



UPPCS MAINS
2026 Edition

GENERAL STUDIES PAPER III

Smart Notes

Agriculture and Food Security

English Medium

5

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The Nxt Gen Study OS

*Based on NCERT, Standard Books references, Keywords from Syllabus
and Previous Year question Papers*

UPPCS MAINS · SMART NOTES

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CHAPTER 01

Crops, Irrigation, Allied Sectors and Farm Productivity

Agriculture and Food Security · 6 topics



TOPIC 1

Major Crops and Cropping Patterns

Chapter Overview

India now grows more horticulture than foodgrains and leads the world in milk, yet about 44% of its gross cropped area still depends on rain (Economic Survey 2025-26). This chapter covers what India grows, why its **yields** stay low, what the **Green Revolution** meant for small farmers, how **irrigation** is built and shared between the States and the Centre, and the fast-growing horticulture, livestock and fisheries sectors.

Topic 1 sets out the major crops and cropping patterns. Topics 2 and 3 explain low productivity and the gains and costs of the Green Revolution. Topic 4 covers irrigation, rainfall dependence, Centre–State roles and PMKSY. Topics 5 and 6 turn to horticulture, agroforestry, dairy and fisheries; livestock and fisheries are now the fastest-growing parts of farming.

TOPIC FLOW

- 1 **Major Crops and Cropping Patterns**
record output, but low yields
- 2 **Agricultural Productivity: Causes and Remedies**
the biggest yield jump came with
- 3 **Green Revolution and Small Farmers**
which rested on
- 4 **Irrigation and PMKSY**
water also lifts
- 5 **Horticulture and Agroforestry**
alongside the other fast-growing segment
- 6 **Animal Husbandry, Dairy and Fisheries**

India's foodgrain output touched a record 376.56 million tonnes in 2025-26 (MoA&FW, Third Advance Estimates), while agriculture and allied sectors formed 18.0% of GVA (MoSPI, 2026). A **cropping pattern** is the share of area under different crops at a point of time, and the sequence and method of growing them.

