

AGRICULTURE AND CLIMATE CHANGE IN MAHARASHTRA

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Abstract-

Many aspects of climate change have been identified throughout the Earth's geographical history. Recently, after the Industrial Revolution, human activities that have been contributing to global warming have been increasingly affected by the weather. It has affected the agricultural sector. Considering India, the climate in different states of India is different. Maharashtra is no exception. During the period of industrialization, increasing levels of toxic gases in the air and increasing use of chemical fertilizers have decimated agriculture in Maharashtra. The crisis of the Corona epidemic in the state over the last two years and the changing nature of the climate have made the entire country need to take care of both health and climate. In fact, it is necessary to think about it, to do research.

Keywords –

Climate Change, Agriculture

Introduction-

When climate change occurs, changes in the Earth's climate system result in new climatic patterns. It keeps growing over time. This period can range from a few decades to billions of years. Scientists have identified many aspects of climate change during the Earth's geographical history. Recently, after the Industrial Revolution, human activities that have been contributing to global warming have been increasingly affected by the weather. The temperature of the atmosphere around the Earth has been 0.5 degrees Celsius since 1955. Increased IPCC The scientist of this international organization, Shri. Algor and Shri. Parchari showed. He described the year 1998 as the hottest year of the 2nd century. He also proved that global temperatures have been rising rapidly since 1998. The research paper analyses the effects of climate change on the environment, human health as well as agriculture.

Objectives of the research

- ❖ To study the meaning of climate change
- ❖ To study the effects of climate change on agriculture
- ❖ Suggestions for measures to protect agriculture from climate change

Research methods

The research methodology used for this dissertation is mainly secondary. The facts are collected for the

dissertation presented on the basis of various types of texts, websites, and newspaper material.

The meaning of climate change

"Climate change" is also known as global warming. Human action causes climate change in the human race, as a result of the earth's natural processes as opposed to climate change. In this sense, the term climate change has become an alternative to global warming, especially in the context of environmental policy. In scientific journals, global warming refers to an increase in surface temperature, while climate change involves global warming and affects rising levels of greenhouse gases. Climate change refers to significant changes in global temperature, precipitation and wind volume, and climate change over decades. Climate change is a natural phenomenon and it has been happening since the Earth came into existence. Climate change is the average climate change of a given area or region.

The discovery of steam engines in the late 18th century, followed by the massive use of coal during the industrialization period, increased the amount of harmful and toxic greenhouse gases such as carbon dioxide and methane in the atmosphere. This is called greenhouse effect. This has led to significant and long-term changes in temperature and rainfall and wind patterns.

The effects of climate change on agriculture

Climate change is unsafe for crop growth. Rising temperatures, climate change, rising carbon dioxide and changing rainfall patterns have led to a significant decline in crop yields. There has also been an increase in weather events over the past decade, such as droughts, heat waves, and torrential rains. High temperatures and rainfall can reduce crop yields. Extreme events, especially floods and droughts, can damage crops and reduce yields. E.g. High corn nights in 2010 and 2012 affected corn crops in the United States.

Rising summer temperatures cause the soil to dry out. Insects and fungi grow in hot temperatures, humid climates, and carbon dioxide levels.

Sea levels rise as rainfall decreases and temperatures rise. Droughts and frequent cyclone floods also threaten agricultural biodiversity, affecting the quality of fruits, vegetables, tea, coffee, spices and medicinal plants. Demand for irrigation water increases as pests and temperature

and evaporation rate increase. This may reduce groundwater table in some places. Increasing crop production to meet the demands of a growing population against the backdrop of the threat of climate change has become a daunting task.

Agriculture and Climate Change in Maharashtra

The year 2021 was not limited to the Corona epidemic for Maharashtra, but this year, climate change also affected the economy of Maharashtra. For the first time, a dust storm hit Maharashtra. Gulf - Pakistan, Rajasthan, West Uttar Pradesh, West Madhya Pradesh, Gujarat, North Maharashtra, Jalgaon, Chopda, West Maharashtra, Pune, Nashik, Nagar, Satara, Mumbai, Parli Vajinath, Parbhani, Pathri, Solapur. Part of the district in this entire area. Dust storms that started on March 20 were spotted. The air in the sky was gray, double-edged (called "hedge" in English), and it contained very fine particles of vapor and five to six times more dust particles than usual. The amount of dust particles in the air is about 200 ppm (in English Aerosol ') as it increased to 1200 ppm, the further part of 1000 m distance was not visible in Jalgaon and Chopda areas; Also in Mumbai city it was more intense on 21st March. The next part of the 100-meter distance was not clearly visible there. The air around the earth has a certain pressure. It is measured in millibars or heptapascals. As the sun's rays reach the atmosphere, the earth's temperature begins to rise. The layers of air near the earth are heated and the layers above it are cold, so there is high air pressure. Naturally the air flows down from above; However, since there is cold air at some height in that layer, the air flows further downwards. This is called "air inversion", from which large particles of dust are suspended in the air layer above the surface of the earth. In Rajasthan, Gujarat and North Maharashtra, the air pressure was reduced, so the dust particles flowing from the Gulf region floated in the air.

