

¹College of Community Science, PJTSAU, Hyderabad ²Farm Machinery and Power Engineering, AECRI, TNAU, Coimbatore Food production in India is a critical component of the country's economy and sustenance, driven by its vast agricultural sector. India's diverse climate and geography support the cultivation of a wide variety of crops. The United Nations Food and Agricultural Organization (FAO) projects that food and feed production will need to increase by 70 percent by 2050 to meet the world's food needs.

India's food production faces challenges, despite being one of the largest producers agricultural globally. challenges can be categorized into various aspects. Small and fragmented landholdings make it difficult to achieve economies of scale. This leads to inefficient farming practices and lower productivity. Many crops, particularly in arid and semi-arid regions, rely heavily on irrigation. Water scarcity limits the availability of water for irrigation, leading to reduced crop yields and productivity. Overuse of chemical fertilizers and pesticides has led to soil degradation, reducing fertility and leading to lower yields. Soil erosion, due to deforestation and unsustainable farming practices, also contributes to declining productivity. Poor infrastructure for storage, transportation, and marketing of agricultural produce leads to significant post-harvest losses. Lack of cold storage facilities and poor transportation networks mean that a substantial portion of food gets wasted before reaching consumers. Many farmers in India still rely on traditional farming methods. Limited access to modern technology and mechanization hampers productivity. There is also a digital divide that restricts farmers from accessing information on weather forecasts and best farming practices. Limited access to credit and insurance hampers the ability of farmers to invest in high-quality seeds, fertilizers, and modern equipment. The presence of informal moneylenders also subjects farmers to high-interest rates and debt traps. Climate change poses a growing





threat with changing rainfall patterns, increased frequency of droughts, floods, and other extreme weather events, which severely impact crop yields and food production stability. Labor shortages can delay planting and harvesting, leading to suboptimal growing conditions. Crops may be planted too late in the season, reducing yields, or harvested late, resulting in spoilage.

Addressing these problems requires a multifaceted approach involving technological advancements, infrastructure development, sustainable farming practices, improving farmer education are also crucial to overcoming the challenges faced by India's food production system.

The Government of India is implemented National Food Security Mission (NFSM) in the country for increasing production of rice, wheat, coarse cereals, nutri cereals (Shree Anna) and pulses. National Food Security Mission (NFSM) is a Centrally Sponsored Scheme launched in 2007. Thrust areas

of NFSM are sustainable increase in the production of targeted crops such as rice, wheat, pulses primarily and then extended to coarse cereals, nutri-cereals, and oilseeds as well. Restoration of soil fertility and productivity at the individual farm level. Rise in farm level net income.

Under NFSM, assistance is given through State/UT to the farmers for interventions like: Promoting the use of HYV seeds to boost crop production. Providing subsidies for the purchase of farm machinery to reduce labor costs and enhance productivity. Supporting eco-friendly pest control measures and fertilizers to reduce crop losses. Assistance in post-harvest processes like storage, processing, and marketing to reduce postharvest losses. Demonstrations might include techniques of intercropping and conservation farming. These interventions aim to enhance agricultural productivity, ensure food security, and improve the livelihoods of farmers.

THERE ARE VARIOUS GOVERNMENT **SCHEMES ARE IMPLEMENTED TO** PROMOTE AGRICULTURE IN INDIA

> Soil Health Card Scheme:

The Soil Health Card scheme was launched in 2015. Soil Health Cards are issued to all farmers under this scheme. These cards provide information regarding nutrient status of the soil. Based on this information, farmers can ascertain the dosage of nutrients required for improve their soil fertility. SHC is a printed report that a farmer will be handed over for each of his holdings. It will contain the status of his soil with respect to 12 parameters, namely N,P,K (Macronutrients); S (Secondary- nutrient); Zn, Fe, Cu, Mn, Bo (Micro - nutrients); and pH, EC, OC (Physical parameters).

Gramin Bhandaran Yojana

Gramin Bhandaran Yojana, also known as the Rural Godown Scheme, is an initiative by the Indian government aimed at developing rural storage infrastructure. Launched by the Ministry of Agriculture and Farmers Welfare in 2001-02, this scheme helps farmers and rural entrepreneurs to create scientifically designed storage facilities that can store farm produce, processed farm products, and agricultural inputs.

Pradhan Mantri Fasal Bima Yojana (PMFBY) - Crop insurance

The PMFBY launched in 2016. To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crops as a result of natural calamities, pests & diseases. Farmer has to be pay maximum premium of 1.5% for Rabi and 2% for Kharif crops and 5% for horticulture crops. The remaining premium is shared equally by the Center and State Governments. Claims are settled promptly based on yield data and timely intimation by the farmer.

> Pradhan Mantri Krishi Sinchai Yojana (PMKSY) – Agriculture **Irrigation**

This scheme was launched in 2015. The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been formulated with the vision of extending the coverage of irrigation 'Har Khet ko pani'. The aim is to ensure that every farm gets sufficient water through efficient water distribution and management practices. Promoting precision irrigation technologies like drip and sprinkler irrigation to conserve water and reduce wastage.

Paramparagat Krishi Vikas Yojana (PKVY) – Agriculture **Development**

This scheme promotes organic farming in the country. Organic farming improves soil health and organic matter content. Further, the organic produce increases the ability of the farmer to charge premium prices. It supports farmers in getting their produce certified as organic, which can help them fetch better prices in the market. The scheme also facilitates the creation of market linkages for organic produce.

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Estimates of production of major crops is released by the Department of Agriculture, Ministry of Agriculture and Farmers Welfare. The production of most of the crops for the agricultural year 2022-2023 has been estimated higher than in the year of 2021-2022.

