

# THE GIST OF YOJANA KURUKSHETRA & SCIENCE REPORTER

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**The Ultimate Resource for Competitive Exams**



# **THE GIST OF YOJANA, KURUKSHETRA, SCIENCE REPORTER**

*- The Ultimate Resource for Competitive Exams*

**Sector-wise Key Achievements with  
Authentic Data and Verified Facts**

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# SCIENCE REPORTER

## Agriculture in India

### Agriculture in India: A General Overview

- **Geographical Extent:** 44.8% of India's total geographical area is under agriculture.
- **Export Data:** In the year 2022-23, India exported fresh fruits worth **Rs. 6,219.46 crore (770.70 million USD)**.
- **Economic Contribution:** The Gross Value Added (GVA) of agriculture and allied sectors in the Indian economy is approximately **18-19%**.

- ♦ India is the world's largest producer of **milk, pulses, and jute**.
- ♦ India ranks **second in the world** (after the USA) in terms of total arable land.

### Horticulture Sector

- **Contribution to Economy:** Horticulture accounts for approximately **33.5%** of the Agricultural GDP.
- **Production Capacity:** 112.73 million metric tonnes of fruit were obtained from 7.04 million hectares.
- **Profitability:** Farmers can earn significant profits from **Grapes (Rs. 1,95,000/acre)** and **Pomegranate (Rs. 1,30,000/acre)**.
- **Processing and Losses:** India's contribution to global fruit processing is only **1%**. Approximately 12 million tonnes of crops are wasted post-harvest.
- **Future Targets:** Fruit processing is estimated to reach **16.39 million tonnes** by 2024.
- **Skincare Market:** India's skincare market was valued at **6.93 billion USD in 2023** (usage of fruit extracts in cosmetics is increasing).

- ♦ India is often called the "Fruit Basket" of the world; it ranks **No. 1** in the production of **mango, banana, and papaya**.
- ♦ The **Mission for Integrated Development of Horticulture (MIDH)** is the primary scheme for the sector, while '**Operation Greens**' aims to prevent fruit wastage.

### Pearl Farming & Aquaculture

- **The Process:** A 'Nucleus' is inserted into the body of a mollusk, which then forms a layer of '**Nacre**', resulting in a pearl.
- **Exports:** In 2022, India was the **19th largest exporter of pearls** (3.79 million USD).
- **Government Initiative:** **Rs. 461 lakh** allocated for bivalve farming under the **PMMSY** (Pradhan Mantri Matsya Sampada Yojana) scheme.
- **Institutes:** **ICAR-CIFA (Bhubaneswar)** provides national training for pearl production.
- **Regional Development:** The first pearl cluster was developed in **Hazaribagh, Jharkhand**, by TRIFED and Purvi Agrotech.

### Contribution of Agricultural to Indian Economy

- **Main Source of Livelihood:** About **50-55%** of India's population depends directly or indirectly on agriculture for their livelihood.
- **GDP Share:** The contribution of agriculture and allied sectors to India's GDP stays between **18-20%**.
- **Backbone:** Agriculture is rightfully called the "**Backbone**" of the Indian economy.

## 2 ■ Exam Pointers

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### India's Global Rankings in Agriculture

- **First Place:** India is the world's largest producer of **milk, pulses, jute, spices, mango, banana, and papaya**.
- **Second Place:** India ranks second in the world (after China) in the production of **rice, wheat, sugarcane, groundnut, vegetables, and cotton**.
- **Livestock:** India has the **largest livestock population** in the world.

### Notable Agricultural Revolutions

- **Green Revolution:** Started in the 1960s; focused on increasing wheat and rice production (Father: **M.S. Swaminathan**).
- **White Revolution:** Related to milk production (**Operation Flood**); Father: **Verghese Kurien**.
- **Yellow Revolution:** Oilseed production (especially mustard and sunflower).
- **Blue Revolution:** Fish production.
- **Pink Revolution:** Onion and Prawn (shrimp) production.
- **Silver Revolution:** Egg and Poultry production.

### Crop Types and Seasons

There are three main cropping seasons in India:

1. **Kharif:** Sown in June-July and harvested in October-November (e.g., Paddy, Maize, Bajra, Cotton, Soybean).
2. **Rabi:** Sown in October-December and harvested in April-May (e.g., Wheat, Barley, Gram, Peas, Mustard).
3. **Zaid:** Crops grown between March and June (e.g., Watermelon, Muskmelon, Cucumber, fodder crops).

