financing channels from public, private and non-traditional sources, such as the Global Environment Facility, Green Climate Fund, Special Climate Change Fund, Least Developed Countries Fund and Adaptation Fund.[3]

CONCLUSION

The 26th meeting of the Conference of Parties in Glasgow ended with an inadequate climate pact, with pledges that do not go far enough to prevent the global temperature from rising by 1.5°C. However, there was an agreement between the gathered nations to develop significant strategies to maintain the goal of reducing climate change by next year's meeting.[10] These initiatives should emphasise combating the environmental injustice that climate change poses to LLMICs. Furthermore, these strategies and policies should prioritise the ESC region, which is the most vulnerable to climate change. Additionally, developing countries should adapt and utilise successful policies implemented by developed countries to their specific circumstances.

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