

Prioritization of low food grains productivity districts

for rural development planning in India

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Agriculture is the mainstay of many rural economies, ensuring food and nutritional security, employment, livelihoods, and economic development. The agricultural productivity of a country plays a crucial role in determining its people's prospects, as it significantly contributes to eradicating hunger, poverty, and inequality. Despite the remarkable growth of the agriculture sector, there is still a need for increased agricultural productivity in several districts and agro-climatic zones (ACZs). One hundred twenty-two districts yield less than 1.5 t/ha food grain productivity. Therefore, prioritizing districts with low food grain productivity is crucial to bringing underdeveloped ones into development.

Keywords: Agricultural productivity, Inclusive development, Prioritising

THE agriculture sector is among the largest employment-providing sectors in the country, though the share of the agriculture sector in the gross domestic product (GDP) has declined from 55% in 1950/51 to 18.8% (Gross value added at current prices) in 2019/2020 (PIB 2022). About 50% of the population is directly or indirectly dependent on agriculture for their livelihood, and it is the mainstay of many rural economies, ensuring food and nutritional security, employment, livelihoods, and economic development. Thus, it is considered the backbone of the Indian economy because of its kaleidoscopic nature and cascading effect on the economy. According to the World Bank, agriculture can help reduce poverty, raise incomes, and improve food security for 80% of the world's poor, who live in rural areas and work mainly in farming.

India has a net sown area of 141 Mha for agriculture, which has been crucial for rural livelihoods as well as food and nutritional security amidst a growing population. Its annual growth rate was about 3.2

from 1980/81 to 2019/20, almost double the population growth (1.7) during the same period. In the past, the robust package of technology, extension, and price support policy of the Government has stimulated healthy sector growth and imparted good results. As a result, India has transformed to a food surplus and export-oriented country from a food-deficit country.

India is among the top rice, wheat, sugarcane, and cotton producers. It is also the highest producer of milk and the second largest producer of fruit and vegetables, third in egg production, and eighth in meat production. Even though agricultural food grain yield has increased more than four times since 1950-51, there is still considerable scope for improvement as the yield, except for wheat, is below the world average and much lower than in agriculturally developed countries like China, Brazil, and the United States. Further, there is a significant variation in crop productivity across states and districts within India. The 'Doubling Farmers' Income' approach emphasizes increasing

crop productivity as it directly impacts farmers' income. Therefore, improving crop productivity is crucial for improving farmers' income and ensuring their livelihood security, particularly in districts and different agro-climatic zones where crop productivity is low. Agricultural productivity affects the district's prospectus for growth and market competitiveness, expenditure and saving, and use of scarce resources, along with ensuring food security, which reduces poverty and increases welfare through income improvement. Hence, identify and prioritize low agriculture productivity districts for inclusive and sustainable development.

Identification of low-food grain productivity district

District-wise secondary data on crop productivity during 2018-19 were obtained from the Directorate of Economics and Statistics (DES), Department of Agriculture and Farmers Welfare, GoI. We calculated the productivity district-wise individually, considering all the major food grain crops in the district.

Low food grain productivity districts were identified using criteria of 30% less crop productivity concerning all-India average productivity (2.3 t/ha). Thus, districts having food grain productivity less than 1.5 t/ha are considered as low food grain productivity districts. State-wise distribution of low agricultural productive districts is provided in Table 1, and results show that 122 districts are identified as the country's low food grain productivity district. The maximum number of low-productive districts (25), are found in Maharashtra, followed by Chhattisgarh, Karnataka, and Rajasthan. The observation of the number of low-food grain productivity districts in different agro-climatic zones (ACZs) shows that ACZ 7, 10, and 12 have low food grain productivity due to possible reasons, including larger areas under rainfed farming, deficient in water resources, plateau structure, and low cropping intensity.

