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The Efficiency Of Land Utilization And Agricultural Productivity In India

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ABSTRACT

India's agriculture sector plays a significant role in the country's economy, supporting over 1.4 billion people and providing employment to approximately 58% of the population. It contributes about 19 to 20% to the country's GDP. Government spending on agriculture increased from ₹. 1,22,836 crores in 2022-23 to ₹. 1,25,036 crores in 2023-24 and was estimated at ₹. 1,22,529 crore for 2024-25. Land classification includes forests (72,021), non-agricultural uses (27,845), and a net area sown of 140,705. The total agricultural land is 179,982, with cultivated land at 154,203 and a cropping intensity of 155.9%. Food grain production consistently rose from 2975.04 lakh tonnes to 3322.95 lakh tonnes, while commercial crop production generally increased from 3705.00 lakh tonnes to 4531.58 lakh tonnes, peaking at 4905.33 lakh tonnes in 2022-23 before declining in 2023-24. Despite challenges like climate volatility and soil depletion, government initiatives in technology, infrastructure, and farmer support are boosting incomes and enhancing food security. The government aims to modernize the sector, increase farmer incomes, and strengthen the agricultural value chain through policy, investment, and digital integration.

Key words: *Classification of land, crop production, yield, production of food grains and commercial crops.*

INTRODUCTION

Agriculture is the backbone of India's economy, providing livelihoods to a majority of the population. More than 60 percent of India's population earns a living from agriculture, as it provides employment to around 58 percent of people (GOI). Given agriculture's immense contribution, the sector requires special policy attention and support to sustain growth. In recent years, India's focus has shifted more towards industrial advancement, which has led to a decline in agriculture's contribution to GDP. Therefore, revitalizing the agricultural sector's growth is critical. The government plays a vital role in developing the agricultural sector by providing various kinds of financial and technical support. These efforts aim to ensure food self-sufficiency, provide technical assistance to small-scale producers for adopting modern technologies, maintain price stability, boost employment generation, and increase farmer incomes. The government forms various policies to support agriculture, including input subsidies (fertilizer, electricity, seeds) to lower costs, minimum support price (MSP) mechanisms, concessional trade

policies for import-export of farm products, and direct income transfers. Overall, agricultural land classification, irrigated area and area under crops, area, production and yield of major crops and the production of food grains and commercial crops refer to financial transfers given by the government to farmers and agribusinesses with the aim of enhancing farm incomes.

Land classification and their areas in thousand hectares include forests (72,021), non-agricultural uses (27,845), barren & unculturable land (16,554), permanent pastures & other grazing lands (10,248), culturable wasteland (11,659), land under misc. Tree crops (2,992), fallow land other than current fallows (11,128), current fallow (13,498), and net area sown (140,705). An agricultural land total 179,982, cultivated land is 154,203, and cropping intensity is 155.9%.

Major irrigation sources are tube wells (39,134 units) and government canals (17,959 units). Other sources include other wells (10,672 units), other sources (9,147 units), and tanks (2,235 units). The total irrigated area from canals (government and private) is 18,124 units. Net irrigated area is 79,312 units, and gross irrigated area is 122,294 units. Irrigation intensity is 55.8% of the gross cropped area, and 56.4% of the net area sown is covered by net irrigated area.

Total area under crops area is 219,357 units. Food crops (160,244 units) significantly outweigh non-food crops (59,113 units). Food grains (136,309 units) dominate food crop production, with cereals & millets (108,781 units) being more prominent than pulses (27,528 units). Rice (49,527 units) is the largest cereal crop. Non-food crops include oilseeds (33,181 units), sugarcane (6,794 units), and cotton (13,009 units).

Crop production trends include rice production increased from 1294.71 lakh tonnes to 1378.25 lakh tonnes, with yield rising from 2798 kg/hectare to 2882 kg/hectare. Wheat production increased from 1077.42 lakh tonnes to 1132.92 lakh tonnes, and yield from 3537 kg/hectare to 3559 kg/hectare. Nutri/coarse cereals production grew from 511.01 lakh tonnes to 569.36 lakh tonnes, with yield improving from 2251 kg/hectare to 2283 kg/hectare. Pulses area and production declined, with area reducing from 307.31 to 275.05 lakh hectares and production from 273.02 to 242.46 lakh tonnes. Yield decreased from 888 kg/hectare to 881 kg/hectare. Food grains (total) production increased from 3156.16 lakh tonnes to 3322.98 lakh tonnes, and yield rose from 2425 kg/hectare to 2515 kg/hectare. Sugarcane production increased from 4394.25 to 4531.58 lakh tonnes, though yield slightly decreased from 84906 kg/hectare to 78953 kg/hectare.

