

The Environment Has Gone Beyond The Tipping Point

1- Introduction

Rising sea levels, delayed seasonal changes, potential heat waves and air pollution are significant threat to environment caused by humanity. They demand resilience, mitigation, collaborations and awareness.

2- Unveiling the term "Tipping point" and current status of environment

3- Facts that environment has gone before tipping points :

- i- Rising sea levels and threats to small island states
- ii- Continuous climate disasters
- iii- Excessive air pollution
- iv- Potential heat waves in summer
- v- Loss of biodiversity
- vi- Looming threat of food security

4- Reasons behind environment's surpassing tipping points :

- i- Heavy reliance on hydrocarbons
- ii- Population explosion
- iii- Increasing deforestation
- iv- Excessive use of cooling agents in 21st century

5- Recommendations to save environment

- i. International collaborations for environmental justice
- ii. Increasing public awareness through education
- iii. Enhancing political will for inculcating environment in political agenda
- iv. Developing resilience against climate change

6- Conclusion

UN Secretary General Antonio Guterres has said that era of global warming has ended and era of global boiling has arrived. This statement relies to the present situation of environment that consequences of global warming have intensified in the present scenario. Now, environment is not in the threat to degrade rather it has degraded to a maximum limit. There are different fact which can support this argument, for instance, rising sea level which is considered a serious threat for Island states. Similarly, the air pollution has reached a maximum limit in most of third world countries which are already vulnerable to the effects of global warming. Moreover, the climatic disasters in the past few years is a clear sign that environment has surpassed a tipping point of degradation. Similarly, delayed seasonal changes will affect food production which is result of environmental degradation. Deforestation has resulted into significant air pollution which is a threat to human life. In the past few years, every summer breaks record of being hottest in the history, which is directly threat to aquatic life. These points show the irreversible loss which humanity has caused to the environment. There are multiple reasons which lie behind environmental degradation: excessive

Burning of fossil fuel is one of the most significant cause. Additionally, population explosion adds fuel to the fire. Moreover, the ongoing geopolitical conflicts in the world are worth mentioning. Similarly, deforestation has resulted into increase emissions of greenhouse gases in the atmosphere. As, this damage is irreversible but through building resilience and collaborations these threats could be dealt. Similarly, international collaborations can play a vital role in environmental justice. Hence, rising sea levels, delayed seasonal changes, potential heat waves are significant environmental threats to life caused by humanity. They demand mitigation and resilience through collaborations, agreements and education.

Tipping point in respect to environment can be defined as the maximum threshold limit which has already surpassed. It refers to current situation of environment which has been degraded since industrialization era but has now reached to a point where its impacts are irreversible. It has degraded in every aspect in terms of water, air, land, soil, forest etc. Rachel Carson in her book "Silent Spring" identified environmental loss for the very first time. Then, series of gatherings like Stockholm Conference 1972, Rio Summit 1992 to COP-28, 2023 in UAE took place. Unfortunately, these development had not been successful to

save environment completely.

There are different facts that show, environment has gone behind tipping points and one of them is rising sea levels and threats to small Islands. Due to disturbance in environmental factors, glaciers have started melting at a very fast rate. Most of the small island developing states (SIDS) like Maldives, Indonesia, Singapore are at risk of disappearance from the map of the world. Most of the scientists have already predicted that Maldives will disappear from the world's map by the end of this century. Such predictions show that humanity has seriously cause threats to environment and to themselves. Disappearance of small island state as predicted is a fact that environment has gone behind a threshold limit of degradation.

Secondly, the continuous climatic disasters are itself the significant proof of environmental degradation. In the past few years, world has witnessed floods, droughts as well as cyclones. These disasters are paced by environmental changes due to human activities. Resultantly, these incidents have caused loss of life as well as loss of economy. For instance, floods in Pakistan have affected 33 million people as per data of UNICEF in 2022. Also, it has caused

economic loss of around 32 billion dollars. Moreover, drought in China has caused 7 billion dollars in 2022. These disasters are itself a fact that environmental degradation has become more than double and irreversible in the current scenario.

Thirdly, excessive air pollution as a result of anthropogenic activities is a direct threat to life. Air pollution is a slow poison that slowly kills the living organism as well impacts the natural habitat. Cutting of trees for human use increase the emissions of green house gases in the atmosphere which intensifies air pollution. For instance, Air Quality Index has ranked Chad - a developing country - the most polluted country in the world. Air pollution also reduces average life expectancy of humans. For Example, in the year 2023, Lahore was the most polluted city in the world as ranked by Air quality Index. WHO warns that average life expectancy in Lahore can decrease by 10 years. Hence, air pollution supports the argument that environment has surpassed tipping points.

Fourthly, potential heat waves in summer is also result of environmental changes. In the past few decades, the temperature increased by 0.5°C however, different human activities

have increased the accumulation of green house gases like carbon dioxide (CO_2) and oxides of nitrogen in the atmosphere. These gases increase the temperature of atmosphere and earth and as a result, world witness increase in temperature during summers. According to World Meteorological Organisation (WMO), July 2023 was the hottest month in the history of mankind and intense heat waves were observed in different parts of the world. Hence, heat waves are intensified as a result of environmental changes caused by human activities.

Additionally, loss of biodiversity is another looming threat which has exacerbated due to climatic changes. Due to cutting of forest and unsustainable urbanisation practices, natural habitat of biodiversity has become eroded. Most of the important animal and plant species are at risk of extinction. As per data of IUCN (International Union for Conservation of Nature), about a million species are at risk of extinction. Among other causes, one of significant cause of biodiversity loss is unsustainable urbanisation. Hence, looming threat of biodiversity will be an irreversible environmental loss as a result of different inhumane practices.

