

A Detailed Review on “Use of Fertilizers and Its Regional Disparity in Rajasthan”

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Abstract: The goal of the current study is to examine the spatial patterns of regional disparities, variations in the levels of agricultural development, and the ad hoc relationships between agricultural development (the dependent variable) and particular independent variables of regional disparities among the districts of the state of Rajasthan. The study makes use of publicly available data from the Census of India and Rajasthan as well as other statistical data at the district level.

Rajasthan exhibits inter-district agriculture differences due to its diverse agro-climate. Depending on rainfall and a moisture index, the state's districts experience dry, semi-arid, or per-humid conditions. They have varying development potential in various economic areas. This study on regional-agricultural inequalities in Rajasthan was conducted with the primary goal of assessing inter-district differences in key economic and livelihood variables so that required action could be taken to lessen inter-regional disparities.

Keywords: Regional Disparities, Independent variable, Moisture index, Livelihood.

Introduction:

Rajasthan, with its varied agro-climatic zones, suffers particular difficulties in developing its agriculture because of its dry and semi-arid areas. Consumption of fertilisers is essential for increasing the state's soil fertility and agricultural yield. However, there are substantial differences in fertiliser use and distribution among Rajasthan's many areas. This article examines the utilization of fertilizers and the regional disparity in their application,

highlighting the implications for agricultural productivity, socio-economic factors, and potential solutions for a more equitable distribution.

Fertilizer Consumption Patterns:

Fertilizer consumption in Rajasthan has witnessed growth over the years due to the need for enhancing agricultural productivity and meeting food demands. However, the patterns of fertilizer use vary across different regions of the state. With more readily available water and rich soils, the northern and eastern areas have greater fertiliser application rates. Contrarily, the dry and semi-arid regions in the west and south confront problems such water shortages and low soil fertility, which results in lesser fertiliser usage.

Factors Contributing to Regional Disparity:

Several factors contribute to the regional disparity in fertilizer consumption in Rajasthan:

Agro-climatic conditions: The potential for agriculture and the appropriateness for fertiliser application depend on regional differences in temperature, soil types, and water availability. Higher rates of fertiliser usage are typical in areas with better environmental conditions.

Irrigation infrastructure: When choosing where to apply fertiliser, irrigation system accessibility and effectiveness are key factors. Due to improved agricultural water availability, areas with superior irrigation infrastructure

are more likely to have higher fertiliser usage.

Socio-economic factors: Consumption of fertiliser is also influenced by socio-economic factors such as farm size, landholding patterns, availability to financing, and knowledge. Larger farms with better financial resources and access to extension services are more likely to utilize fertilizers effectively.

Fertilizer use trends:

India is second in the world for both consumption and production of nitrogen and phosphorus fertilisers, including urea and diammonium phosphate (DAP). India is the third-largest producer of fertilisers with phosphorus. India is the fourth-largest user of potash fertilisers, but it does not manufacture them there. To guarantee that the local supply of fertilisers is sufficient, India depends on both domestic production and imports. Although imports have lately reduced, notably after 2010, imports still made up roughly 38% of all fertilisers consumed in 2018–19, 26% of nitrogen fertilisers, and 45% of phosphorus fertilisers.

In the central and western states—Madhya Pradesh (5.8%), Maharashtra (4.3%), and Rajasthan (5.4%)—where fertiliser use intensity is lower, ranging from 50 kg per ha in Rajasthan to 125 kg per ha in Maharashtra, the increase rate of fertiliser use per hectare was better.

Key Policy Effects:

The Nutrient Based Subsidy, Decontrol, and Retention Price Scheme were all designed to have an immediate impact on nutrient consumption. We pick them to see how policies affect fertiliser use. The Retention Price Scheme has both a short-term and long-term favourable impact on phosphorus consumption. This might be as a result of the Retention Price Scheme's two-phase implementation. It was initially implemented for nitrogen in 1977 and then expanded to phosphorus in 1979 when the

fixed subsidy per tonne of phosphorus was discontinued. The rapid reduction in phosphorus consumption following the removal of the fixed subsidy was countered by the long-term increase in consumption (86,000 tonnes annually).

Implications of Regional Disparity:

The regional disparity in fertilizer use has several implications for agriculture and rural development in Rajasthan:

Yield gap: Uneven fertiliser distribution causes a yield difference between regions, with poorer agricultural production in areas getting less fertiliser. This gap hinders overall agricultural development and exacerbates income disparities among farmers.

Socio-economic inequality: The regional disparity in fertilizer consumption can perpetuate socio-economic inequalities among farmers. Compared to farmers in areas with better access to fertilisers, farmers in areas with limited access may find it difficult to improve their income and standard of living.

Environmental concerns:

Disproportionate fertilizer application can result in environmental issues such as nutrient imbalances, soil degradation, and water pollution. While places with lesser fertiliser usage may suffer with soil nitrogen depletion, regions with higher fertiliser use may experience problems with nutrient runoff.

Promoting Equitable Fertilizer Distribution:

To address the regional disparity in fertilizer consumption and promote more equitable distribution, the following measures can be considered:

Infrastructure development: Improving irrigation infrastructure in arid and semi-arid regions can enhance water availability,

facilitating increased fertilizer use and agricultural productivity.

Access to credit and extension services:

Ensuring that farmers in all regions have access to credit facilities and extension services is crucial. This can provide them the information, skills, and resources they need to use fertilisers efficiently.

Soil health management:By putting more emphasis on soil health management techniques like crop rotation, organic matter addition, and conservation agriculture, we may improve soil fertility and lessen our need on fertilisers. These practices can benefit regions with limited access to fertilizers.

Targeted subsidy programs:

Implementing targeted subsidy programs that prioritize regions with lower fertilizer consumption can help bridge the gap and provide support to farmers in resource-constrained areas.

Conclusion:

The discrepancy in fertiliser usage among Rajasthan's regions creates problems for environmental sustainability, socioeconomic growth, and agricultural output. A multifaceted strategy, including infrastructure development, credit and extension services accessibility, soil health management, and targeted subsidy programmes, is needed to address this imbalance. By promoting equitable fertilizer distribution, Rajasthan can enhance agricultural productivity, reduce socio-economic disparities, and ensure sustainable agricultural practices across all regions of the state.

Importantly, the intensity of fertiliser usage is increasing at a gradual rate across states, shifting from areas where it has peaked to those where it may play a more beneficial function. According to our study, the main initiatives have been successful in influencing fertiliser usage. Our bibliometric study reveals that current

research concentrates on the issues that we urgently need to solve. However, during the study period, no high-quality social science research on fertilisers from India was carried out; this is a caution.

The eastern states have seen a significant increase in the intensity of fertiliser use. That is encouraging because these states utilize very little fertiliser on a regular basis. So that we may profit from the increasing intensity of fertiliser use, enough support should be provided to areas where the base level of fertiliser usage is low.

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