Food grains production includes total food grains consistent increase from 2975.04 lakh tonnes to 3322.95 lakh tonnes. Rice steadily increased from 1188.70 lakh tonnes to 1378.25 lakh tonnes. Wheat increased from 1078.61 lakh tonnes to 1132.92 lakh tonnes, with a dip in 2021-22. Coarse cereals & shree anna/nutri cereals increased from 304.88 lakh tonnes to a peak of 399.98 lakh tonnes in 2022-23, and then slightly decreased to 393.64 lakh tonnes in 2023-24. Shree anna/nutri cereals notably dropped to 160.00 lakh tonnes in 2021-22 before recovering. Total pulses fluctuated, peaking at 273.02 lakh tonnes in 2021-22 and declining to 242.42 lakh tonnes in 2023-24.

Commercial crops production overall trend showed a general increase from 3705.00 lakh tonnes to 4531.58 lakh tonnes, with a peak of 4905.33 lakh tonnes in 2022-23. Sugarcane increased initially but declined after 2020-21, dropping from 4053.99 lakh tonnes to 325.22 lakh tonnes in 2023-24. Cotton fluctuated, starting at 360.65 lakh tonnes in 2019-20, dropping to 311.18 lakh tonnes in 2021-22, and recovering slightly to 325.22 lakh tonnes in 2023-24. Jute & mesta remained relatively stable, ranging from 93.54 lakh tonnes to 101.49 lakh tonnes.

There were some major problems associated with the climate change and erratic weather, leading to water scarcity, soil degradation, and impacts on crop yields. Other key issues are rising production costs, particularly for inputs like fertilizers, and low farm incomes, often exacerbated by the cost of debt and volatile market prices. Slow technological adoption, fragmentation of land holdings, labor shortages, and a

lack of adequate infrastructure and credit access also hinder farmers. The government initiatives include the digital agriculture mission to create a digital public infrastructure for farmers, the launch of the national mission on natural farming (NMNF) to promote sustainable practices. Other efforts include enhancing farmer financial security through programs like the PM-Kisan Samman Nidhi and the Pradhan Mantri Fasal Bima Yojana, and implementing schemes for crop insurance and irrigation.

OBJECTIVES

1. To discuss the classification of land and utilization of crops area in India.
2. To enumerate the performance of area, production and yield of major crops in India
3. To study the performance of production of food grains and commercial crops in India.

LAND CLASSIFICATION AND AREA UNDER CROPS IN INDIA

The details of important parameters of land use statistics for the year 2022-23 (thousand hectares, presents a classification of land based on its utilization, offering insights into land use patterns and agricultural practices for the specified year presented table-1.

The classification is organized under (A) classification of land and details various categories of land use within the reporting area for land utilization statistics (1 to 9), which totals 306,650 thousand hectares.

Forests (72,021 thousand hectares) represents land officially classified as forest area, playing a crucial role in ecological balance, biodiversity, and resource provision. Area put to non-agricultural uses (27,845 thousand hectares) includes land used for buildings, roads, railways, industries, and other non-agricultural purposes. It reflects the extent of urbanization and industrial development. Barren & unculturable land (16,554 thousand hectares) refers to land that cannot be brought under cultivation with existing technology, such as deserts, mountains, and rocky areas. Permanent pastures & other grazing lands (10,248 thousand hectares) is primarily used for grazing livestock, essential for animal husbandry and related agricultural activities. Culturable wasteland (11,659 thousand hectares) includes land that is available for cultivation but is not being cultivated due to various reasons like lack of water, salinity, or other constraints. It holds potential for future agricultural expansion. Land under misc. Tree crops (2,992 thousand hectares) includes land under orchards, plantations, and other tree crops not classified as forests. Fallow land other than current fallows (11,128 thousand hectares) refers to land left uncultivated for a period of more than one agricultural year but less than five years, allowing for soil recovery. Current fallow (13,498 thousand hectares) is land left uncultivated for a short period (one agricultural year or less) to regain fertility. Net area sown (140,705 thousand hectares) represents the actual area of land under cultivation in a given year. It is a key indicator of agricultural activity.

