Climate Change and Responsibility of International Community

Climate change is one of the most pressing challenges of 21st century, transcending borders and threatening the very survival of humanity. The deteriorating environment has been evidenced by increased frequency of natural disasters, resource scarcity and biodiversity loss. From rising sea levels causing existential threat to island and coastal communities to increasing tensions between nations over resource scarcity, climate change has impacted many lives. Although the developed and industrialized nations are mainly responsible for climate change as they are the major emitters of greenhouse gases, the poor countries usually bear the brunt due to lack of resources. The international community holds unique responsibility in this regard – ensuring climate justice through equity, collaboration and accountability. The challenges posed by climate change, though unprecedented in scale, can be tackled through swift and collaborative measures.

The phenomenon of long-term variations in weather patterns are referred as climate change. It is caused due to unhealthy concentration of greenhouse gases such as carbon dioxide, sulphur dioxide and methane in the atmosphere. These gases trap the solar radiations coming from the Sun in the atmosphere, preventing them from escaping back into space. These radiations are then reflected back towards the surface of the Earth, ultimately increasing the global temperature. According to the Intergovernmental Panel on Climate Change (IPCC), the global temperature has risen by 1.1 degrees Celsius as compared to the pre-industrial era. Without adequate measures, this temperature is likely to rise beyond 1.5 to 2 degrees Celsius, causing catastrophic damage.

Climate change may result from natural phenomena but the scale and speed is so minute, that it may take decades or even centuries to become apparent. These phenomena may include solar radiations, volcanic eruptions or orbital changes. Increase in solar radiations warms up the Earth, giving rise to global temperature. Volcanic eruptions release massive amounts of carbon dioxide which trap the solar radiations, causing greenhouse effect. Similarly, orbital changes disrupt weather patterns resulting into unusually extreme temperatures in different areas.

The current accelerated increase in global temperatures and climate change is mainly attributed to human activities. Scientists have observed this unprecedented increase in temperature in the past few decades. Therefore, a direct link can be established between climate change and the era of industrialization. First of all, industries require huge portions of land, for which forests are cut down. Forests are known for absorbing carbon dioxide and regulating the global temperature. Therefore, with no trees, carbon dioxide is left into the air. Secondly, industries mainly rely on burning of fossil fuels as their source of energy, which releases massive amounts of carbon dioxide. This further increases the levels of carbon dioxide in the atmosphere, contributing to global warming. Moreover, industrial activities release harmful chemicals including sulphur dioxide and nitrogen oxides, leading to acid rain. Additionally, industrial waste consists of toxic pollutants, giving rise to air, water and land pollution. While industries are essential for human growth and development, sustainable practices should be adopted to make them environmental-friendly.

Rapid increase in urbanization is another major contributor towards global warming. Concrete roads and infrastructure prevent rain water to penetrate into soil, decreasing the water table. Fuel vehicles release smoke into the air, contributing to air pollution. Improper disposal of domestic waste leads to open

dumping, which releases harmful chemicals into the air and soil. All in all, urbanization creates a cascade of problems if sustainable practices are not adopted.

Another major reason leading to global warming is deforestation. Forests are said to be natural carbon sinks as they absorb large amounts of carbon dioxide. Forests are being cut down at an alarming rate for industrialization, urbanization and agricultural practices. This results in massive concentrations of carbon dioxide into the air leading to climate change. To address this, afforestation – cultivating barren land – and reforestation – plantation in areas where there once were trees – should be carried out at large scale under swift action.

Climate change has posed unprecedented threat to humanity as evidenced by increased frequency and intensity of natural disasters. Global warming refers to increased global temperatures which has resulted into intense heatwaves. Increased temperatures also cause rapid evaporation of water from soil and land, intensifying drought conditions. Moreover, high temperatures also warm up the sea which increase the energy of storms, making them more lethal. While climate change is mainly associated with global warming and increased temperatures, it also increases the intensity of cold waves resulting into hypothermia, frostbite and respiratory diseases. The IPCC and World Meteorological Organization (WMO) have observed a direct link between increasing number of disasters and climate change.

Loss of biodiversity is another major threat posed by climate change. It destroys the ecosystems – natural habitats of species – causing existential threat to animals. Moreover, ecosystems are natural carbon sinks. Additionally, they are a source of food, medicine and livelihood for many humans underscoring the need to protect those. According to United Nations Organization (UNO), around one million species are at risk of extinction due to climate change.

Extreme temperature conditions adversely affect the crop yield. According to some studies, for every 1 degree Celsius rise in temperature, the yield of some crops decreases by 10 percent. Moreover, natural disasters – intensified by global warming – result into massive destruction of crops. For example, the floods in 2022 in Pakistan affected 33 million people and destroyed huge portions of crops and livestock, resulting into major food shortage in the country.

