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The Threat of Global Warming and the Ways to Counter it

1- Introduction

Thesis Statement

Global warming is an environmental catastrophe threatening the existence of life on the Earth by unleashing various environmental, socio-economic and political impacts. Therefore, there is dire need of adopting counter-measures to tackle this existential threat.

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Introduction

The United Nations Secretary General Antonio Guterres's recent statement of entrance into an era of global flooding is a clarion call to the entire humanity about the threatening impacts of global warming. Similarly, his statement during his visit to the flood-inundated parts of Pakistan during July 2022 that this country is bearing the consequences of the global warming induced climate change testifies the global scientific consensus about global warming as existential crisis further. Thus, there is no stance-B about the life-threatening impacts of global warming among the world community except little skepticism. Global warming is an environmental catastrophe and it mainly engenders

negative impacts on environment. Climate change is the major and foremost environmental impact, which results in a number of devastating socio-economic, political life-threatening impacts.

The looming water crisis across the globe and accompanying environmental, socio-political and economic crises can better depict the threat to the life posed by the climate change induced by global warming. Therefore, this global crisis needs to be tackled by adopting global action plan with major focus on assisting the disadvantaged developing nations more prone to the threats of global warming.

As the threats of global warming are already being unleashed, therefore adaptation needs to be prioritized. Similarly, to reduce the intensity of global warming there is ^{also} dire need of adopting mitigation measures. If counter-measures are not ^{being} prioritized, then there is no end-result of global warming, except the probable extinction of life from the Earth's surface.

Global warming is essentially a rapid increase in Earth's temperature.

due to ever-increasing emission of anthropogenic greenhouse gases, which block the outgoing sunlight reflected to space. The growing industrialization to meet the wending needs of multiplying population of the world is the primary factor responsible for the increased greenhouse gases emission. As the level of carbon dioxide, the most potent greenhouse gas, has crossed the 420 Part Per million (PPM) as compared to 280 PPM - the pre-industrial level. Similarly, the level of other greenhouse gases like methane, nitrous oxides, carbonfluoro carbons (CFCs) and sulphur oxides is also increasing rapidly bypassing the pre-industrial level according to the data revealed National Aeronautics and Space Administration (NASA) and Intergovernmental Panel on Climate Change (IPCC). Resultantly, the global warming has been on the up track engendering various environmental threats and climate change is the major one. Climate change, in turn, has been leading to various socio-economic and political consequences for the world at large on one hand, while

the record rise in temperature and subsequent record sea level rise, alteration in global wind and ocean circulation system, extreme weather events, rapid biodiversity loss and decreased ^{fresh} water resources are the worth-mentioning impacts threatening the life on the Earth. Therefore, the global warming has become major existential threat globally surpassing ^{the} existing ^{global} socio-political and economic crises.

Global warming is essentially the increased warming of environments; therefore it primarily threatens the environment. Increased temperature changes the entire elements of environment like air pressure, air circulation pattern, humidity, precipitation pattern and the ocean circulation pattern. Similarly, it also results in rising the sea level and exacerbates the drought and desertification further. Resultantly, habitats have been declining; coastal zones have been submerging while living organisms especially humans have been confronting the increased extreme weather events like heatwaves, floods,

droughts, hurricanes and cyclones. These extreme events bring forth multiple ^{accompanying} environmental challenges further, which threaten the natural resources in various ways. The most prone natural resource to the environmental impacts of climate change is ^{fresh} water resources on the Earth.

Global warming seriously threatens the freshwater reserves making water crisis an existential threat for many countries. Due to its threatening consequences, water crisis is considered as a deciding factor for the twenty-first century wars. Global warming induced rapid glacial melt, decreased precipitation, increased salinization of freshwater and declining water table are the factors responsible for making fresh water twenty-first century's oil. Water insecurity is accompanied by food insecurity and there are 4.1 billion people in the world facing food insecurity according to World Food Program's (WFP) latest report. Similarly, freshwater habitats have been dwindling rapidly while green vegetated lands have been transforming into deserted

dry lands. Therefore, looming water crisis has been resulting in a number of socio-economic and political crises for the world.