Out of which intensities agricultural land (5+6+7+8+9) (179,982 thousand hectares) is aggregates the culturable wasteland, land under miscellaneous tree crops, fallow lands, and net area sown, representing the total land available for various forms of agriculture. Cultivated land (8+9) (154,203 thousand hectares) specifically combines current fallow land and net area sown, providing a measure of the land actively used for cultivation, including short-term fallows. Cropping intensity (155.9% of total cropped area over net area sown) is crucial metric indicates the efficiency of land use in agriculture. A cropping intensity greater than 100% suggests that some land is sown more than once in an agricultural year (double-cropping), leading to higher agricultural output from the same net sown area.

The classification is organized under (B) the table classifies land based on irrigated area, specifically categorizing the sources of irrigation and then summing these areas to determine the total irrigated land. This classification is crucial for understanding agricultural land use and water resource management.

Government canals represent land irrigated by large-scale canal systems managed by government bodies. These often serve extensive agricultural areas and are a significant source of irrigation, as indicated by the highest value (17,959) in the table under this category. Private canals refer to land irrigated by smaller canal systems developed and maintained by private entities or communities. The relatively smaller value (165) suggests a more localized or supplemental role compared to government canals. Tanks include land irrigated by traditional water storage structures like tanks or reservoirs. Tanks play a vital role in rain-fed areas and for water harvesting. The value of 2,235 indicates a substantial, though not primary, source of irrigation in this context. Tube wells represents land irrigated by groundwater extracted through tube wells. The highest value (39,134) among individual sources highlights the dominant role of groundwater extraction, likely due to their flexibility and direct access to water for individual farmers. Other wells encompass land irrigated by traditional open wells, distinct from tube wells. The value of 10,672 indicates a significant contribution from this traditional groundwater source. Other sources is a broad category encompassing any other less common or miscellaneous irrigation methods not explicitly listed, such as lift irrigation from rivers, temporary diversions, etc. The value of 9,147 suggests these diverse methods collectively contribute a notable amount to the irrigated area.

Aggregated irrigated area classifications of the total canals (1+2) is a calculated sum of government and private canal irrigated areas (17,959+165 = 18,124), providing a comprehensive view of canal-based irrigation. Net irrigated area (3+4+5+6+7) crucial classification represents the total area irrigated at least once in a year, regardless of the source or how many times it was irrigated in that year. It is the sum of all individual irrigation source categories (canals, tanks, tube wells, other wells, other sources), resulting in a total of 79,312. Gross irrigated area refers to the total area under crops irrigated once or more than once in a year, counting the area as many times as it was cropped and irrigated. The value of 122,294, significantly higher than the net irrigated area, indicates the prevalence of multiple cropping and repeated irrigation on the same land within a year.

Table-1

Details of important parameters of Land Use Statistics for the year 2022-23 (Thousand hectares)

A) Classification of land		
	Reporting area for land utilization statistics (1 to 9)	306650
1	Forests	72021
2	Area put to non-agricultural uses	27845
3	Barren & unculturable land	16554
4	Permanent pastures& other grazing lands	10248
5	Culturable Wasteland	11659
6	Land under Misc. tree Crops	2992
7	Fallow Land Other than Current Fallows	11128
8	Current Fallow	13498
9	Net Area Sown	140705
	Agricultural Land (5+6+7+8+9)	179982
	Cultivated Land (8+9)	154203
	Cropping Intensity (% of Total cropped Area over Net Area Sown)	155.9
B) Irrigated Area		

1	Government Canals	17959
2	Private Canals	165
3	Total Canals (1+2)	18124
4	Tanks	2235
5	Tube wells	39134
6	Other wells	10672
7	Other Sources	9147
	Net Irrigated Area (3+4+5+6+7)	79312
	Gross Irrigated Area	122294
	% of Gross Irrigated Area over Gross Cropped Area	55.8
	% of Net Irrigated Area over Net Area Sown	56.4
C) Area under crops		
	Total Food grains	136309
	Total Cereals& Millets	108781
	Rice	49527
	Wheat	34994
	Total Pulses	27528
	Total Condiments and Spices	4598
	Total Fruits & Vegetables	12024
	Total Food Crops	160244
	Total Oilseeds	33181
	Sugarcane	6794
	Cotton	13009
	Total non food crops	59113
	Total Cropped Area	219357

Source: Land Use Statistics for 2022-23, Agriculture Census Unit, Economics, Statistics & Evaluation Division, DA&FW.