State-wise number of aspirational districts and low-food grain districts

There is a need to reduce regional disparity through proper policy planning for balanced development. Further, the Planning Commission of India had identified 112 aspirational districts based on 49 Key Performance Indicators under five broad socio-economic themes viz. Health and nutrition, Education, Agriculture and water resources, Financial inclusion and skill development, and Infrastructure. Ten indicators were identified for agriculture, and overall 20% weightage was allocated to agriculture for calculating ranking focusing on outputs (yield, price realization, etc.), inputs (quality seed distribution, soil health cards), and institutional support (crop insurance, electronic markets, artificial insemination, animal vaccination, etc.). The weightage for agriculture productivity was given only 1%. These districts were compared with the low agricultural productivity districts identified in this study to know how many of these districts are covered under

aspirational districts programs. A state-wise comparison of these districts is presented. Results show that out of 122 districts, only 28 were covered under aspirational districts.

Though only 1% weightage was given to agricultural productivity in the score developed for identifying aspiration districts (most backward districts) in India, about 25% of the total low agricultural productivity identified in the study was covered in the aspirational districts. It suggests that agricultural productivity is vital for achieving the country's egalitarian objective of inclusive growth and sustainable

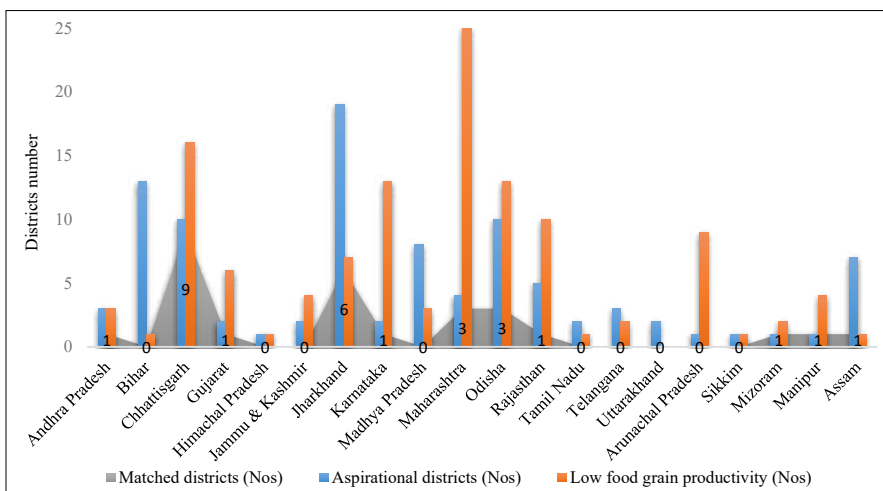
growth and development. Growth in the agriculture sector is two to four times more effective in raising incomes among the poorest than other sectors (World Bank, Undated).

Prioritizing low-food grain productivity districts

Prioritizing low-food grain productivity districts is important for several reasons. First, it can improve food grain production, as low-food grain productivity districts are more likely to face food insecurity because the yield gap in these districts is at least 0.8t/ha. Second, these districts

