

# Critical Analysis of the Effect of Climate Change on Agriculture with Special Reference to Tamil Nadu

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## Abstract

The traditional agricultural system of Tamil Nadu forms the foundation of this research, highlighting the enduring significance of indigenous farming practices in the modern era. Recognizing the growing impact of climate change, the Department of Environment (DoE), Government of Tamil Nadu, has established the **Tamil Nadu State Climate Change Cell (TNSCCC)** in alignment with India's **National Action Plan on Climate Change (NAPCC, 2008)**. The vision of this initiative is to strengthen the state's capacity to adapt and respond effectively to global climate challenges through sustainable governance, policy coordination, and public awareness. Agriculture, along with its allied sectors, remains the primary source of livelihood for the majority of the rural population in Tamil Nadu, with nearly two-thirds of households depending on it and about 93% of farmers being small or marginal.

Traditional farming methods are increasingly being replaced by scientific and technological systems, resulting in the gradual erosion of ecological balance and cultural knowledge. Climate projections for India indicate a potential rise of up to 4°C in surface air temperature by 2100, threatening agricultural productivity and food security. Historically, Tamil Nadu's farmers cultivated a wide range of crops such as paddy, millets, pulses, coconuts, bananas, tamarind, and sandalwood, reflecting both agricultural diversity and cultural richness.

This research focuses on revitalizing traditional farming practices in Tamil Nadu as a sustainable response to climatic stress and resource limitations. It aims to promote awareness of indigenous agricultural wisdom, environmental ethics, and sustainable resource management. By integrating traditional knowledge with modern scientific approaches, the study envisions a resilient and sustainable agricultural framework that preserves the ecological and cultural heritage of Tamil Nadu for future generations.

**Keywords:** Climate change, Tamil Nadu, Traditional farming, Sustainability, Indigenous knowledge, Agriculture, Environmental resilience.

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