Global warming has been endangering in a number of threatening social impacts for the world. Global warming is resulting in the submerging the fertile land under saline water, drowning the houses by flood, destroying infrastructure by either thunderstorm or cyclone and windstorm. Consequently, food insecurity, huge capital loss, unemployment and outbreak of epidemics have been tearing the social fabric apart and pose multiple social impacts to human beings. Presently, environmental refugees have become a serious issue surpassing the number of migrants due to other socio-economic and political factors. The floods in July 2022 in Pakistan led to displace more than 3 million people according to Economic Survey of Pakistan 2022-23. This number surpasses the registered Afghan refugees living in Pakistan due to conflict in Afghanistan. Therefore, global warming seriously threatens the

world socially and brings a number of related economic and political threats.

Global warming has not only been increasing the economic burden of countries by posing a number of environmental and social threats but it has also been widening the existing economic inequalities and poverty levels. A huge economic capital is required to cope with challenges unleashed by the global warming and ensure an economy resilient to the threats of global warming. Increased unemployment, reduced agricultural yield, declining freshwater reserves, multiplying environmental refugees and increased share of environmental hazards in national budgets are the evident facts depicting the economic impacts of global warming. Economic Survey of Pakistan (ESP) 2022-23 reveals that floods in July 2022 resulted in an economic loss of more than 30 billion American dollars and the floods were the negative outcome of the global warming. Therefore, global warming is responsible for multiple economic threats, which in turn results in political repercussions.

For the world.

Global warming has added an additional aspect to global politics - climate politics. Therefore, the world-nations are at loggerheads in political battle to offset the challenges of global warming. As the developed nations have responsible for the the global warming due to their unabating emission of greenhouse gases by their advancing industrialization. They also possess the capacity to cope with various socio-economic and environmental challenges of global warming. On other hands, developing nations have little responsibility for today's global warming while they lack the capacity to tackle its challenges and thus, they are more susceptible to calamities of global warming. Multiple agreements and framework exist laying principles of cooperation among nations and also assigning socio-economic responsibilities to the developed world to assist the less developed and developing nations. However, they fail to fulfill their due responsibilities. Therefore, such prevailing politics of non-cooperation

among the world have been widening the existing socio-economic and political fissures globally.

The discussed threatening impacts of global warming imply that in the absence of counter-measures, the only probable threat of global warming is the extinction of life. It has been resulting in the Earth to become uninhabitable for every living being. As humans have been confronting multiple socio-economic and environmental threats while one out of four species have been facing threat of extinction according to Living Planet Index. Ecosystems have been disrupting while foodchains have been broken causing disturbance in prey-relationship and emergences of epidemics for both humans and plants and animals. Small island developing countries like Maldives and Marshall Islands have been submerging due to rising sea level. Similarly coastal zones housing more than one-third of population globally are inundating due to coastal degradation and increased extreme weather events. Therefore, wiping

out of life from the Earth's surface is destined due to global warming if it is not countered effectively in time.

Global warming is a global catastrophic issue and therefore, it needs global action plan to be tackled efficiently. As the world divided into multiple poles - one contributing to it, another doing efforts to mitigate and some sitting idly witnessing the destruction of planet - cannot lead to solve this global issue. There are many multilateral platforms like United Nations Framework on Climate Change (UNFCC) and Intergovernmental Panel on Climate Change (IPCC), which are aimed to streamline the global efforts. They have put multiple frameworks into action like Conference of Parties (COP) Kyoto Protocol which have unified the global actions against global warming. Recent COP27 and COP28 in 2022 and 2023, respectively are the success stories which have initiated Climate Damage fund first time. However, the developed and industrialized

nations are still reluctant to share their responsibility by generous economic and technological contribution. Therefore, there is need of binding global climate action plan under the auspices of the United Nations which can institutionalized the global efforts to counter global warming in concrete way.

As the industrialized world have been reaping the fruits of development since long, but the developing nations are the worst victims of the development for bearing the brunt of the ^{adverse} consequences of global warming. Therefore, assisting the former countries need to be prioritized.