Moreover, world has facing food security issues as a result of environment degradation caused by climatic changes. Delayed seasonal changes and variations in precipitation have impact on the food production in agricultural countries. Even most of developed states are facing food shortages like European Union. However, developing states are more vulnerable to food security. As per IPCC (Inter-governmental Panel on Climate Change) report published in March 2023, if environmental conditions persist, Africa will lose 30% of its maize cultivation and 50% of beans cultivation. These facts are highlighting the damage caused by environmental changes on food production.

These environmental changes have intensified due to a number of reasons: first and foremost is excessive use of hydrocarbons. The use of hydrocarbons was intensified during industrialized era and now most of the economies are dependent on hydrocarbons for example Gulf States. Similarly, developing countries are fulfilling their needs through using hydrocarbons. Among the large consumers, United States, China and India are the top three consumers of hydrocarbons and are contributing more to global emissions. These emissions have resulted into significant climatic changes and

irreversible loss which mostly impacts developing states.

Additionally, population explosion over the period of time has intensified environmental degradation. High population demanded excessive exploitation of natural resources which has resulted into deforestation, loss of habitat and increased global emissions. According to data of World Bank, the population of World in 1990s was 5 billion however, in 2023 it reached to 8 billion people. UN had warned that this population will reach 9.8 billion in 2050 and around 11 billion in 2100. As a result of population explosion, environment damage has increased over the period of time. High population led to increased demand and increased exploitation of resources. All these activities had intensified environmental loss due to increase in competition among high number of individuals.

Along with population explosion, deforestation had played a significant role in degrading environment. Forests are known as carbon sinks as they convert carbon dioxide from atmosphere into food thereby reduce emissions. With the passage of time, increased demand for resources and urbanization had led to cutting of forest. There were around 43% forest area in 1990s however it was reduced to

31% in 2023 as per data records of FAO (Food and Agriculture Organization). Scientists have estimated that a mature tree can store 28 kg of CO_2 annually and its removal can lead to release of this amount in the atmosphere. Hence, loss of forest cover had also contributed into deterioration of environment.

Apart from deforestation, excessive use of cooling agents in 21st century has negatively impact the environment. Current century is era of advancements, discoveries and technology. Development of appliances like "Air conditioners" and "Refrigerators" are leading cause of harmful emissions in the environment which intensify climate change. In the UN's report titled "Sustainable Urban Cooling Handbook", it is mentioned that in the upcoming years average temperature will to such a limit that will cause extinction of living organism. It further added that reason of high temperature is excessive use of refrigerators and air conditioners. These appliance will further intensify the heat waves in the future. Hence, environment has been degraded negatively as result of excessive use of refrigerators and air conditioners.

It is also important to acknowledge what should world can do to fight against these changes and one important step is international collaborations. In the

past, events like Montreal Protocol and Kyoto Protocol had remained successful in achieving the targets to protect environment. Therefore, international willingness for collaborations on environmental justice will be highly significant. For instance, in announcement of IMEC Corridor (India-Middle East-Europe), there will be investment of around 600 billion dollars in developing countries for sustainable developments. Such collaborations will increase the capacity building of developing states to fight for environmental cause.

Secondly, environmental awareness can be increased through education. In many states, environment is taught as a subject at school level to create awareness on its protection. This ratio can be increased in third world countries through education which are more vulnerable to climate change that is Africa and Asia. As, UN has already warned that Africa and Asia will be most vulnerable states to climate change in the future. Through education, awareness related to afforestation, renewable energy and use of sustainable transport could be increased. Awareness among young generation on environmental cause will increase its protection in present as well as in the future. Hence, public awareness through education will be helpful in building resilience.

Thirdly, strong political will is very important in highlighting environmental injustice at national level. It is general saying ^{that} if there is will, there is a way and that sounds true in case of political leaders. If political leaders are willing to inculcate environmental factor in their policies and agendas, public will follow their footsteps. Unfortunately, the populist leaders in the world are not interested in dealing environmental issues. For instance, Donald Trump withdraw from Paris Agreement after coming to the power. Similarly, in COP 28, US contributed only 17 billion dollars in Climate Fund despite being a largest contributor of emissions. Hence, strong political will is a pre-requisite for dealing environmental issues at national level.

Additionally, instead of focusing on mitigation, world should focus on building resilience. As, change is an inevitable phenomena and what's already done cannot be reversed but can be dealt in other ways. One such resilience is use of drought tolerant crops to fight against food insecurity. Similarly, shift to renewable energy resources and sustainable transport system will reduce dependency on hydrocarbons. For example, projects like Metro Bus Transit and Orange Line Transit Services in Pakistan could help in reducing global emissions.

Moreover, afforestation projects like Billion Tree Tsunami Project (2021-2023) in Pakistan will help to fight against climatic disasters.

Resilience towards environmental degradation will paved a better way to environment protection rather than relying on mitigation.

In a nutshell, the environmental impacts have intensified in current scenario. This can be proved in delving into recent events that are happening in the world, for instance, rise of sea level.

Similarly, threats to biodiversity and human life due to strong heat waves and air pollution are results of human activities.

Human's over reliance on fossil fuels have exacerbated the process of environmental degradation. Moreover, invention of modern appliances like refrigerators have increased emissions in the atmosphere which have altered normal environmental processes. Despite the threats, world can still save the earth ~~as~~ by advocating together for international climatic justice. Similarly, political will and awareness is also important in the process. However, the best way to deal with this issue is building resilience.

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