



Original Article

Impact of Climate Change on Agriculture in Maharashtra: A Geographical Study

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Abstract

The paper describes and explains the Agriculture in Maharashtra and affect climate change in farming. The impact of climate change on the state's agriculture is likely to increase in the future. Farmers in Maharashtra have been facing severe drought for the last few years, adversely affecting groundwater reserves and soil health. As a result, the productivity of agricultural crops is declining. It has become necessary to enable farmers to adapt to the conditions created by climate change. Climate change is affecting agriculture and the lives of farmers in Maharashtra. Crops are likely to be hit the hardest by climate change in the future. For example, if there is less cold in winter, wheat production will automatically decrease. If it doesn't rain on time in June, sowing will be wasted. Climate change is a process that has been going on for many years and it is difficult to stop it, so you have to make changes in agriculture. The agricultural business needs to be enabled to cope with climate change. This requires efforts at the level of farmer research institutes and the government. Farmers need to change sowing time to time according to the changing climate. It is necessary to select seeds that produce at high temperatures, as well as to grow Agro Industry. Multiplication method has to be adopted by strengthening water resources, water must be used properly. Adopt modern technology to increase product value, keep a record of climate change from time to time. Modern agriculture should be stopped by adopting the changing climatic conditions and stopping the environmental degradation. Apart from, this paper to study the Agriculture in Maharashtra according To Climate Change: A Geographical Study

Keywords: Changing Techniques in Agriculture, Climate Change, Consequences of Unpredictable weather, impact of Agriculture in Maharashtra.

Introduction

Mutual interference in the natural balance of human beings is mainly responsible for climate change. The biggest detrimental effect of climate change is on the agricultural sector. Climate change will affect agriculture in the future. There will be changes in crop products and rainfall. Evaporation will increase, as well as the texture of the farm will be reduced, the farmland will be degraded and its productivity will be reduced. Positive steps need to be taken to avoid these dangers. Organic farming is an effective way to do that. The government should promote environmentally friendly farming like this. The distribution of rainfall has been constantly changing over the last twenty years, with the sudden onset of heavy rainfall or the onset of low rainfall. The total number of rainy days is decreasing. Melting ice due to global warming in such a situation, the effects of climate change are being felt. If measures are not taken in time, the effects of climate change will be felt on a large scale in the agricultural sector. Agriculture is suffering the most due to the changing climate. Heavy rains have threatened kharif crops and rabi crops due to heat. As the heat increases, the crop evaporates a lot. If water is not available to the crop on time and as per the requirement, the crop is destroyed. This is detrimental to the production of various crops as the rainy days are getting shorter. Excessive heat and extreme cold are detrimental to the crop. In addition, fog has also increased the incidence of diseases and pests on crops. Hailstorms have caused huge losses to farmers in the last few years. Climate change has hit the agricultural sector as a whole. This requires measures to be taken against the changing climate. Sudden or temporary climate change can be addressed through technology. So long-term solutions require research and policy change. Research has shown that some traditional methods of farming are useful. Losses can be minimized by adopting this cropping pattern.

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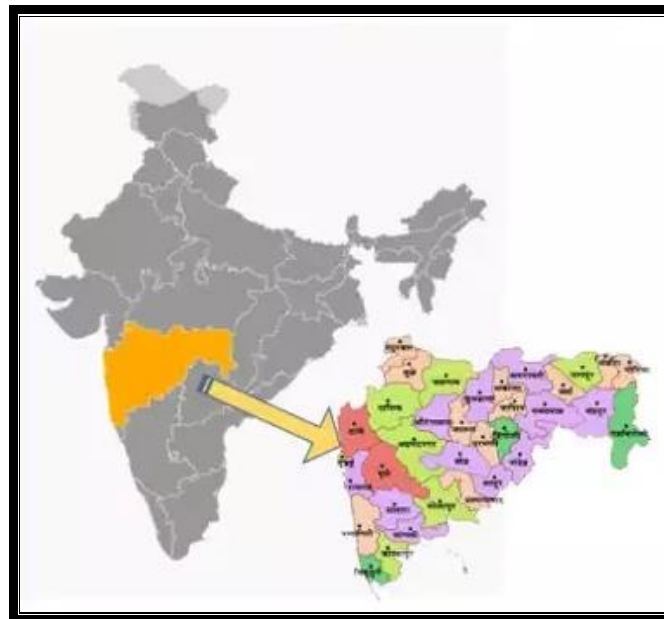
Aim and Objectives:

Aim and objectives of this paper are

1. To study the Climate Change in Maharashtra.
2. To Study Affect of Climate Change in Agriculture Sector in Maharashtra.
3. To Study Consequences of Unpredictable weather in terms of Agriculture.

