

## Impact of Climate Change on Agriculture and Allied Sector

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Climate change is the most serious threat to the environment, agriculture, food security, and the overall ecosystem. Major factors contributing to climate change are industry, agricultural sectors, energy, deforestation, forest fire, volcanic eruption, and land use change. Both natural and anthropogenic activities are contributing to climate change but the role of man-made activity has increased in past decades. These activities lead to increased greenhouse gas production like CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. These gases absorb the outgoing long-wavelength infrared radiations which in turn result in an increased temperature and thus towards climate change.

Climate change has both direct and indirect impacts on agriculture through soil, crop, livestock, and pest. Soil fertility is affected because of the increase in CO<sub>2</sub> and soil temperature which impacts the processes and properties responsible for maintaining soil fertility and productivity. Minerals dissolution in solution increases due to higher temperature but availability to plants decreases. Nitrogen bioavailability in plants decreases due to denitrification and volatilization. The amount of water required for crops also varies with the increase in climate change which causes more frequent extreme events like floods, drought, etc. soil degradation and erosion are other soil-related problems that have increased in due to climate change. The sea level has increased to increase climate change causing salinity problems in coastal areas and resulting in reduced soil fertility.

Increased incidence of pest attacks is evident as a result of climate change. The interaction among the host, environmental factors, and pathogen changes due to increased temperature. The effect of pesticides on targets also got impacted due to increased temperature. The livestock sector employs a large number of people and provides livelihood in the agriculture allied sector globally. It also contributes to food security and meets the protein and nutrients demand. But due to climate change fodder quality has reduced and reduced fertility is also observed along with loss of biodiversity. Thus, climate change is



impacting the agriculture and allied sector heavily and should be tackled by adopting sustainable agriculture farming methods, conserving biodiversity, organic farming, soil conservation, and promoting renewable energy sources. Treaties and conventions dealing with climate change should be implemented in letters and spirit.