55.8% of gross irrigated area over gross cropped area is percentage signifies the proportion of the total cultivated land that receives irrigation over the total area on which crops are grown in a year (gross cropped area). It provides insight into the overall intensity of irrigation in relation to cropping patterns. 56.4% of net irrigated area over net area sown the percentage indicates the proportion of the unique land area brought under irrigation (net irrigated area) in relation to the total unique land area cultivated in a year (net area sown). This metric highlights the extent of land covered by irrigation infrastructure and practices.

In essence, the table presents a detailed classification of land based on its irrigated status, breaking it down by specific water sources and then aggregating these into key metrics of net and gross irrigated areas. The percentages further contextualize the role of irrigation within the broader agricultural landscape.

The classification is organized under (c) is the area under crops presents a breakdown of the total cropped area by different crop categories and specific crops.

The overall total cropped area is 219357 units (likely in hectares or similar agricultural area units, though not specified in the table). Dominance of total food crops account for 160244 units, significantly more than total non food crops at 59113 units. This indicates a primary focus on food production in the area represented by this data. Food grains as major food crop total food grains constitute the largest share at 136309 units. Cereals & millets vs. Pulses total cereals & millets (108781 units) are cultivated over a much larger area compared to total pulses (27528 units). Rice as the largest cereal crop among cereals, rice (49527 units) occupies the largest area, followed by wheat (34994 units). Other food crop categories total condiments and spices (4598 units) and total fruits & vegetables (12024 units) represent smaller but still

significant portions of the food crop area. Oilseeds and sugarcane in non-food crops total oilseeds (33181 units) and sugarcane (6794 units) are the major components within total non food crops, with cotton (13009 units) also being a notable non-food crop.

PERFORMANCE OF PRODUCTION AREA, CROP PRODUCTION AND YIELD

Table-2 provides a comprehensive overview of the Area, Production, and Yield of major crops in India for the agricultural years 2021-22, 2022-23, and 2023-24, highlighting significant trends across various crop categories. Cotton production is measured in lakh bales of 170 kg each, while Jute & Mesta production is in lakh bales of 180 kg each.

Rice Area Shows a slight increase from 462.79 lakh hectares in 2021-22 to 478.32 in 2022-23, then a minor decrease to 478.28 in 2023-24. While the Production Experienced a consistent increase, from 1294.71 lakh tonnes in 2021-22 to 1378.25 lakh tonnes in 2023-24, indicating positive growth and Yield Also saw a steady rise, improving from 2798 kg/hectare to 2882 kg/hectare over the three years, reflecting enhanced productivity.

Wheat Area demonstrated a gradual increase, from 304.59 lakh hectares in 2021-22 to 318.33 in 2023-24. While production followed the area trend with a steady rise, increasing from 1077.42 lakh tonnes to 1132.92 lakh tones and Yield Maintained a strong upward trend, moving from 3537 kg/hectare to 3559 kg/hectare, indicating improved agricultural practices or favorable conditions.

Nutri/Coarse Cereals Area Witnessed an increase from 227.00 lakh hectares in 2021-22 to 249.38 in 2023-24.but the production saw significant growth, rising from 511.01 lakh tonnes to 569.36 lakh tones and yield increased from 2251 kg/hectare to 2283 kg/hectare, showing productivity gains in this sector.

Pulses Area & Production showed a declining trend over the three years, with area decreasing from 307.31 to 275.05 lakh hectares and production from 273.02 to 242.46 lakh tones and yield also experienced a reduction, from 888 kg/hectare to 881 kg/hectare, highlighting challenges in maintaining pulse productivity during this period.

Food grains total area remained relatively stable around 1300-1320 lakh hectares. While production increased from 3156.16 lakh tonnes in 2021-22 to 3322.98 lakh tonnes in 2023-24, indicating overall growth in foodgrain output and yield showed a positive trend, increasing from 2425 kg/hectare to 2515 kg/hectare.

Oilseeds area & production showed fluctuations, with a peak in 2022-23 before a slight decline in 2023-24. While yield maintained a relatively stable yet slightly fluctuating yield per hectare.

