Agro-Economic Alerts

Aiding the future of India's farmers and agriculture



(Photo Source: Dr. Chetti Praveen Kumar, AERC Vishakapatnam)

For kind attention of:

The Hon'ble Prime Minister's Office,
the Ministry of Agriculture and Farmers' Welfare,
and all others interested

Emerging Critical Situations and Threats in India's Agricultural Economy

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market and inadequate support from agriculture extension agency.

Actions Suggested

- Crop Diversification and Effective Irrigation Technology: Educate farmers to diversify their cropping pattern and promote awareness about benefits of pulses cultivation. This can be done through training programs, workshops, and farmers field schools. Prioritize investment in improving irrigation facilities in rainfed areas to provide reliable water sources for pulse cultivation.
- Effective procurement process: Streamline the procurement process and ensure effective implementation of Minimum Support Price (MSP) for pulses production in Andhra Pradesh.
- Market-based measures: Establish efficient market linkages for pulses farmers in Andhra Pradesh, providing them with timely information on market demand, price, and procurement centers. Foster collaboration between government agencies, research institutions, farmer organizations, and private stakeholders to collectively address the challenges in pulse production.

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Status of Paddy Cultivation in the Climate-vulnerable Zone of West Bengal

Key Highlights

- Climate change makes zones vulnerable to the increased soil and groundwater salinity[1] which affects local agriculture and jeopardizes the local food security of the coastal population[2].
- In India, the median location of cyclone landfall has shifted from west to north and eastward over time, Currently, the highly impacted zones are found in Odisha and West Bengal region[3]. The majority of the farmers in the state are marginal or small landholders and rely significantly on the rainfed production of food grains, which does not generate enough agricultural revenue for them[4].
- The state's diverse agro-climatic zones (i.e., Northern Hill Zone, Terai-Teesta Alluvial Zone, Vindhyan Alluvial Zone, Gangetic Alluvial Zone, Undulating Red and Laterite Zone, and Coastal Saline Zone) further influence paddy production, contributing to the overall agricultural output of the region. Among all these agro-climatic zones, the Coastal Saline Zone is more susceptible to climate change and has been facing extreme weather events.
- This study was conducted to assess the status of paddy production in the Coastal Saline Zone of West Bengal compared to other agro-climatic zones using the ten years (2011-12 to 2020-21) plot level improved variety paddy production data of Kharif season[5]. This study excludes Northern Hill Zone due to its very low contribution (i.e., 0.56 per cent of the total area and 0.46 per cent of the total production in 2020-2021) to the total paddy production of West Bengal.



Source: *Rishav Mukherjee, AERC Visva Bharti*

Observations

- Gangetic Alluvial Zone shows the highest average paddy productivity (46.47 Qtl/Ha) during 2011-2012 to 2020-2021, followed by Vindhyan Alluvial Zone (41.80 Qtl/Ha), Undulating Red and Laterite Zone (38.79 Qtl/Ha), Terai-Teesta Alluvial Zone (38.10 Qtl/Ha). During the same time period, the average paddy productivity of the Coastal Saline Zone is lowest, i.e., 35.42 Qtl/Ha.
- The compound annual growth rate (CAGR) of average paddy productivity for the year 2020-2021 compared to 2011-2012 is the highest for Vindhyan Alluvial Zone as well as Undulating Red and Laterite Zone (1.46%), followed by Terai-Teesta Alluvial Zone (0.61%) and Gangetic Alluvial Zone (0.12%).
- However, the CAGR of average paddy productivity for the year 2020-2021 compared to 2011-2012 is negative for Coastal Saline Zone (-0.23%).
- The average intra-zonal variability (i.e., Coefficient of Variation=Standard Deviation/Mean×100) of the yield rate of paddy for 2011-2012 to 2020-2021 shows an increasing trend as we move from the northern to southern agro-climatic zones of West Bengal.
- The average intra-zonal variability of the yield rate of paddy is lowest for Terai-Teesta Alluvial Zone (0.16), followed by Vindhyan Alluvial Zone (0.17), Gangetic Alluvial Zone (0.20), Undulating Red and Laterite Zone (0.24). And it is highest for Coastal Saline Zone, i.e., 0.26.

Actions Suggested

- Increase farmer enrollment in crop insurance schemes in order to mitigate loss in farm income due to climate variability.
- Promote adoption of Climate Smart Agricultural practices in the Coastal Saline Zone through financial incentives, subsidies, or grants and policies that provide information and support for water conservation and soil health improvement.
- Prioritize the promotion of salt-tolerant paddy varieties that are well-suited to the Coastal Saline Zone, ensuring higher yields and reduced crop losses.
- Promote agroforestry practices in these zones to improve soil fertility and reduce soil salinity.

- To meet the high irrigation needs for paddy cultivation, prioritize investment in drainage systems to manage saltwater and flooding in the Coastal Saline Zone. This will reclaim additional land for agriculture and minimize the impact of salinity on existing farmland.

Information Sources

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