Extreme temperatures destroy the infrastructure material, increasing the maintenance cost. Additionally, disasters such as hurricanes, floods, tsunamis, etc. destroy roads, buildings and power lines. According to World Bank (WB), floods in Pakistan in 2022 resulted into an economic loss of 30 billion dollars.

Anatol Liven in his book, “Pakistan: A Hard Country” described Pakistan as a resilient nation with no threat to its existence but one: climate change. He emphasized that it is a grave threat not just for Pakistan but whole of South Asia, having the capacity to cause catastrophic damage. Today, island and coastal countries are facing existential threat due to climate change. For example, Bangladesh with an average elevation of 1.5 meters above sea level, face multiple floods annually. According to IPCC, around 20 million people in Bangladesh will be displaced by 2050 due to floods. Maldives, an archipelago with its land barely above sea level, risk complete submergence by 2100. Similarly, the countries of Tuvalu, Kiribati and Marshal islands face similar existential threat.

Disasters – intensified by global warming – result into deportation of people. Displacement further causes a cascade of problems as people are forced to live in concentrated, unhygienic camps. The

unsanitary conditions give rise to diseases such as dengue, malaria and cholera. The people in such case often lose their livelihood, becoming unable to support themselves and their families. The tragic loss of life and upheaval cause psychological problems such as depression, anxiety, etc. among refugees. The International Organization for Migration (IOM) has observed direct relation between climate refugees and global warming.

“Prisoners of Geography” by Tim Marshal is a well acclaimed book published in 2015. In his book, he explained how environmental politics can lead to conflicts, especially in resource stricken areas. Climate change is often termed as “threat multiplier”. While it may not have the ability to cause war, it does have the potential to exacerbate existing tensions, especially in countries already facing political instability, resource scarcity and historical grievances. For example, Pakistan India water dispute has been a persistent issue ever since the inception of two countries.

The threats posed by climate change disproportionally affect the already vulnerable nations as they are unable to protect themselves against the disasters. The developed nations, which are the major emitters, are mainly responsible for climate change. In this scenario, it is the duty of developed nations to reduce their emissions and at the same time, help vulnerable communities who are facing the brunt of their activities.

It is a vital responsibility of international community to adopt sustainable practices to curb the adverse effects of climate change. Renewable energy – solar, wind, biothermal and hydropower – should be adopted to ensure clean environment. Moreover, techniques such as Direct Air Capture (DAC) and carbon mineralization should be adopted in industries to make them more environmentally friendly. The DAC separates carbon dioxide from the air which can then be stored underground or utilized in products. Carbon mineralization is a technique in which carbon dioxide is reacted with minerals to turn them into carbonates which can then be used in construction material. Similarly, sustainable practices such as vertical farming and precision farming using Artificial Intelligence (AI) should be adopted in agricultural practices which ensure optimal use of land and resources.

Paris agreement, signed in 2012 during conference of parties 27 (COP 27) adopted the mechanism of climate financing to assist developing nations in combating climate change. The developed nations should prioritize climate financing with proper responsibility. Moreover, they should ensure the transfer of technologies to nations who are unable to afford those. Advancements in the field of green technology must be shared with the world to ensure complete transition from fossil fuels. Additionally, the developing nations must also be equipped with adequate skill and machinery to ensure their capacity building.

The world has shared but differentiated responsibility in fighting climate change because the effects of global warming are disproportionately affecting the vulnerable nations with barely any carbon emissions. In this regard, the international community holds the responsibility of ensuring climate justice among all. The developed nations must be held accountable for global warming. Loss and damage fund, contributed by developed nations, must be ensured. The industrialized nations must reduce their emissions, while at the same time, it must be ensured that the emerging economies and developing nations adopt sustainable practices.

Technological research and innovation in green technology should be promoted. The world should work together to make renewable energies more efficient and affordable for all. Moreover, investments in sustainable practices should be ensured for a clean and healthy environment.

Education plays a vital role in fighting any evil. Therefore, to fight climate change, global campaigns should be organized so that people understand the risks involved and work towards their mitigation. Climate education should be promoted in schools and universities. Moreover, government should help the NGOs working towards this cause. Only through an informed youth and citizens, a country can take adequate steps to mitigate climate change.

Taking adaptive measures is another crucial element in combating climate change. Proper warning system should be established to inform the public before any disaster so they may evacuate the area beforehand. The citizens should be trained to tackle the disasters. Moreover, disaster resistant infrastructure should be promoted. For example, green infrastructure helps in rainwater harvesting and it also acts as carbon sink.

Climate change poses not only environmental threat, but it also results in social and economic loss, threatening the very survival of humanity. It is a global problem, disproportionally affecting the developing nations; although the developed economies are mainly responsible for global warming as they are the major carbon emitters. Therefore, the international community must ensure equitable responsibility among all states. Sustainable practices must be adopted through collaborative measures to create a clean and healthy world that not only survives but thrives. Together, a sustainable world is within reach.