Sugarcane area & production displayed a general increasing trend, particularly in production, which rose from 4394.25 to 4531.58 lakh tonnes. While yield experienced a slight decrease from 84906 kg/hectare to 78953 kg/hectare, suggesting some challenges in maintaining yield despite area and production increases. Cotton & Jute & Mesta area & production showed minor fluctuations across the three years for both crops, with yield also exhibiting slight variations.

Table-2

Area, production and yield of major Crops during 2021-22 to 2023-24

Crops	Area (Lakh hectare)			Production (Lakh Tonnes)			Yield (kg/hectare)		
	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
Rice	462.79	478.32	478.28	1294.71	1357.55	1378.25	2798	2838	2882
Wheat	304.59	314.01	318.33	1077.42	1105.54	1132.92	3537	3521	3559
Nutri/Coarse cereals	227.00	240.70	249.38	511.01	573.19	569.36	2251	2381	2283
Pulses	307.31	289.00	275.05	273.02	260.58	242.46	888	902	881
Food grains	1301.69	1322.04	1321.04	3156.16	3296.87	3322.98	2425	2494	2515
Oilseeds	289.45	302.39	301.92	379.63	413.55	396.69	1312	1368	1314
Sugarcane	51.75	58.85	57.40	4394.25	4905.33	4531.58	84906	83349	78953
Cotton@	123.72	129.27	126.88	311.18	336.60	325.22	428	443	436
Jute & Mesta#	6.67	6.58	6.37	101.49	93.92	96.92	2738	2569	2737

@Production in Lakh bales of 170 kg each, # Production in Lakh bales of 180 Kg. each.

In conclusion, the data generally indicates a positive trend in the production and yield of major foodgrains like rice and wheat, while pulses faced a decline in both area and production. Commercial crops like sugarcane and oilseeds showed varied trends, with sugarcane production increasing but yield slightly dropping. These trends can be influenced by various factors including weather conditions, policy interventions, adoption of new technologies, and market dynamics.

COST, MINIMUM SUPPORT PRICES (MSP) AND RETURN STATEMENT

Table-3 provided the details cost, Minimum Support Prices (MSP) and return statement for various agricultural commodities across three crop seasons such as KMS2022-23, KMS2023-24, and KMS2024-25 for kharif crops, and RMS2023-24, RMS2024-25, and RMS2025-26 for rabi crops, along with other crops for 2022, 2023, and 2024 seasons. The table presents three key metrics for each commodity in each season of cost, MSP, and percentage return over cost.

Cost (cost of production) represents the estimated cost incurred in producing each commodity. For example, in kms2024-25, the cost for paddy (common) is ₹1533, while for arhar (tur) it is ₹4761, indicating varying production expenses across different crops.

Minimum support price is the price at which the government purchases crops from farmers to protect them from price fluctuations and ensure a minimum income. The table shows the msp for each commodity in each season. For instance, in KMS2024-25, the MSP for paddy (common) is ₹2300, and for arhar (tur) is ₹7550.

Percentage return over cost indicates the profitability for farmers, calculated as the percentage return on the cost when selling at the msp. A higher percentage signifies better profitability. For example, paddy (common) consistently shows a 50% return over cost across all three kharif seasons, while bajra shows a return of 85% in KMS2022-23, 82% in KMS2023-24, and 77% in KMS2024-25.

The trend increasing costs and MSPs generally, both the cost and MSP values show an increasing trend across the successive seasons for most commodities, reflecting rising input costs and a corresponding increase in the support price offered by the government. Varying profitability while many crops like paddy, ragi, maize, moong, cotton, groundnut, sunflower seed, soyabean, and sesamum consistently offer a 50% return over cost, others like bajra, arhar, urad, masur, and rapeseed/mustard show higher and sometimes fluctuating return percentages.

Specific crop examples wheat (rabi crops) shows a high return over cost, reaching 100% in RMS2023-24 and 102% in RMS2024-25, indicating strong profitability for farmers. rapeseed/mustard (rabi crops) exhibits a high return of 104% in RMS2023-24, 98% in RMS2024-25, and 98% in RMS2025-26, making it a highly profitable crop. Jute (other crops) shows a consistent return over cost, increasing from 61% in 2022-23 to 65% in 2024-25.