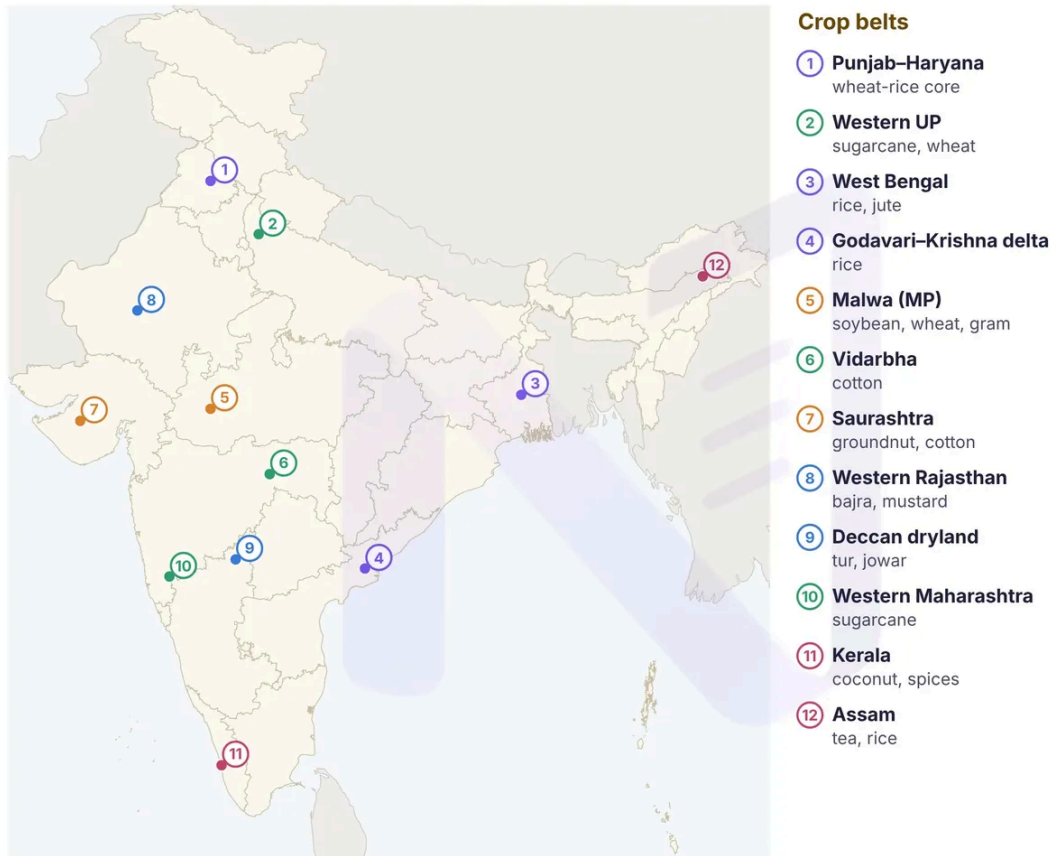
Status, World Rank and Leading States

- Weight in the economy**: agriculture and allied sectors produce 18.0% of GVA on the 2022-23 base yet employ 43.0% of all workers, the largest share of any sector; e.g. *MoSPI, 2026; PLFS 2025; real growth 4.2% in 2024-25 and 3.0% in 2025-26 (MoSPI, 2026)*.
- Constitutional basis**: agriculture is a State subject and trade in foodstuffs a Concurrent subject, so the Centre works through schemes, price support and funding; e.g. *Entry 14, State List; Entry 33, Concurrent List; Article 48 asks the State to organise agriculture and animal husbandry on modern, scientific lines (Constitution of India)*.
- Record harvests**: rice and wheat lead the foodgrain basket, maize grew fastest and pulses recovered, but oilseeds stayed flat as soybean fell; e.g. *rice 1,540.24, wheat 1,206.57, maize 550.93, pulses 274.09 and oilseeds 430.59 lakh tonnes (MoA&FW, Third Advance Estimates 2025-26)*.
- World rank and leading States**: India leads the world in rice, pulses and millets and is second in wheat and sugarcane; Uttar Pradesh alone grows nearly half of India's cane; e.g. *UP 48.6% of sugarcane in 2024-25 (MoA&FW, 2025); ranks (PIB, 2026); UP details: see GS-6*.

Table 1.1 States are listed from standard sources, not ranked; sugarcane share for 2024-25 (MoA&FW, 2025); world ranks (PIB, 2026).

Crop	Season	Major producing States	India's world rank
Rice	Kharif (also rabi in the east and south)	West Bengal, Uttar Pradesh, Punjab, Telangana, Odisha, Andhra Pradesh	1st
Wheat	Rabi	Uttar Pradesh, Madhya Pradesh, Punjab, Haryana, Rajasthan	2nd
Millets (bajra, jowar, ragi)	Kharif	Rajasthan, Karnataka, Maharashtra	1st
Maize	Kharif and rabi	Karnataka, Madhya Pradesh, Maharashtra, Bihar	–
Pulses (gram, tur)	Gram rabi; tur kharif	Madhya Pradesh, Maharashtra, Rajasthan	1st
Oilseeds (mustard, soybean, groundnut)	Mustard rabi; soybean and groundnut kharif	Rajasthan, Madhya Pradesh, Gujarat, Maharashtra	–
Sugarcane	About a year in the field	Uttar Pradesh (48.6%), Maharashtra, Karnataka	2nd
Cotton	Kharif	Gujarat, Maharashtra, Telangana	2nd
Tea	Plantation (perennial)	Assam, West Bengal	2nd

