

Are we heading towards “CLIMATE TERRORISM?”

Pipas Kumar*

Research Scholar, University School of Environment Management, Guru Gobind Singh Indraprastha University, New Delhi, India

***Corresponding Author:** Pipas Kumar, Research Scholar, University School of Environment Management, Guru Gobind Singh Indraprastha University, New Delhi, India.

Received: September 01, 2023; **Published:** September 30, 2023

Over the last century, the earth temperature has been increasing at an unprecedented rate. The first decade of this 21st century in fact was the hottest in the recorded history. Since 1880, the world has witnessed a 1.4°C rise in temperature with 2/3rd of that is coming since 1975. Reports suggested that the average global surface temperature has risen by 0.45°C-0.6°C (0.8°F-1.0°F) and the average sea level has risen approximately 15-20 cm (6-8 inches) during the last century (IPCC, 2001). Global Climate Models' (GCMs) projections for the future climate indicate that the mean annual global surface temperature has increased, since the late 19th century and it is anticipated to further increase by 1°C-3.5°C over the next 100 years (IPCC, 2007). The IPCC's fifth assessment report recently documented that anthropogenic climate change, in addition to causing gradual shifts, is increasing the intensity, duration, and frequency of extreme temperatures and rainfall.

Considering India, its large population, agrarian economy and long coastline, make it 'considerably vulnerable' to the impacts of climate change. India also has witnessed the increasing temperature trends of 0.60°C during the last 112 years (IMD, 2012). In eastern India, the upper watershed of River Subarnarekha (UWRS) in the state of Jharkhand is well known for its pleasant climate during the past years, but researchers have reported anomalies in the rainfall distribution and temperature. The annual average rainfall of UWRS is 1397.9 mm (1980-2017) whereas the monthly averages of maximum temperature ranged from 23.1°C (December) to 36.8°C (May). The monthly averages of minimum temperature ranged from 9.2°C (January) to 25.1°C (June) (1980-2017). Research reports indicate that there is a decreasing trend in annual rainfall by 15 mm/year while there is an increasing trend in maximum temperature by 0.14°C/decade.

The impact of climate change and global warming is visible in regional level also. To study the impact of climate change a widely accepted hydrological model, Soil and Water Tool Assessment (SWAT) has been applied on the UWRS. In this study, IPCC SRES A1B Scenario, PRECIS RCM for time slices, near-century (2011-2040, or 2020s), mid-century (2041-2070, or 2050s) and end century (2071-2098, or 2080s) have been used. The analysis shows that the maximum mean annual temperature will increase by 0.6°C for the 2020s, by 1.6°C for the 2050s and by 2.2°C for the 2080s. Whereas the mean annual rainfall will slightly decrease by 19.4 mm (1.4%) in the 2020s, increase by 86.2 mm (6.2%) in the 2050s, and further increase by 126 mm (9.1%) in the 2080s. The model projection trend of precipitation and temperature will have a profound effect on water balance components of the watershed. Like, for discharge, the 2020s projection indicates a decrease of 8%. For the discharge of the 2050s, and 2080s simulation results show an average annual increase by 7.2%, and 22.5% respectively. For the 2020s, surface runoff shows an average annual decrease of 18.4%. For the 2050s and 2080s, there is an average annual increase of 11.8% and 38.2% respectively.

It may be concluded that the precipitation pattern of the climate projections has a significant impact on water balance components. As the simulation results lead to an increasing runoff with increasing rainfall in mid-century and end century, a rather high increase in discharge can be expected which will enhance the risk of floods in low-lying areas. The flood may result in loss of habitat, displacement of people, damage to life and *destruction* of property. The predictions for future climate change are associated with the changes in the amount and intensity of extremes events. In cyclone-prone areas, like the Bay of Bengal, the sea level rises together with more intense cyclone will pose a serious risk to life, livelihoods, and destruction of property. Under changing climate scenario, it is more

likely to have extreme heat events thereby accelerating evaporation, causing drought to become more intense and widespread. This could enhance the risk of wildfires and destruction of the forest ecosystem that is responsible for storing 45% of the carbon. Not only drought and heat waves have become widespread but also rainstorm. This is due to that fact that warmer air actually holds more water vapor increasing the likelihood of torrential downfall and subsequently floods, thus triggering life and habitat *destruction*.

The expected consequences that are already proving detrimental to the ecosystem all over the world, but what we are not realizing is the TRUE and the UNEXPECTED consequences of climate change. It could be diseases, not the flooding that kills all of us. Warming temperature could increase the chances of vector born diseases to spread to new areas. It is utmost important that climate change must be recognized and treated as a prominent, severe and global threat. In a nutshell, mere plantation of saplings will not reduce the concern of climate change, rather the creation of FOREST ECOSYSTEM is necessary. Stringent measures and construction mechanism must be adopted to reduce the impact of climate change before the *destruction* becomes irreparable and irreversible.

Thus, the word *destruction* is repeating itself as consequences of climate change. Can we consider “Mr. CLIMATE” as an “ECO-TERRORIST?” Are we heading towards “Climate Terrorism?”

Volume 5 Issue 3 October 2023

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