

**"Climate Change and Crop Diversification in Selected Study Blocks
of Coimbatore District"**

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Conclusion

Global climate change, its causes and impacts are one of the most emerging issues in science and technology domain. India, a tropical country, is facing its impacts through droughts, floods, cyclones, heat waves, hailstorms, and coastal salinity which have become threats to sustainable development. About 70 per cent of the Indian population is directly or indirectly associated with agriculture and sub-sectors, and major Sustainability Development Goals (SDGs) are expected to be met from this sector. Increasing global temperature due to the emission of enormous amount of green-house gases from various sources is the cause of climate change and impacts. Extreme temperature and its erratic events disrupt the activities of all the existing lives on the planet by means of severe damage or loss. Assessment of the impacts and a comprehensive understanding of the benefits of adaptation options over combating the uncommon incidents of climate change is pivotal in the current scenario to sustain life. The impact of climate change on Indian agriculture has created serious things of concerns for India, which are urgently needed to deal with in absence of which it can very badly and severely affect India and its billion populations. The severe concerns of climate change on Indian agriculture are; in the situation of enhancing production, the productivity of agriculture climate change will adversely affect and its contribution to the development of the economy will be further marginalized. The uncertainty and variations in rainfall will hamper production especially of food grains and intensify the want for food and food security of the majority of Indians especially from the socially and economically deprived sections of the society. Climate change will adversely affect the water supply through rivers and further intensify drinking water availability and irrigation facilities for the development of the agriculture of India. Such climatic fluctuations could adversely affect agricultural sustainability resulting in unforeseen situational shortages which could also impact other economic sectors. The hampered growth of agriculture by climate change will also affect unemployment, poverty, and inequality in the Indian economy.

Recommendations of Future Research

Diversification of rural income through livelihood and crop diversification and managing the village resources judiciously by the community participation programme for stability and sustainability.

Managing climate risks efficiency through weather based agro advisories with a higher resolution and developing weather insurance products encouraging weather-crop research program at different agro climatic regions.

Evaluation of proven technologies on farm management practices for addressing climate variability in the farm fields.

Development and adaption of location specific techniques for water efficient agriculture.

Integration of climate change initiatives with the national agriculture policies

Suggestions

Maintaining crop health across the planet, in turn, is a key requirement for climate change mitigation, as well as the conservation of biodiversity and the provision of ecosystem services under global change.

Information gathered so far has been fragmented and a comprehensive analysis of climate change impacts on agriculture is required. Experimental research on a diverse range of crop and biotic and abiotic systems is necessary to improve comprehension of climate change impacts on agriculture.

To maintain ecosystem health and services under variable, unpredictable or unknown conditions, we need more resilient systems, decentralization, participatory research and breeding networks. At the same time, increased involvement of the many stakeholders and scientists from outside plant pathology shows the importance of considering trade-offs.

Increasing diversity would be in favour of a land-sharing approach, but may be relevant also to land-sparing scenarios (e.g. at the margin of fields), depending on the spatial and temporal scale and the type of diversity (genetic, species, species turnover, ecosystem) considered.