Journal of Namibian Studies, 33 S3(2023): 3818-3822 ISSN: 2197-5523 (online)

Climate Change In India

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Abstract

Climate change is now affecting every country. It has been an issue of concern for the entire world. It is affecting lives of not only human beings but also affecting the animals. People are experiencing the significant impacts of climate change , which include changing weather patterns, rising of high sea level, extreme weather conditions i.e., too hot or too cold etc.

In this paper we have looked into what is climate change, how is climate change impacting India in 21st century, govt. policies on combating climate change, and how to tackle climate change.

Keywords: Climate change, India, Government policies.

INTRODUCTION :

From the recent decades a tremendous change has been seen in climate all over the world. It has been adversely affecting every couture of the world. Climate change refers to a change in climate condition over a place over a long period of time. It affects the amount of rainfall, increase of temperature and humidity.

The change in climate triggers to many social, economical, educational and health issues. The global community has been aware about the diplomatic climate condition over the world. Is this problem is not solved soon, it will not only affect the present generation but also the future generation, hence affecting sustainable development.

An Overview:

The United Nation Framework Convention on climate change provides an outline to the parties to address the causes of climate change, defines climate change as

"a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to national climate variability observed over comparable time periods. Climate change is an increase in global average temperatures that will have a largely negative effect on ecosystem across the world.

A rise in global average temperatures is likely to worsen human quality. It is also estimated that in future people have to face shortages of water and food. Climate change will have its effect on the physical and biological systems of aquatic, terrestrial and marine environments. The ????¿ of climate change also includes diseased crop yields, melting of glaciers and rising of sea level, extreme weather conditions like flood, droughts and storms, species extinctions etc.

CLIM India is located in the Southeast Asia. India is a large and the most populous country in the world. Most of its population resides in rural area which depends on natural resources such as water, biodiversity, grasslands for their subsistence and livelihood.

India should be concerned about the climate change because it might have adverse impact on the country. Not all possible consequences of climate change are fully understood, but the main categories of impacts are those on agriculture, rise in sea level leading to submersion of coastal areas and increased frequency of extreme events which pose serious threats to India

CAUSES OF CLIMATE CHANGE IN INDIA:

There are several causes which leads to climate change in India. Due to these causes different kinds of problems are arises which affects the life of not only the human being but the life of all living beings . The main causes that leads to climate change in India are discussed below-

1. **Greenhouse Gas Emission from India** :- In India , 68.7% of greenhouse gas emissions comes from the energy sector , followed by agriculture, industrial processes, land use charge and forestry and waste which contribute 19.6% , 6.0%, 3.8% and 1.9% respectively to Greenhouse Gas Emissions.

2. **Deforestation to develop human settlement:-** Most of the forests and lank covers are replaced by agricultural cropping, land grazing , or for industrial or commercial usage. The clearing of forest cover

increases solar energy absorption and the amount of moisture evaporated into the atmosphere.

3. **Generating power:-** Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions. Most electricity is still generated by burning coal, oil, or gas, which produces carbon dioxide and nitrous oxide – powerful greenhouse gases that blanket the Earth and trap the sun's heat.
4. **Using transportation:-** Most cars, trucks, ships, planes run on fossil fuels, that makes transportation a major contributor of greenhouse gases, especially carbon dioxide emissions. Road vehicles account for the largest part due to the combustion of petroleum based products like gasoline, in internet combustion engines.

IMPACTS OF CLIMATE CHANGE IN INDIA :

The impacts of climate change in India are discussed below-

1.Droughts: Arid regions in South Asia, including dry regions of Rajasthan in India and some regions of Pakistan, are facing severe drought. However, due to frequently occurring different kinds of droughts (late onset, midrd season and terminal), 2/3 of India's agriculture areas are under rain-fed condition. Western Rajasthan, parts of Haryana, Uttar Pradesh, Maharashtra, Southern Bihar, Madhya Pradesh, Southern Gujarat, Northern parts of Andhra Pradesh, and Karnataka are regularly facing dryness, and these regions are highly vulnerable to drought .The arid and semi-arid zones are vulnerable to the losses of economic activities and livelihoods due to the changes in rate of precipitation.