Data Base & Methodology:

The present study is based on the primary and secondary sources. The secondary data was collected from various offices like district health office, Municipal Corporation office, district census report and statistical department of Maharashtra State. The primary data have been collected from field survey and the data has been processed and presented with help of cartographic technique



and analyzed accordingly.

Study Region:

The State of Maharashtra extends from 15° 45' to 20° 6' North Latitude and 70° 36' to 80° 54' East Longitude with Geographical area 3, 07,713 Sq. Km. It is bounded by Arabian Sea in the west, the State of Gujarat in the Northwest. Madhya Pradesh in the North, Chhattisgarh in the East, Andhra Pradesh in the Southwest, Karnataka in the South and Goa in the Southwest. Maharashtra occupies the western and central part of the country and has a long coastline stretching nearly 720 Km along the Arabian Sea. The state has 36 districts, Tahsils 358, there are 41,000 villages and 378 urban centers in Maharashtra.

Change Technique of Agriculture Methods:

The importance of the subjects is changing as the period from sowing to harvesting of different crops is changing considering the climate. This will change all the varieties recommended for the crop, water requirement, fertilizers. This does not rule out the possibility that the existing sowing technology for various crops may become obsolete. For this, it is necessary to study the weather accurately and introduce new technologies to the farmers through research. Modern equipment is needed to accurately predict the weather. Agriculture and climate are interrelated sciences. Although humans have known about the effects of climate on agriculture since time immemorial, all this systematic research has been going on since the 20th century. Crops affect crops at every stage of agricultural work till threshing. In addition to the direct correlation of factors such as heavy rainfall, long-term rainfall, extreme temperatures, etc., which can affect crop growth, climate also affects agriculture. Due to heavy rains, fields or crops cannot be cultivated. Grass grows so the crop does not grow well.

Generally it can be said that 57% of crop production is spent on fertilizers and seeds, while 50% of production depends on climate. In such a case, the entire economic math of the farmers is shattered. In such a case, the overall agricultural economy of the farmer collapses completely.

Impact of Climate Change on Agriculture in Maharashtra:

- **Irregular rain:**
- Decrease in rainfall or irregular rainfall in Maharashtra.
- Flooding and crop damage due to heavy rainfall in some parts of Maharashtra.
- Drought and water scarcity.
- **Rising temperature of Maharashtra:**
- Increased temperature leads to stunted crop growth and reduced production in Maharashtra.
- Increased incidence of pests and diseases on crops.
- Shortened harvest period for crops.

- **Decreased crop productivity:**
- Changes in temperature and rainfall lead to reduced crop productivity.
- Crop damage and economic loss.
- **Incidence of pests and diseases:**
- Increasing temperatures increase the incidence of pests and diseases.
- Increased incidence of fungal diseases on crops.
- Crop damage and economic loss.
- **Dependence on irrigation:**
- In rain-fed agriculture, dependence on irrigation increases.
- Problems arise in water management.
- **Drought and floods:**
- Climate change increases the likelihood of natural disasters such as drought and floods.
- Farmers' income is affected.
- **Farmers' financial situation:**
- Farmers face financial difficulties due to climate change.
- Income decreases due to reduced production.

Climate Change and Alternative Farming Management:

Rainy days are getting shorter as alternative farming management is interrelated with climate change and water. In order to protect the raindrops from falling, it is necessary to use water-repellent methods such as drip irrigation and sprinkling to irrigate the crops. It is necessary to absorb maximum amount of water in dry land fields and use micro-irrigation system for horticulture. As 80% of the area in the state is dry land, it is necessary to conserve ground water and conserve ground water. Soaking as much water as possible in the soil, as well as planting trees will conserve the environment and protect the crop. Losses can be minimized by adopting different cropping methods, crop rotation, use of intercropping methods, most importantly, selection of varieties that can withstand the changing climate.

