

EFFECTS OF GLOBAL WARMING ON AGRICULTURE

(Global Warming Messes Up Farming)

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ABSTRACT

The effects of global warming on agriculture are increasingly evident, posing significant challenges to the farming sector. Rising temperatures, altered precipitation patterns, and extreme weather events are disrupting traditional agricultural practices worldwide. These changes lead to reduced crop yields, lower quality produce, and increased susceptibility to pests and diseases. Water scarcity and soil degradation further exacerbate the situation, impacting food security and livelihoods. Farmers are forced to adapt by implementing new technologies, changing crop varieties, and adjusting planting schedules. However, these adaptations often come at a high cost and may not fully mitigate the emerging risks. Urgent collaborative efforts are essential to develop sustainable strategies that can help agriculture withstand the impacts of global warming, ensuring a stable food supply for future generations. Addressing this issue requires holistic approaches that involve policymakers, scientists, farmers, and the broader community working together to build resilience and sustainability in the face of climate change.

Keywords: *Precipitation, Disease, Sustainable, Scientist, Climate*

INTRODUCTION

Global warming is the phenomena of rise in Atmospheric and Ocean temperature, it is caused mainly by human activities like burning Charcoal, Oil, Natural gas, Cut down of Forest, Vehicle Pollution etc. This result in the increase of Carbon dioxide (CO₂) level in the Atmosphere. Then the Carbon dioxide is accumulated in the air present on the Earth, this gas traps heat and prevent heat from escaping into space. Gradually it results in rise of Atmospheric and Ocean Temperature Globally. We can say in simple that our planet is becoming hotter due to Human activities and resulting in Climate changes, Disturbance in weather pattern and Ecosystems.

As per Scientist's research average global temperature has increased by 0.06 degree

Celsius globally. Global warming has a major impact on Agriculture by affecting Crop Yield, Livestock and it makes Agriculture more challenging, due to rise in temperature and it can lead to Heat stress in Crops, Droughts, that impact Crop Production and can also create favourable conditions for Pest and Diseases.

1. Rise in Temperature

Rise in Temperature leads to heat stress in present crops and plants by affecting Photosynthesis and impact on plant growth, this gradually results in reduced Crop Yield and Poor-quality harvest, For example in India in 2023 due to unstable Weather pattern and extreme Rainfall the Tomato Production is decreased and resulted in

damping off of the crop and reduced harvest, where this resulted in Increase of cost by 300%.

Global warming can affect the planting time and harvesting time of crops, which can be more difficult for certain crops.



2. Changes in Precipitation Pattern

A sudden rise in temperature leads to change in evaporation rate, it may cause higher evaporation rate, and severe droughts. This gradually result in the lack of water availability for Crops and Livestock's, impacting Crop development and Growth. Also cause water shortage for Irrigation. Change in Precipitation pattern leads to change in water cycles, affecting crop growth and productivity. And a sudden increase and decrease in precipitation would affect crop yield.

3. Floods

Global Warming cause a sudden change in Temperature causing extreme rainfall that result in Flooding or Floods. This flood leads to soil erosion, soil nutrient loss, and Crop damage. Heavy rainfalls and floods are caused by disturbance in weather pattern due to sudden temperature increase and decrease. Gradually this affects the soil structure. Floods can cause soil salinity problems making Agriculture more challenging and causes Loss. Floods makes agriculture land unfit for plants to harvest. Floods can damage crop harvest resulting in reduced crop yield. It may also cause

waterlogged condition for plants and plants can lack nutrients because of Nutrient Leaching from soil. Because of damaged roots, the plants nutrient uptake will be reduced. Wet, cool weather conditions during floods are more favourable for Disease development. Mostly the small plants can be washed away due to heavy floods.

4. Pest and Disease Outbreak

The major effect of Global Warming is the Pest and Diseases outbreak in the Crop Field. Because the warm temperature is more favourable to Pest and Pathogens growth and development in the Field. It may expand Pest and Pathogen's different geographic locations causing Agriculture threat and it is more suitable for Pest Reproduction. Generally, the Pest reproduces faster in warm temperature creating more challenges for farmers to control pest.

5. Impact on Economy

As the temperature increase Agriculture become more expensive and loss making. Profits will be decreased because to adjust the temperature suitable for crop by implementing technology and best agricultural practices to control temperature. This leads to burn more money on crop protecting tools, Land management strategies. Change in weather patterns leads to rise in temperature and causing risk to water resources because of increase in the rate of evaporation, and it impacts on water availability, where it leads to adapt new irrigation technologies like drip irrigation and sprinklers system. Hence, they are expensive, so they may reduce our Profit.



6. Impact on Livestock and Agriculture Workers

Global warming impact not only Agriculture but also impact Livestock, which are depended on Agriculture through various ways. A sudden rise in temperature can cause heat stress, Diseases spread, decrease in feed quality, increased risk of diseases and hot temperature causes reduced productivity affecting Animal growth and development. It also causes several health risks to Agricultural workers, when they exposed to High heat and Extreme weather conditions, Pesticides causes skin diseases, Respiratory problems and Neurological health effects. This is a severe and major problem that effects Agricultural workers severely. So, to control these we can take some steps or measures by implementing some new Agriculture methods like Sustainable Agriculture practices, Precision farming, Rainwater harvesting, soil management techniques, change in cropping pattern by adapting the mixed cropping, Intercropping, Crop rotation, Promoting Agroforestry and Reducing the Burning of crop reduces.

If we can prevent them, it is the best thing to control Global Warming. Global warming is a man-made disaster that affects more seriously on Agriculture like reduced crop production, reduced crop yield, poor quality of harvest, droughts, floods, and affecting the lifecycle of Livestock. This can only be controlled by implementing Sustainable Agricultural Practices and Eco-friendly Agricultural Practices. Once M.S. Swaminathan said that future belongs to the countries with grains, not with guns. So, it is our responsibility to prevent Global warming.



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