

Drought in India: Its Impact and Mitigation Strategies

Arun Kumar Kondeti

Scientist (Agronomy), RARS, Nandyal, Acharya N.G. Ranga Agricultural University, Andhra Pradesh

SUMMARY

Drought is a complex phenomenon that requires a multi-faceted approach to mitigation. While India has made significant strides in implementing policies and programs, the integration of technology, community involvement, and climate-resilient strategies remains crucial to minimize its impacts. Holistic and adaptive planning is essential to ensure water security and sustainable development.

INTRODUCTION

Drought is a recurrent natural disaster in India, characterized by prolonged periods of inadequate rainfall. It has severe repercussions on the agricultural sector, water resources, ecosystems, and livelihoods, particularly in semi-arid and arid regions. Approximately 68% of India's geographical area is prone to drought in varying degrees, with 33% classified as chronically drought-prone.

Impact of Drought in India

- Agriculture and Food Security:** Agriculture, which employs about 58% of India's population, is highly dependent on monsoon rains. Drought leads to reduced crop yields, loss of livestock, and food shortages, affecting food security and increasing malnutrition rates.
- Water Resources:** Drought depletes surface and groundwater levels, leading to drinking water scarcity and conflicts over water allocation among states, such as the Cauvery water dispute.
- Economic Loss:** Economic losses are substantial, with decreased agricultural output, reduced GDP, and increased government spending on drought relief programs.
- Environment:** Drought exacerbates land degradation, desertification, and loss of biodiversity. Forests become prone to fires, and wildlife habitats shrink due to water scarcity.
- Social Impacts:** Drought induces migration, unemployment, and social unrest. Vulnerable groups, including small farmers and landless laborers, bear the brunt of its consequences.

Mitigation Strategies

1. Water Resource Management:

- Development of rainwater harvesting systems and watershed management programs.
- Promotion of efficient irrigation techniques such as drip and sprinkler irrigation to conserve water.

2. Agricultural Practices:

- Cultivation of drought-resistant crop varieties and adoption of agroforestry.
- Improved soil management through techniques like mulching and organic farming to retain moisture.

3. Policy and Planning:

- Implementation of the National Action Plan on Climate Change (NAPCC), particularly the National Water Mission and National Mission for Sustainable Agriculture.
- Drought monitoring and early warning systems using satellite data and meteorological forecasting.

4. Community Participation:

- Encouraging community-based approaches, such as the Pani Panchayat model, to manage water resources locally.
- Capacity-building programs for farmers to adopt sustainable practices.

5. Infrastructure Development:

- Construction of check dams, farm ponds, and groundwater recharge structures.
- Development of alternative livelihood options for rural communities to reduce dependence on rain-fed agriculture.

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