

Climate Change: An Adverse Impact on Indian Agriculture

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Abstract:

With the growing population, industrialization and urbanization are also widened, which is proportionate to the emission of greenhouse gases as well as climate change. Today's big challenge is to feed more people than ever by using the lesser agricultural land area. In addition to that the adverse climatic conditions raise the new level of complexity and challenges by affecting productivity and production and eventually the food security. The article emphasises the cause and possible adoption method to mitigate climate change, to contribute to food- security.

Introduction:

As we all know, the economies of many countries are majorly depends on the agriculture of that country. On the other hand, agriculture has directly or indirectly related to climate. Climate has a proper balance between soil, temperature and rainfall of that area because of this balance seeds can germinate and crop grows but nowadays, climatic change is a serious problem in agriculture due to high emission of greenhouse gases the global warming is increasing continuously so that ecological balance and productivity of crops reduce gradually and this is becoming a thread for Indian agriculture.

Causes of increasing Climatic change:

The main cause of climatic change is increasing global warming due to the high emission of greenhouse gases. These gases include chlorofluorocarbon, methane, carbon dioxide and other harmful gases. They are majorly produced by human activity, industrial revolution, green revolution, deforestation, higher use of pesticides, insecticides, herbicides, chemical fertilizers, methane and nitrous oxide gases are mainly produced by agricultural sectors.

Effect of climatic change on Indian Agriculture:

- Agriculture depends on rainfall. Climatic change disturbs the pattern of rainfall distribution due to which it leads to increasing temperature, long time dry region, high solar radiation that is very much harmful to the growth and development of plants.
- Due to increasing temperature, the availability of groundwater level decreasing and the productivity of crops is highly afflicted by groundwater because 89 per cent of water is used for irrigation.
- Increasing temperature leads to reduce productivity of soil and gradually turns to soil degradation by which important essential minerals are lost due to erosion.
- Disturb rainfall pattern, also results in flooding it directly destroy crops, it washes fertile topsoil by which productivity of crop reduces at an extreme level. In waterlogged soil increases the leaching of important minerals, denitrification so that exchange of gases is not possible and the soil becomes infertile.
- Change in climatic conditions sometimes leads to an increase in the pest population. It provides favourable conditions for the growth and reproduction of harmful pathogens so it may cause severe disease to crop and reduces its yield.
- Due to the irregular distribution of rainfall weeds population is also increases due to which the cost of cultivation increases and productivity decreases.

Measures that should be adopted to reduce the adverse effect of climatic change on agriculture:

- Farmer should adopt sustainable agriculture.
- Farmers should go with crop diversification and take mixed farming so that in an adverse condition also they will able to take profit from other sources of farming.
- Take contingent crops in adverse conditions and grow those varieties that are adaptable to local climate and able to give a high yield in that area.
- Use stress and disease-resistant varieties of the crop.
- Reduces the use of harmful insecticides, pesticides and herbicides.
- In the area where drought is a major problem using water conservation practices like maintaining individual ponds on farms so that they can store water during the rainy season and farmers can use them in water scarcity situations and save the crop from drought.

- Grow the tolerant and heat-tolerant varieties.
- Improved irrigation practices by capture and retention of rainfall.
- In flooding, the area uses proper drainage of water so that water cannot store and the field is free from waterlogged conditions and the problem of leaching and denitrification may reduce at a certain level.
- Farmer should aware of available natural resources and their uses so that it reduces the cost of production and increases yield.
- Farmers may have direct contact with KVK and other Agricultural institutes so that they are aware of the weather of that area it will help them to take crops according to climatic conditions.
- Farmers have proper knowledge and idea about new agricultural technology so they may help in reduce the cost of cultivations through less use of inputs and help in increasing productivity of crops.

Conclusion:

Nowadays, climatic change is common in every part of the world. it is an uncertain situation for everyone and it has a very dangerous effect on growing populations, growing crop production, livestock and every living organism of this world. It may occur in the form of drought, cyclones, floods, forest fire, many severe diseases etc. and these all changes hugely afflicted agriculture because agriculture depends on climate so by adopting these small- small measures, environmental policies and their action we can save our crop to these problems and farmers can produce foods for consumption of every individual.