This table provides a comprehensive overview of the economic viability of various crops, highlighting the interplay between production costs, government support prices, and the resulting returns for farmers over multiple seasons.

Table-3
Cost, Minimum Support Prices (MSP) and Return Statement

Sl.No.	Commodity	KMS2022-23			KMS2023-24			KMS2024-25		
	KHARIFCROPS	Cost*	MSP	% Return over	Cost*	MSP	% Return over	Cost*	MSP	% Return over Cost
1	PADDY(Common)	136	204	50	145	218	50	153	230	50
	(Grade A)^		206			220			232	
2	JOWAR(Hybrid)	197	297	50	212	318	50	224	337	50
	(Maldandi)^		299			322			342	
3	BAJRA	126	235	85	137	250	82	148	262	77
4	RAGI	238	357	50	256	384	50	286	429	50
5	MAIZE	130	196	50	139	209	50	144	222	54
6	ARHAR(Tur)	413	660	60	444	700	58	476	755	59
7	MOONG	516	775	50	570	855	50	578	868	50
8	URAD	415	660	59	459	695	51	488	740	52
9	COTTON(Medium	405	608	50	441	662	50	474	712	50
	(Long Staple)^		638			702			752	
10	GROUNDNUTINSHE	387	585	51	425	637	50	452	678	50
11	SUNFLOWERSEED	411	640	56	450	676	50	485	728	50
12	SOYABEAN	280	430	53	302	460	52	326	489	50
13	SESAMUM	522	783	50	575	863	50	617	926	50
14	NIGERSEED	485	728	50	515	773	50	581	871	50
	RABICROPS	***RMS2023 -24***			***RMS2024 -25***			***RMS2025 -26***		
1	WHEAT	106	212	100	112	227	102	118	242	1
2	BARLEY	108	173	60	115	185	60	123	198	60
3	GRAM	320	533	66	340	544	60	352	565	60
4	MASUR(LENTIL)	323	600	85	340	642	89	353	670	89
5	RAPESEED/MUSTAR	267	545	104	285	565	98	301	595	98
6	SAFFLOWER	376	565	50	380	580	52	396	594	50
7	TORIA^		545			565			595	
	OTHER CROPS	***2022Season***			***2023Season***			***2024Season***		
1	OPRA(Calendar Year) (Milling)	6974	10590	52	7153	10860	52	7350	11160	52
	(Ball)^		11000			1175			1200	
2	de-husked coconut (calendar year)^		2860			2930			3013	
		2022-23Season			**2023-24Season**			**2024-25Season**		
3	JUTE	295	475	61	309	505	63	323	533	65

* Refers to cost which includes all paid out costs such as those incurred on account of hired human labour, bullock labour/machine labour, rent paid for leased inland, expenses incurred on use of material inputs like seeds, fertilizers, manures, irrigation charges, depreciation on implements and farm buildings, interest on working capital, diesel / electricity for operation of pump sets etc., miscellaneous expenses and imputed value of family labour.

^ Cost data are not available for Paddy (GradeA), Jower (Maldandi), Cotton (Longstaple), Toria, Copra (Ball) and De-husked Coconut. MSPs of Toria and De-husked coconut are determined on the basis of MSPs of Rapeseed / Mustardand Copra respectively. KMS: Kharif Marketing Season, RMS: Rabi Marketing Season

PERFORMANCE OF PRODUCTION OF FOOD GRAINS AND COMMERCIAL CROPS

The production of food grains and commercial crops production during 2019-20 to 2023-24 is presented in table-4.

Total food grains production shows a consistent increase from 2975.04 lakh tonnes in 2019-20 to 3322.95 lakh tonnes in 2023-24. Production of rice steadily increased each year, from 1188.70 lakh tonnes in 2019-20 to 1378.25 lakh tonnes in 2023-24, indicating a strong positive trend. Wheat production also shows an increasing trend, rising from 1078.61 lakh tonnes in 2019-20 to 1132.92 lakh tonnes in 2023-24, although there was a slight dip in 2021-22 compared to 2020-21. Coarse cereals & shree anna/nutri cereals saw an increase from 304.88 lakh tonnes in 2019-20 to a peak of 399.98 lakh tonnes in 2022-23, slightly decreasing to 393.64 lakh tonnes in 2023-24. Shree anna/nutri cereals experienced a fluctuation, with a notable drop in 2021-22 (160.00 lakh tonnes) before recovering. Total pulses production fluctuated, peaking at 273.02 lakh tonnes in 2021-22 and then declining to 242.42 lakh tonnes in 2023-24.

