



Regional Disparities in Agriculture in Rajasthan

*Dr. Narendra Yadav and Dr. Latika Shrama

Department of Agricultural Economics, Maharana Pratap University of Agriculture and Technology, Udaipur (Raj.), India

*Corresponding Author's email: ynarendra0988@gmail.com

Rajasthan is one of India's largest agricultural states, contributing significantly to the production of coarse cereals, oilseeds, and pulses. Agriculture in the Rajasthan state is predominantly rainfed, with a large proportion of the cultivated area dependent on monsoon rainfall and limited irrigation facilities. Due to its diverse agro-climatic conditions, the state exhibits wide regional variations in agricultural productivity and cropping patterns. The gross area sown in Rajasthan during 2022-23 was 281.71 lakh hectare as against 274.42 lakh hectare in 2021-22, recording an increase of 2.66 percent. The Net Area Sown during 2022-23 was 184.23 lakh hectares which represent 53.74 percent of total reporting area as against 181.30 lakh hectare in 2021-22 showing an increase of 1.62 percent.

Discussion

Regional disparities in agriculture in Rajasthan refer to the uneven distribution of agricultural development across its regions, reflected in variations in productivity (Table-1 and Table-2), income levels, cropping patterns, and access to resources. These disparities primarily arise from the state's diverse agro-climatic conditions, ranging from the arid desert regions in the west to relatively humid and fertile plains in the east and south-east. The sharp decline in rainfall from east to west plays a crucial role in determining agricultural potential, leading to a clear divide between irrigated and rainfed regions. A major dimension of these disparities lies in the unequal availability of irrigation facilities. Regions with assured irrigation, particularly those supported by canal systems, tend to adopt modern agricultural practices, utilize high-yielding varieties, and achieve higher productivity and cropping intensity. In contrast, rainfed regions depend heavily on monsoon rainfall, resulting in unstable production and lower yields, thereby creating a dualistic agricultural structure characterized by commercialized farming in irrigated areas and subsistence agriculture in drought-prone regions.

District-level data further substantiate these disparities. Districts such as Bundi and Baran exhibit very high irrigation intensity in year 2022-23, with 97.39 per cent and 96.92 per cent of net irrigated area to net sown area, respectively, indicating near-complete irrigation coverage. In contrast, arid districts like Barmer and Churu have only 19.46 per cent and 23.49 per cent, reflecting a heavy dependence on rainfall. Similarly, in terms of gross irrigated area, Sri Ganganagar ranks highest with 88.16 per cent, followed by Bundi (67.05 per cent), whereas districts such as Churu (22.84 per cent), Pali (23.46 per cent), and Barmer (24.53 per cent) lag significantly behind. The variation in irrigation sources further reinforces these inequalities. Sri Ganganagar district has the largest canal-irrigated area (11,27,171 hectares), with major contributions from the Indira Gandhi Canal (4,59,273 ha), Gang Nahar (5,20,919 ha), and Bhakra Nangal canal (1,46,979 ha). In contrast, well irrigation dominates in districts such as Jhalawar (2,80,853 ha) and Bhilwara (2,50,759 ha), indicating regional differences in irrigation dependence.

Rainfall distribution also shows marked spatial variation, further contributing to agricultural disparities. During 2022–23, Jhalawar received the highest rainfall (1469 mm), followed by Rajsamand (1364.60 mm), Baran (1212.60 mm), Bundi (1139.10 mm), and Banswara (1092.20 mm), whereas the lowest rainfall was recorded in Jaisalmer (385.40 mm), Barmer (429.80 mm), Jodhpur (477.10 mm), and Bikaner (570.90 mm). These variations in irrigation intensity, sources, and rainfall distribution clearly explain the uneven agricultural development across districts, with irrigated and high-rainfall regions achieving higher productivity, while arid and low-irrigation regions remain relatively underdeveloped.

The distribution of hybrid seeds further highlights regional disparities in agriculture. During the year 2022-23, the highest distribution of cereal hybrid seeds was observed in districts like Bhilwara (1,07,905 quintals), Sri Ganganagar (1,05,062 quintals), and Bharatpur (90,506 quintals), indicating greater adoption of improved technology and better access to agricultural inputs in these regions. In contrast, arid districts such as Jaisalmer (4,400 quintals), Barmer (19,056 quintals), and Churu (18,068 quintals) show significantly lower seed distribution, reflecting limited input use and lower technological penetration. This uneven distribution of hybrid seeds reinforces the pattern of regional imbalance, where developed and irrigated districts benefit from modern agricultural practices, while drought-prone areas continue to lag behind.