2019-2020	2020-2021	2021-2022	2022 - 2023	
			Target	Third Advance estimates
1188.70	1243.68	1294.71	1305.00	1355.42
1078.61	1095.86	1077.42	1120.00	1127.43
172.61	180.21	160.00	205.00	171.49
230.25	254.63	273.02	295.50	275.04
332.19	359.46	379.63	413.45	409.96
3705.00	4053.99	4394.25	4150.00	4942.28
	1188.70 1078.61 172.61 230.25 332.19	1188.70 1243.68 1078.61 1095.86 172.61 180.21 230.25 254.63 332.19 359.46	1188.70 1243.68 1294.71 1078.61 1095.86 1077.42 172.61 180.21 160.00 230.25 254.63 273.02 332.19 359.46 379.63	Target 1188.70 1243.68 1294.71 1305.00 1078.61 1095.86 1077.42 1120.00 172.61 180.21 160.00 205.00 230.25 254.63 273.02 295.50 332.19 359.46 379.63 413.45

PRODUCTION OF IMPORTANT CROPS IN THREE LARGEST PRODUCING STATES IN 2023 - 2024

Groups of Crops	States	Production	Percent share of production to all india
Rice	Telangana	16.63	12.17
	Uttar Pradesh	15.72	11.50
	West Bengal	15.12	11.06
Wheat	Uttar Pradesh	35.43	31.38
	Madhya Pradesh	21.28	18.84
	Punjab	17.78	15.75
Maize	Kamataka	5.49	15.39
	Bihar	4.61	12.93
	Madhya Pradesh	4.33	12.14
Total Nutri-cereals	Rajasthan	8.03	14.66
	Kamataka	7.61	13.90
	Madhya Pradesh	5.49	10.02
Total pulses	Madhya Pradesh	6.18	25.23
	Maharashtra	4.00	16.33
	Rajasthan	3.63	14.83

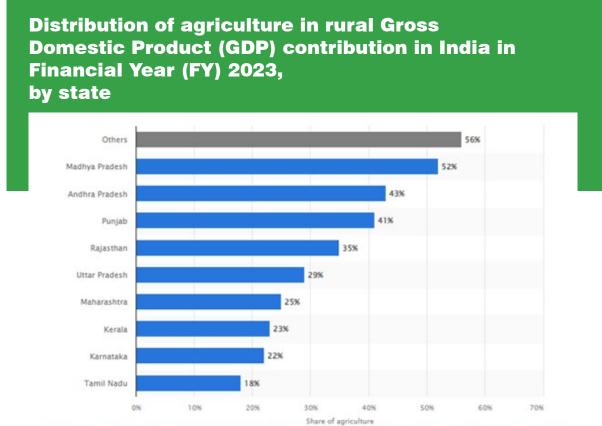
Source: ES&E Division, Department of Agriculture and Farmers Welfare. * As per 3rd Advance Estimates

*Production in million tonnes

Groups of Crops	States	Production	Percent share of production to all india	
Total Food Grains	Uttar Pradesh	59.29	18.03	
	Madhya Pradesh	39.84	12.12	
	Punjab	32.59	9.91	
Total oil seeds	Rajasthan	9.57	24.17	
	Madhya Pradesh	8.37	21.15	
	Gujarat	7.19	18.15	
Sugar cane	Uttar Pradesh	205.56	46.45	
	Maharashtra	112.09	25.33	
	Kamataka	41.81	9.45	
Cotton@	Gujarat	9.06	27.86	
	Maharashtra	8.05	24.74	
	Telangana	5.08	15.62	
Jute S	West Bengal	7.87	80.97	
A STATE OF THE STA	Bihar	0.99	10.15	
	Assam	0.68	7.05	

@ Production in million bales of 170 kg. each.

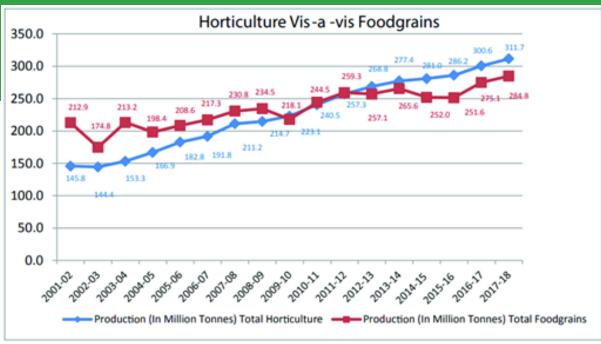
\$ Production in million bales of 180 kg. each.



The central state of Madhya Pradesh had the highest rural GDP contribution of agriculture at 52 percent. Source: *Statista, 2023

HORTICULTURE PRODUCTION

As per the 2nd advance estimates for 2022-23, the total horticulture production is estimated to be 351.92 Million Tonne, surpassing the total foodgrain production of 329.69 Million Tonne during the year. At present, India is the second largest producer of vegetables and fruits in the world. Country ranks first in the production of number of crops like Banana, Lime & Lemon, Papaya, Okra.





HORTICULTURE PRODUCTION FROM 2021 TO 2023 - MILLION TONNES

S.No	State/UTs	2020-2021	2021-2022	2022-2023
1.	Uttar Pradesh	408.14	440.95	462.05
2.	Madhya Pradesh	337.04	353.14	372.91
3.	West Bengal	348.62	332.07	354.82
4.	Maharashtra	267.98	307.74	299.82
5.	Andhra Pradesh	267.66	259.99	276.93
6.	Gujarat	242.07	262.43	256.43
7.	Bihar	225.95	229.58	231.98
8.	Tamil Nadu	188.79	208.50	213.50
9.	Karnataka	220.48	220.53	197.84
10.	Odisha	129.58	129.49	134.78