Table 1. State-wise low food grains productivity (<1.5 t/ha) districts

State	No. of districts	ACZs	Districts
Andhra Pradesh	3	10	Anantapur, YSR District (Kadapa), Prakasam
Bihar	1	4	Madhubani
Chhattisgarh	16	7	Narayanpur, Kabirdham, Jashpur, Bijapur, Sukma, Dantewada, Kondagaon, Kanker, Rajnandgaon, Bemetara, Baloda Bazar, Mahasamund, Surguja, Korba, Surajpur, Surajpur
Gujarat	6	13	Devbhumi Dwarka, Bharuch, Chhotaudepur, Kutch, Narmada, Porbandar
Himachal Pradesh	1	1	Kinnaur
Jammu and Kashmir	4	1	Kishtwar, Doda, Ramban, Reasi
Jharkhand	7	7	West Singhbhum, Garhwa, Khunti, Koderma, Latehar, Palamu, Sahibganj
Karnataka	13	10, 12	Dharwad, Gadag, Gulbarga, Ramanagara, Vijayapura, Bagalkot, Chikballapur, Chikmagalur, Chitradurga, Kolar, Koppal, Raichur, Tumkur
Madhya Pradesh	3	7	Agar Malwa, Anuppur, Dindori
Maharashtra	25	7, 9	Amravati, Chandrapur, Dhule, Jalgaon, Nagpur, Nandurbar, Palghar, Satara, Wardha, Yavatmal, Ahmednagar, Akola, Aurangabad, Beed, Buldhana, Hingoli, Jalna, Latur, Nanded, Osmanabad, Parbhani, Pune, Sangli, Solapur, Washim
Odisha	13	7, 11	Balangir, Bargarh, Nuapada, Anugul, Dhenkanal, Ganjam, Jagatsinghapur, Jajpur, Kendrapara, Khordha, Nayagarh, Puri, Sambalpur
Rajasthan	10	6, 8, 14	Churu, Pali, Jaisalmer, Jalore, Jodhpur, Nagaur, Sikar, Ajmer, Tonk, Bikaner
Tamil Nadu	1	10	Namakkal
Telangana	2	10	Nagarkurnool, Ranga Reddy
Uttarakhand	7	1	Almora, Bageshwar, Chamoli, Pauri Garhwal, Pithoragarh, Rudra Prayag, Uttar Kashi
Arunachal Pradesh	9	2	Anjaw, Dibang Valley, Lower Dibang Valley, East Kameng, Kra Daadi, Kurung Kumey, Lower Siang, Tirap, West Kameng
Sikkim	1	2	North Sikkim
Mizoram	2	2	Lunglei, Mamit
Manipur	4	2	Chandel, Churachandpur, Tamenglong, Ukhrul
Assam	1	2	Dhemaji
India	122		



State-wise number of aspirational districts and districts identified based on low food grain productivity

often face high poverty; increasing agricultural productivity and improving access to basic services can reduce poverty. Third, it can reduce regional disparities and ensure that people in these areas can access the same opportunities as those in more prosperous areas. Fourth, districts with low food grain productivity are often vulnerable to environmental degradation due to unsustainable agricultural practices and climate change and its impact. Improving agricultural productivity using sustainable agriculture practices can reduce the adverse impact of climate change, protect the environment, and support long-term food security. Thus, prioritizing low-food grain productivity districts is important for addressing poverty, food insecurity, environmental sustainability, climate resilience,

and promoting inclusive growth.

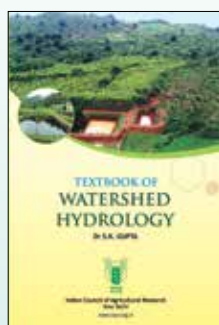
Low crop productivity in these districts may be due to low and erratic rainfall, inadequate water resources, poor soil quality, and undulated farmland. To increase crop yield and reduce production risk, efficient water management, *in-situ* water conservation, and rainwater storage structures for supplementary irrigation can be employed. Other factors that affect agricultural productivity include the availability of quality agricultural inputs like seeds and fertilizers, biotic and abiotic stress varieties, access to agricultural credit, and crop insurance. Therefore, policymakers should focus on developing low agricultural productivity districts by emphasizing the key factors influencing agricultural productivity.

Way forward

Although the agriculture sector has made impressive progress, several districts in different Agro-climatic zones (ACZs) have less than 1.5t/ha food grain productivity. Therefore, it is necessary to prioritize these districts to reduce inter-district disparity and promote sustainable agricultural development through proper policy planning. Improving agriculture productivity requires multifaceted approaches and policies such as access to and training on improved packages of practices, efficient water management, research investment, infrastructure development, sustainable agricultural practices, and access to credit and financial support. Further, the following specific recommendations should be considered to improve food grain productivity. First, there should be substantial investment in efficient water management technologies and developing high-yielding, insect pest- and disease-resistant, and stress-tolerant varieties to bridge the yield gap in these districts. Additionally, strengthening the quality seed delivery systems and extension services for the package of practices of food grain production is also essential to achieving the yield potential of crop varieties.

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