Table-1 Wheat productivity and Farm Harvest Price performance in Rajasthan districts

Districts	Kg/ Hectare	Farm Harvest Price	Districts	Kg/ Hectare	Farm Harvest Price
Dholpur	4679	2063	Jaisalmer	1600	
Hanumangarh	4580	2141	Barmer	1790	2775
Bundi	4503	2306	Dungarpur	2191	2274
Chittorgarh	4482	2207	Jodhpur	2272	2755
Ganganagar	4394	2074	Udaipur	2471	2518

Table 1 shows, wheat productivity was significantly higher in districts like Dholpur (4679 kg/ha), Hanumangarh (4580 kg/ha), Bundi (4503 kg/ha), Chittorgarh (4482 kg/ha), and Sri Ganganagar (4394 kg/ha). These districts were either well-irrigated or have better soil fertility and input use, which contributes to higher yields. In contrast, arid and semi-arid districts such as Jaisalmer (1600 kg/ha) and Barmer (1790 kg/ha) show very low productivity, reflecting poor rainfall conditions, limited irrigation, and lower adoption of modern agricultural practices. Districts like Dungarpur (2191 kg/ha), Jodhpur (2272 kg/ha), and Udaipur (2471 kg/ha) fall in the medium productivity category, indicating partial irrigation support and moderate resource availability.

Farm harvest prices (FHP) also exhibit variation across districts, though not always directly proportional to productivity. For instance, Bundi records a relatively high FHP (₹2306/qlt) along with high productivity, indicating better market access or quality produce. Similarly, Hanumangarh (₹2141/qlt) and Ganganagar (₹2074/qlt) maintain stable prices due to strong market linkages. On the other hand, lower productivity districts like Barmer (₹2775/qlt) and Jodhpur (₹2755/qlt) show comparatively higher farm harvest prices, which may be due to limited supply or higher transportation and transaction costs. Udaipur (₹2518/qlt) and Dungarpur (₹2274/qlt) also exhibit moderate prices aligned with their production levels.

Table-2 Bajra productivity performance in Rajasthan districts

Districts	Kg/Hectare	Districts	Kg/Hectare
Karoli	2306	Jaisalmer	309
Dholpur	2286	Jodhpur	798
Alwar	2082	Jalore	899

Bajra productivity in Rajasthan shows in Table-2 a clear regional imbalance. Higher yields were observed in eastern districts like Karauli (2306 kg/ha), Dholpur (2286 kg/ha), and Alwar (2082 kg/ha) due to better rainfall and soil conditions. In contrast, western desert districts such as Jaisalmer (309 kg/ha), Jodhpur (798 kg/ha), and Jalore (899 kg/ha) record very low productivity because of arid climate and dependence on erratic rainfall. This highlights a strong east–west disparity in bajra cultivation.

Another important dimension was the variation in soil types and natural resource endowments. Fertile alluvial soils in eastern districts support intensive cultivation, whereas sandy soils in desert areas limit crop choices and productivity. These natural constraints were further compounded by socio-economic factors such as differences in landholding size, access to credit, education levels, and adoption of technology. Farmers in developed regions were better positioned to invest in inputs like fertilizers, machinery, and improved seeds, thereby reinforcing regional advantages.

Infrastructure also plays a critical role in widening or reducing disparities. Regions with better access to roads, markets, storage, and extension services tend to experience faster agricultural growth. Conversely, remote and underdeveloped areas face constraints in marketing their produce and accessing institutional support, which limits their development prospects. Over time, these cumulative advantages and disadvantages create a core–periphery pattern of agricultural development within the state.

Conclusion

Regional disparities in Rajasthan’s agriculture can thus be understood as the outcome of an interaction between natural factors (such as climate and soil) and institutional factors (such as irrigation, technology, and infrastructure). The data suggest that while productivity was largely influenced by irrigation and agro-climatic conditions. Addressing these disparities requires region-specific development strategies that focus on improving resource access, enhancing productivity in rainfed areas, and ensuring more balanced agricultural growth across regions.

Data source

Rajasthan Agriculture Statistics at a glance- 2022-23