Adopting climate-based cropping methods is essential in the next period. To cultivate shade nets, the garden must be completely covered. We see that farmers in many parts of the state are using old sarees to protect their crops. To reduce the effect of dust on various crops and orchards, the amount of fog can be reduced by burning kadikachara on agricultural dams. Trees should be planted to reduce greenhouse gases. Careful and proper application of chemical fertilizers should be given to the crop. In the wake of climate change, it has become necessary today to manage sustainable agriculture for sustainable production from agriculture. Farmers should adopt intercropping methods in agriculture. Multi-cropping method is definitely more beneficial than single cropping method, intercrop production without main crop gets bonus. In the field of agriculture, research has to be done on new varieties to increase the cultivation of varieties that are not susceptible to rising temperatures. Such a business helps in improving the living standards of the farmers. Climate change has had

a major impact on agriculture. What was once a thriving farm is now a crop.

Agro Based Industry:

The farmer works hard but he can live a life of self-respect. He does not get enough return from agriculture. Then the solution is agro-based supplementary business. By doing agri-business, the peasantry can determine its own path of progress, but through this business it can uplift its own conditions. With proper planning, farming and supplementary farming, farmers can survive in the face of drought.

Some of the important agri-businesses are as follows: Dairy is one of the most important agri-businesses. Considering low humidity, fodder production in some parts of the field should be followed by raising cows and buffaloes, which will help the family financially. This is a good one Agriculture is a supplementary occupation. If farmers adopt protected farming methods, they can get more crop production from flower farming and vegetables, and if they use shed nets and greenhouses, etc., the production increases. Goat rearing is also seen as a supplementary occupation to agriculture. Goat rearing provides financial opportunities, requires less capital and provides organic manure to the farmers. The silk industry is an industry based on agriculture and forestry which can provide employment opportunities to the farmers. Beekeeping can provide good income to the farmers.

If the available irrigation resources are used by the farmers for fish farming as a sideline along with protected irrigation for the crops, it will help in increasing the productivity of the farmers and uplift the living standards of the farmers. Farmers can get this good yield if they sell this fertilizer by setting up a desertation project. Farmers should strengthen the irrigation resources and produce fruit crops. E.g. Custard apple, lemon, guava, citrus, fig etc. For this, light land should be used, while doing nursery business; farmers should buy good seeds and produce seedlings. They can earn good money by selling seedlings of fruit trees and flowers. Farmers can get financial income from various types of agri-business such as forestry, food and fruit processing industry, bamboo farming, forest farming. For this, some fixed yield can be obtained by using useful oranges of agriculture. Proper planning of land management and cropping system is essential for efficient utilization of natural resources like soil, water, sunlight and air. Doing so will increase the level of productivity.

Conclusions and Recommendations

The impact of climate change is being felt in the agricultural sector. Therefore, the indiscriminate use of chemical fertilizers, pesticides, pesticides, improper use of water, destruction of live and pastures, low use of organic fertilizers have all resulted in deterioration of soil health and water pollution. This has led to many problems such as soil erosion, soil degradation, alkaline soils, imbalances of nature and pollution. To solve this problem, organic farming will automatically eliminate these problems. Organic farming has come to be known as sustainable farming.



Benefits of Organic Farming the Natural and Biological:

1. Fertility of the soil is maintained.
2. The balance of the environment is maintained.
3. Increases agricultural production capacity.
4. Soil erosion is low.
5. Livestock is widely used in agriculture.
6. Increases soil water holding capacity.
7. Due to organic farming, there is no toxin in the crop.

Due to the changing climate, the economy of agriculture has completely collapsed, so we have to take some conscious steps to overcome the drought situation in the future. Agriculture will have to adopt a holistic cropping system that will be sustainable. Farmers should prepare the crop pattern required according to climate change. Farmers should use improved planting techniques to increase crop productivity. Up-to-date agricultural technology in agriculture, crop rotation according to climate, increasing soil fertility, increasing water availability and doing agri-business along with agriculture will help increase the income of farmers.

Today, in addition to urgent measures to overcome the peasantry situation, all need to come together and work for long term measures for our Shivara, village. The government should launch various schemes to impart new research in the field of agriculture to the farmers.

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1. Conducting demonstrations.
2. Organizing farmers meet seminars, group discussions etc.
3. Large scale agricultural exhibitions.
4. Informing about the latest research in the field of agriculture through All India Radio and Television
5. Resolving the doubts of the farmers by sending relevant answers.
6. Organizing training classes for farmers for agriculture and other agro-based occupations.
7. To publish agricultural publications on various topics.

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Conflicts of interest

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