2. Extreme Events (Cyclones and storms): Another troublesome indicator of global climate change such as storms, cyclones, landslides, etc., extremely affect South Asian countries. Around nine million people in the world were severely affected due to the destructive cyclones (UN assessment). The super cyclone in 1999 hit Orissa took toll of over a million lives besides properties loss in the coastal areas. Similar is the case with the coastal state of Andhra Pradesh during Hud-Hud cyclone in 2014.

3. Heatwaves: Frequency and intensity of heatwaves are raising in India adversely affecting all allied sectors of agriculture including dairy, poultry, fishery, etc. Low water availability coupled with heatwaves have severe consequences on food security of the country. Drinking water crisis for humans and livestock besides drying of long-standing horticulture orchards was seen. India and its neighbouring countries experienced a

severe and longest heatwave from mid-May to mid-June in 2019. Chiru in Rajasthan state, India documented a record of high temperature up to 50.8° C (123.4° F), which is almost missed by fraction of degree i.e., 51.0° C (123.8° F) highest set in 2016. As of 12 June 2019, the second largest heatwave period (32 days) ever was documented.

4.Melting of glaciers: Future situations of South Asia may become adverse due to melting of glaciers and snow in the Himalayan regions. The Himalayan glaciers are rapidly melting down because of high temperature and if it continues in future, the fresh water stock for survival will be at great risk. Satellite data project that the rate of retreat of 30 km long Gangotri Glacier in the last 30 years has been more than 3 folds the rate of the past 200 years or so.

5. Horticulture: Vegetable crops when exposed to extreme high temperatures are subject to very high transpiration losses, and it also limits fruit setting in citrus fruits. High temperature causes burning or scorching effect of blossoms, predominantly on young trees. Fruit setting stage of navel oranges is recorded to be severely affected by high temperatures during flowering (Davies, 1986). High temperature induces moisture stress condition leading to sunburn and cracking symptoms in fruit trees like apricot, cherries and apples. The temperature enhancement at ripening stage causes fruit burning.

Having a brief look into the impact of climate change, now we will look into some of the recent weather events that were mostly a direct result of climate change in India : Uttarakhand Tragedy: On 16th June 2013, the state of Uttarakhand witnessed one of the worst disasters in recent times that caused extensive damage and destruction to both life and property. The state was hitted by very heavy rainfall and flash flood. The impact of the disaster was most evident in the Mandakini valley of the Rudrapryag district.Torrential rain led to flooding at the Kedarnath Shrine and the adjacent areas.. Several others pilgrimage in the state including Gangotri, Yamunotri and Badrinath were affected. According to a report published by the American Meterological Society, the 2013, Uttarakhand flood was the consequence of human induced climate change.

Chennai Floods 2015: The city of Chennai recorded multiple torrential rainfall events during November-December 2015 that inundated the coastal districts of Chennai, Kancheepuram and Tiruvallur, and affected more than 4 million people with economic damages.As per the Deputy Director General of the Delhi based Centre for Science and Environment,

the Chennai floods were the direct outcome of the increasing global temperature breaking a 100 year old record with one day's rainfall covering a month's average.

Drought of 2016: India experienced one of its driest two-year periods in 2016 that affected almost the entire country. Temperatures went past 51 degrees centigrade during the month of May in the state of Rajasthan.Going by the national drought assessment, the country experienced a moisture deficit of at least 50% when compared to previous years. In addition, as per the Central Water Commission, water level in India's 91 reservoirs were at their lowest in almost a decade and during the month of May, stood at only 17% of their total storage capacity. The worst affected region in the country due to severe drought was Marathwada, Maharashtra. For the last five years this region witnessed a continuous depletion of water, indebtedness and an increase in farmer suicides. Erratic climatic patterns have affected the region's agriculture, which is primarily rain-fed. No or minimal availability of water in dams, no fodder for cattle, no capital to start allied businesses and unemployment are some of the other problems faced by the people in this region. Over the period of last few years, agriculture in Maharashtra has been hit by extreme weather events like, hailstorms, heat wave, frost and erratic rains.Moreover, the heat wave in India during 2013 caused the reduction of almost four million tons of wheat production. An increase of one degree in temperature during the flowering stage in that same year also led to a huge loss to the farmers. Marathwada.33 The Most

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