They neither have the capacity to adapt to the adverse repercussions nor have the economic and technological prowess to play sole in mitigate global warming. It is, therefore, required assistance for these countries from the multilateral fora and developed countries, as well in both economic and technological realms. §

A two-fold strategy is also the need of hour to tackle the looming consequences of global warming and also to reduce and offset the contributing greenhouse gases emission. As the ^{some} disastrous consequences of global warming are imminent on one hand while some are already happening on other hand. Therefore, pre-emptive adaptative measures are required at first stage which can help to offset the negative impacts of global warming-induced hazards. Migration of susceptible population, building resilient infrastructure, adopting resilient agriculture and ^{growing} water-efficient crops and plants are few effective pre-emptive adaptation strategies.

In order to cope with already unleashed disastrous consequences of global warming, reactive adaptative measures are also needed. As huge population of the world have been facing various extreme weather events leading to their enormous

socioeconomic losses. Assisting the affected economically, providing basic necessities and rehabilitating infrastructure are few ~~adaptive~~ adaptive measures, which need to be taken in areas grappled with various climate hazards. However, besides adaptive measures way forward also include source-oriented and effect-oriented mitigation measures to counter global warming.

Source-oriented mitigation measures for global warming can help in reducing the greenhouse gases emission - major contributing factor to global warming. As these gases have already crossed the threshold limits in atmosphere rising to the highest levels historically. Therefore, their reduction by decreased consumption of fossil fuels, increased green cover and reduced carbon footprint ~~are~~ is the only option left. Transition to clean and green energy sources, population planning, carbon pricing, energy-

efficient machinery and behavioral change need to be prioritized globally to reduce the emission of greenhouse gases. Many countries have been actively doing efforts for transition to green energy, and adopting clean and energy-efficient development policies.

The scientific evidences suggest that greenhouse gases have surpassed their threshold limits in atmosphere manifold's and therefore their sequestration is viable option to safeguard the Earth from their catastrophic impacts before the ^{end of} twentyfirst century. Increased green cover by afforestation and deforestation increase the natural carbon sinks and therefore, rapid plantation is one of the most eco-friendly solution for carbon sequestration naturally. However, more fast sequestration of carbon capture by carbon capturing and

includes employing carbon capture and storage technologies, which capture and store carbon dioxide in artificial sinks like rocks in the subsurface.

This modern artificial carbon sequestration is underway in many developed countries. Similarly, there is need of cooperation to promote this technology across the world to safeguard the Earth from the threatening consequences of global warming.

Pakistan, a developing country, contributes meagre amount of greenhouse gases, itself. But it stands as one of the worst victims of the catastrophic impacts of global warming. Rapid glacial melt and associated glacial lake outburst floods in its northern part, increasing drought, reducing agriculture yield in its centre while coastal degradation and increasing sea intrusion of the southern part of Pakistan are the clear evidences of hazards posed by global warming. Recent floods in July 2022 due to second monsoon precipitation further

affirms the catastrophic threats of global warming to Pakistan. To tackle with looming dangers of global warming, Pakistan has formulated various climate-friendly policy measures like Climate Change Policy 2012, National Water Policy 2018 and National Energy policy. However, similarly, at global level it has been advocating the case of developing world since long at various international fora. Its contributions in establishing world Climate Damage Fund at COP 28 were instrumental. However, it still needs to play significant role to decarbonize its economy and safeguard its dwellers from the aftermaths of global warming.

In conclusion, it can be inferred that global warming is single existential threat to life on Earth. Its accompanying threats have been multiplying in frequency and intensity and engender various environmental, socio-economic and political repercussions. Therefore, to avoid the wiping out of life from the surface

of Earth, counter-strategy is the only viable option. An effective and consensus-based global action plan needs to be operationalized with major focus on the developing world. While adaptive measures accompanied by mitigation measures are also the need of the hour to efficiently reduce its threatening impacts and decrease the intensity of global warming. If counter-measures are not taken in time, then not only developing nations like Pakistan and least developed like Marshall Islands will be wiped out from the planet's surface but also the developed world will face the destined fate of extinction.

Good

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