



CLIMATE CHANGE, WATER SCARCITY AND ITS IMPACT ON AGRICULTURE IN BEED DISTRICT, MAHARASHTRA

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Abstract:

"Climate change" means a change in climate that persists over a sustained period of time. The World Meteorological Organization defines this time period as 30 years. Examples of climate change include increases in global surface temperature (global warming), changes in rainfall patterns, and changes in the frequency of extreme weather events. Changes in climate may be due to natural and manmade causes. Increase in extreme weather events such as floods, droughts, cyclones and heat waves will adversely affect agricultural productivity. Reduction in yields in the rain fed areas due to changes in rainfall pattern during monsoon season and increased crop water demand. There may be a change in rainfall volume and frequency, and wind may alter the severity, frequency and extent of soil erosion. Climate change will affect fodder production and nutritional security of livestock. Increased temperature would enhance lignifications of plant tissues, reducing the digestibility. Increased water scarcity would also decrease production of feed and fodder

Keywords: climate change, Irrigation, water, crop, rainfall, agriculture, water, Scarcity.

Introduction:

Global climatic changes can affect agriculture through their direct and indirect Effects on the crops. Average temperature in the next decades will make India's summer monsoon highly unpredictable. Shifting rain pattern will leave some areas under water and others without water for power generation, irrigation and in some cases even for drinking. Last 5 year Report warns that by the Beed will see a significant reduction in crop yields because of extreme heat. Reduced water

availability due to changes in precipitation levels and falling groundwater tables are likely to aggravate the situation in district where groundwater resources are already at a critical level and groundwater tables are over exploited.

Over the last 5 years, newspapers have been full of reports related to relief being provided in the form of water tankers supplying water daily to drought-affected Beed districts and water shortages have affected. Domestic needs, agriculture, livestock, and livelihoods of hundreds.

Despite this happening over and over again, the irrigation in Beed district is very low compared to other district of Maharashtra. People dependence on private sources of groundwater use such as tube wells, bore wells, wells and piped water, limits access of farmers to water resources.

Study Area:

Beed district is one of the 36 districts of Maharashtra state. It is divided into 11 tehsils. It is situated flanked by Aurangabad and Jalna districts in the north, Parbhani in the east, Latur in the south east, Osmanabad in in south and Ahmadnagar district in the west and southwest. It is bounded by north latitude 18°28' and 19°28' and east longitude between 74°48' and 76°45'. The district headquarters is located at Beed Town. For administrative purpose the district has been divided in 11 talukas -Beed, Georai, Patoda, Ashti, Shirur (Kasar), Ambajogai, Kaij, Majalgaon, Dharur, Parli (V) and Wadwani. The totale area under 10693 sq. km. of the district.

Aim and Objectives:

1. To study climate change of district.
2. To find out relationship of climate change and agriculture.

Methodology:

Secondary data have been used for the research paper. For the present investigation Secondary data collected through various book, various internet web sides, research papers, articles, newspapers and periodicals etc.

Discussion:

Agriculture is not only the victim of climate change, it is also a source of greenhouse gases. Crop production and livestock release greenhouse gases into the air and are responsible for the major part of the emissions of methane (from cattle and wetlands, especially rice paddies) and nitrous oxide (from fertilizer use). Changes in land use such as deforestation and soil degradation – two devastating effects of unsustainable farming practices – emit large amounts of carbon into the atmosphere, contributing to global warming.

Farmers and pastoralists can play an important role in reducing global emissions by planting trees, reducing tillage, increasing soil cover, improving grassland management, altering forage and animal breeds and using fertilizer more efficiently among other measures. By maintaining higher levels of carbon in the soil – a process known as “soil carbon sequestration” – farmers can help reduce

carbon dioxide levels in the air, enhance the soil's resilience and boost crop yields.

In Beed more than 70% of the crop area is rain fed, making it highly vulnerable to climate induced changes in precipitation patterns. In addition to direct effects on crops, climate change is likely to impact natural resources like soil and water. Increased rainfall intensity in some regions would cause more soil erosion leading to land degradation. Water requirement of crops is also likely to go up with projected warming. Extreme events like floods, cyclones, heat wave and cold wave are likely to increase. Rainfall plays a critical role in year-to-year variability of production for these crops, with a change in growing season precipitation by one standard deviation associated with as much as a 10% change in production. Temperature also plays a significant role in driving year-to-year production changes, but was slightly less important than rainfall by this measure in the majority of cases. This result agrees with the intuition that rainfall is very important to agriculture.

Conclusions:

In these areas agriculture is highly dependent on the onset, retreat and magnitude of monsoon precipitation. Climate change has worsened the situation over the last few years, but what is more

worrying is the lack of planning. The groundwater levels in the area are precariously down. Focus was diverted to cash crops while local crops like Wheat, Jawar, Bajra, Maize, Gram, Tur, Groundnut, Cotton, oilseeds were not equally encouraged. Agriculture productivity largely depends upon adjustment of crop growing season with soil moisture adequacy periods. The state agricultural universities and regional research centers will have to play major role in adaptation research which is more region and location specific while national level efforts are required to come up with cost effective mitigation options, new policy initiatives cooperation.

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