Commercial crops production overall trend also shows a general increase, from 3705.00 lakh tonnes in 2019-20 to 4531.58 lakh tonnes in 2023-24, with a peak in 2022-23 at 4905.33 lakh tonnes. Sugarcane production increased initially but then showed a declining trend after 2020-21, dropping from 4053.99 lakh tonnes in 2020-21 to 325.22 lakh tonnes in 2023-24. Cotton production fluctuated, starting at 360.65 lakh tonnes in 2019-20, dropping to 311.18 lakh tonnes in 2021-22, and recovering slightly to 325.22 lakh tonnes in 2023-24. Jute & mesta production remained relatively stable with minor fluctuations, ranging from 93.54 lakh tonnes to 101.49 lakh tonnes during the period.

Table-4

The production of food grains and commercial crops during 2019-20 to 2023-24

(Production in Lakh Tonnes)

Food grain Crops	***2019-20***	***2020-21***	***2021-22***	***2022-23***	***2023-24****
Rice	1188.70	1243.68	1294.71	1357.55	1378.25
Wheat	1078.61	1095.86	1077.42	1105.54	1132.92
Coarse Cereals	304.88	333.03	351.01	399.98	393.64
Shree Anna /Nutri Cereals	172.61	180.21	160.00	173.21	175.72
Total Pulses	230.25	254.63	273.02	260.58	242.42
Total Food Grains	**2975.04**	**3107.42**	**3156.16**	**3296.87**	**3322.95**
Commercial Crops					
Sugarcane	3705.00	4053.99	4394.25	4905.33	4531.58
Cotton#	360.65	352.48	311.18	336.60	325.22
Jute & Mesta##	98.77	93.54	101.49	93.92	96.92

Source: UP Ag Portal, DA&FW (*As per Final Estimates of 2023-24).

Cotton Production in Bales, 1Bale=170 Kg ## Jute, Sannhemp & Mesta Production in Bales, 1Bale=180 Kg

The analysis of the table reveals a generally positive trend in the production of both food grains and commercial crops in India from 2019-20 to 2023-24. The production of food grains, especially rice and wheat, steadily grew, leading to an overall increase in total food grains from 2975.04 lakh tonnes to 3322.95 lakh tonnes. Commercial crops also saw an overall increase in total production, albeit with more varied trends among individual crops like sugarcane and cotton, which experienced fluctuations or declines in later years after reaching a peak in 2022-23 at 4905.33 lakh tonnes before settling at 4531.58 lakh tonnes in 2023-24. This indicates a robust agricultural sector with sustained growth in staple food production, while commercial crops show more dynamic shifts.

CONCLUSION

India's agricultural sector, despite significant investments and vast arable land, faces slow growth, yet it remains crucial for food security for over 1.4 billion people and employs 58% of the population, contributing 19-20% to GDP. Government spending on agriculture increased from ₹. 1,22,836 crores in 2022 to ₹. 1,25,036 crores in 2023. Agricultural land distribution includes forests (72,021), non-agricultural uses (27,845), barren land (16,554), permanent pastures (10,248), culturable wasteland (11,659), land under miscellaneous tree crops (2,992), fallow land (11,128), current fallow (13,498), and a net area sown of 140,705. The total agricultural land is 179,982, with 154,203 cultivated land and a cropping intensity of 155.9%. Food grain production consistently rose from 2975.04 lakh tonnes to 3322.95 lakh tonnes, while commercial crop production generally increased from 3705.00 lakh tonnes to 4531.58 lakh tonnes, peaking at 4905.33 lakh tonnes in 2022-23 and dropping in 2023-24.

Challenges like climate volatility, soil degradation, and shrinking landholdings persist, despite government initiatives in technology, infrastructure, farmer support, and diversification. The government's strategy aims to modernize the sector, boost farmer incomes, and strengthen the agricultural value chain through policy, investment, and digital integration. In essence, a re-evaluation of india's agricultural policy is needed, focusing on reorienting subsidies for balanced outcomes, integrating broader interventions, and conducting regular impact reviews to benefit farmers, consumers, and the environment.

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