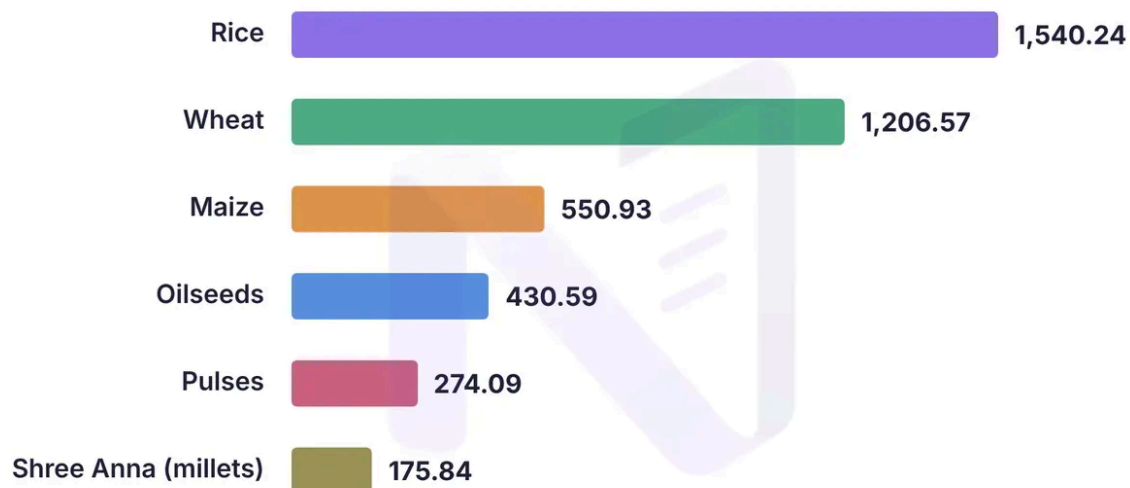
Major Crop Belts of India



Belts from standard sources. Colours: violet cereals, green cash crops, orange oilseeds and pulses, blue millets and pulses, rose plantation crops. UP grew 48.6% of India's cane in 2024-25 (MoA&FW, 2025).

Fig. 1.1 Major crop belts of India

Crop Output, 2025-26 (lakh tonnes)



Source: MoA&FW, Third Advance Estimates 2025-26 (2026)

Fig. 1.2 Production of major crops, 2025-26 (Third Advance Estimates)

Cropping Patterns and Why They Shift

- Crop seasons**: kharif crops are sown with the south-west monsoon, rabi crops in winter on stored moisture or irrigation, and short zaid crops in summer; *e.g. kharif rice and cotton; rabi wheat, gram and mustard; zaid moong and watermelon; cropping regions and agro-climatic zones: see GS-1 Geography.*
- Mono-cropping and mixed cropping**: mono-cropping repeats one crop or rotation; mixed cropping sows crops together and inter-cropping in set rows, so legumes add nitrogen and spread risk; *e.g. rice-wheat in Punjab; tur with jowar in the dryland Deccan.*
- Multiple cropping and cropping intensity**: multiple cropping grows two or more crops a year on one plot; cropping intensity is gross cropped area divided by net sown area, times 100; *e.g. two or three crops a year on irrigated land of the Indo-Gangetic plain.*
- Shift to rice and wheat**: assured MSP (a floor price for notified crops), FCI procurement and irrigation drew area to rice and wheat, away from pulses and millets; *e.g. Shree Anna output 185.92 lakh tonnes in 2024-25 (Final Estimates) and 175.84 lakh tonnes in 2025-26 (Third Advance Estimates) (MoA&FW); MSP's effect: see Ch 3, Topic 2.*

Why Crop Farming Matters

- Food security and stable prices**: domestic harvests feed the PDS and buffer stocks, keep food prices stable, sustain rural demand and leave rice and wheat surpluses for export; *e.g. wheat exports of 50 lakh tonnes allowed in 2026 owing to large stocks (PIB, 2026; see Ch 3, Topic 3); food inflation: see Indian Economy Ch 4, Topic 5.*
- Raw materials and exports**: crops supply textile, sugar, edible-oil and food-processing industries and earn foreign exchange; *e.g. agricultural exports a record \$52.55 billion in 2025-26, rice \$11.5 billion (Department of Commerce, 2026).*

Issues in India's Cropping Pattern

Output is at a record, but the crop mix leans on water-hungry cereals, which strains aquifers and leaves India short of pulses and edible oils.

- Rice-wheat lock-in**: the rotation mines groundwater and soil in the north-west, and burning paddy stubble adds to winter air pollution; *e.g. Punjab and Haryana; crop-residue burning: see Environment Ch 2.*
- Import gaps**: pulses and oilseeds are mostly rain-fed and low-yielding, so India still imports more than half of its edible oil; *e.g. edible oil import dependence 56.25% in 2023-24 (Economic Survey 2025-26).*
- Skewed price signals**: procurement favours rice and wheat in a few States, so growers of other crops lack price assurance; *e.g. MSP's narrow reach, as found by the Shanta Kumar Committee (2015); see Ch 3, Topic 2.*

Reforms and Way Forward

- Diversification missions**: missions to raise pulses, oilseeds and millets cut imports and water use (details: see Ch 2, Topic 4); *e.g. NMEO-Oilseeds (2024), Mission for Aatmanirbharta in Pulses (2025), NMEO-Oil Palm (2021); International Year of Millets 2023.*
- High-value crops**: shifting area to horticulture, better cotton and oil palm raises income per hectare, as the Dalwai Committee (2017-18) advised; *e.g. Mission for Cotton Productivity (2025); horticulture: see Topic 5.*
- Viksit Bharat 2047**: a developed India needs farm incomes to rise through value addition, exports and allied activities, not grain volume alone; *e.g. Agriculture Export Policy (2018) set a \$100 billion goal; PM-KISAN (2019) pays ₹6,000 a year.*