The air pressure around Mumbai was 1010 heptapascals; In Madhya Pradesh, Rajasthan and Uttar Pradesh it was 1012 heptapascals. So the air kept flowing from high pressure to low pressure. A large amount of dust particles accumulated in this area. In Rajasthan, such dust storms occur continuously in the month of March. Till today, its effect was not felt till Mumbai and Maharashtra. The "hedge" atmosphere was felt as the air vapor hung along with the dust. It lasted all day. The sun is at the equator on March 21. It then travels in the direction of the Northern Hemisphere, the Tropic of Cancer. The lowest temperature recorded in that month was March. Dust can affect crop health and

increase the incidence of pests and diseases, as well as increase the incidence of respiratory diseases, swine flu, lung diseases and asthmatic disorders in humans. This should be the first instance of such polluted weather in March.

Major causes of greenhouse gas growth due to agriculture-

Methane is released into the air from rice cultivation. Methane release from fermentation in animals. Exhaustion of nitrous oxide from fertilizer application. Collectively, these agricultural processes account for 54% of climate change. Approximately 80 percent of methane emissions, nitrous oxide emissions, and virtually all carbon dioxide emissions are tied to land use.

The next effects of climate change are on agriculture.

1. Crop productivity is declining and agriculture has become unsustainable.
2. There is a problem of tea for animals. As a result, the dairy business is in trouble.
3. Problems with drinking water. Inadequate water supply is being made available to agriculture. As a result, productivity is declining.
4. Hail and unseasonal rains are causing damage to aquaculture.
5. It is time for double sowing in Kharif and due to uncertainty in seasonal rains and lack of sufficient moisture, the area under Rabbi is also decreasing.

Future effects of climate change

The biggest impact of climate change is on agriculture, which is showing signs of steady growth. These results will create serious problems in the future. As a result, the agricultural sector will be in trouble and the economic condition of the farmers will deteriorate. These effects will be even more severe, especially in arid areas. This would jeopardize the security of the country and force food grains to be imported from other countries. Then it may be time for a country that is self-sufficient in food to depend on another country. For this, it is necessary to take measures for sustainable income from agriculture in the context of climate change.

Measures to sustain agricultural production

1. Changes in cropping pattern:

The area under cotton should be reduced and tur, soybean, maize, ghewda, chilli should be included in the cropping pattern. The area under cotton in Maharashtra is steadily increasing. The reason is the same. B.T. The area is increasing as farmers are informed that production will increase by producing cotton seeds. In fact, since the duration

of the cotton crop is 7 to 7.5 months and the monsoon is 4 months, the increase in the area under cotton is also creating serious problems due to mismatch between the rainy season and the cotton season. 94% of cotton area is dry land. The average productivity of cotton in Maharashtra is only 2.93 quintals per hectare due to insufficient water supply during the growing season. As a result, the cost of production is high and productivity is very low. Therefore, out of 40 lakh hectare area under cotton, 20 to 3 lakh hectare area should be reduced and there is a need to cultivate tur, soybean, maize, ghewda, chilli and achieve sustainable agricultural production. It is advisable to cultivate cotton in areas with heavy black lands and in irrigated areas. For this, the farmers need to be trained continuously. It is also necessary to provide improved varieties of tur, ghewda, maize, chilli, soybean.

2. Using wide-ramp and sprinkler method

There is a need to increase the use of Rund-Varamba and Sari method as a water conservation measure in Mulistan and farmers need to be trained to sow both Soyabean and Ghewda on wide-Varamba. This can increase productivity per hectare.

3. Confined steam for Rabbi sorghum:

Large size steamers should be prepared to store rain water. The size of the waffle should be according to the slope of the land. When the steam is prepared, the whole machine is used and the plough is placed at the right distance and the cane can be made at low cost and the rain water seeps into the steam. If sown on proper soil, the recurring rain water evaporates and is useful for sorghum growth. This increases the yield by 30% per hectare. This method of water conservation in the basin must be used for Rabbi Sorghum.

4. Change the cropping pattern by reducing the area under wheat crop in the irrigated area and sowing sorghum in the irrigated area.

Due to climate change, January and February are the two coldest months. If wheat is sown in the month of November and does not get cold in the month of November, December, wheat crop, its

stage early wheat productivity decreases. In addition, wheat crop is found in hailstones. Instead, if Rabbi sorghum is sown in the orchards in October, Rabbi sorghum will be harvested by the end of February. Not found in hail. In addition, Kadaba is useful for animals. The problem of animal tea disappears. It is a good grain product for the household. Apart from that, the economic benefits are higher as the price of Rabbi Sorghum has gone up.

5. Increase in area under gram crop during Rabbi season:

Gram is a low rainfall and low water crop. Where 2 waters are available, cultivate orchards. Dryland gram should be sown in October. In those days, rain water will die and the productivity of Harbhanya will increase.

In addition to the above measures, the following measures are also required.

6. Adoption of Micro Irrigation System
7. Adoption of protected agriculture
8. Adoption of intercropping method
9. Using overlays
10. Using light converters
11. Jalayukta Shivar Abhiyan will be a boon to Maharashtra
12. Prevent evaporation of water from ponds in arid areas
13. Storage of rain water from Ghats in Western Maharashtra and discharge in river basin as required

The above measures will help in solving the problem of climate change related to agricultural development. This requires time for farmers to make necessary changes in their crop composition, study climate change, and provide related training.

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