### State-wise Specialties in Agriculture

- **Granary of India:** **Punjab** is known as the 'Granary' or 'Food Basket' of India.
- **Organic Farming:** **Sikkim** is India's (and the world's) first **100% organic state**. Among Union Territories, **Lakshadweep** is 100% organic.
- **Spice Garden:** **Kerala** is known as the 'Spice Garden of India'.
- **Top Producers:**
  - ✓ **Rice:** West Bengal
  - ✓ **Wheat & Sugarcane:** Uttar Pradesh
  - ✓ **Cotton:** Gujarat / Maharashtra
  - ✓ **Coffee:** Karnataka
  - ✓ **Tea:** Assam

### Sources of Irrigation

- A large portion of Indian agriculture still depends on the **Monsoon**.
- The largest share of irrigation comes from **Tubewells (approx. 45%)**, followed by canals and wells.

### Key Government Schemes

- **PM-KISAN:** Financial assistance of **Rs. 6,000 per year** to eligible farmer families.
- **Soil Health Card:** Tests soil fertility and advises farmers on the balanced use of fertilizers.
- **PMFBY (Pradhan Mantri Fasal Bima Yojana):** Provides insurance cover to farmers against crop failure.
- **e-NAM:** An integrated national agricultural market portal for farmers to sell their produce online.

### Soil Types

- **Alluvial Soil:** The most common soil in India (covering about **40%** of the area) and considered the most fertile for agriculture.
- **Black Soil:** Also known as '**Regur Soil**', it is ideal for cotton cultivation.

## Disaster Management

### Myanmar Earthquake 2025 and Tectonic Structure

- **Event:** On March 28, 2025, a severe earthquake of magnitude 7.7 struck Myanmar, resulting in over 2,000 deaths.
- **Impact:** Economic losses are estimated to be equivalent to Myanmar's GDP (\$64.2 billion). Buildings collapsed even in Bangkok (1,000 km away).
- **Scientific Reason:** Myanmar is situated on the **Sagaing Fault** (1,400 km), where plate movement is 15–25 mm/year. In 1792, this region experienced an 8.5 magnitude 'Megathrust' earthquake.
- **India's Role:** The Indian Air Force and NDRF immediately delivered relief materials to Naypyidaw.

- ♦ **Operation Sahayata (HADR):** Providing assistance to Myanmar is part of India's '**Neighborhood First**' policy under its foreign disaster relief framework.
- ♦ **Nature of Sagaing Fault:** It is a '**Strike-slip fault**' that divides Myanmar into two parts from North to South. It is one of the most active faults in the world.
- ♦ **Richter Scale vs. Mercalli Scale:** Magnitude (7.7) represents the energy released, while the Mercalli Scale (Intensity) measures the level of destruction.

### Seismic Risk in India: Delhi and North India

- **Regional Risk:** 54% of India's landmass is prone to earthquakes. Delhi is placed in **Zone-4 (High Risk)**.
- **Delhi's Situation:** The Dhaulakuan area has felt tremors 446 times in the last 32 years. Faults beneath the Aravalli range are responsible for this.
- **Human Factors:** According to **NGRI**, excessive groundwater extraction is also increasing seismic activity.
- **Infrastructure:** 91.7% of houses in Delhi are made of solid bricks, which can prove dangerous in an earthquake without proper engineering.

- ♦ **Seismic Zones:** India is divided into 4 zones (II, III, IV, V). **Zone V** (Himalayan region and Kutch) is the most dangerous.
- ♦ **Liquefaction:** Soil in areas along the Yamuna banks in Delhi is sandy, where the risk of 'Liquefaction' (soil behaving like liquid) is high during an earthquake, causing buildings to sink.
- ♦ **Plate Tectonics:** The Indian Plate is sliding North toward the Eurasian Plate at about 5 cm per year, creating massive pressure in the Himalayan region.

### Migratory Birds and Wetlands

- **Migration Period:** Millions of birds from Siberia, Mongolia, and Europe visit India between October and March.
- **Major Sites:**
  - ✓ **Bharatpur (Rajasthan):** Keoladeo National Park (375+ species).
  - ✓ **Chilika Lake (Odisha):** A saltwater lagoon which is Asia's largest wintering ground.
  - ✓ **Kumarakom (Kerala):** Backwaters famous for biodiversity.

- ♦ **Central Asian Flyway (CAF):** India is among the 30 countries that are part of this flyway. Wetlands serve as 'stopovers' for migratory birds.
- ♦ **Ramsar Sites:** Both Keoladeo and Chilika are wetlands of international importance under the Ramsar Convention.
- ♦ **Ecosystem Health:** The timely arrival of migratory birds is an indicator of a healthy environment. From a DM perspective, conserving lakes also helps in flood prevention.

### Institutional Framework of India

- **Disaster Management Act, 2005:** The primary law in India providing a legal framework for managing disasters.

# YOJANA

## Art & Culture

### Forest, Heritage, and Fashion: The New Identity of Tribal India

- **‘Bharat Tribes Fest 2026’** (New Delhi) is an initiative of the Ministry of Tribal Affairs and **TRIFED**, providing a national platform to move tribal artisans from forest-based subsistence livelihoods to global value chains.
- TRIFED’s **‘Van Dhan Vikas Kendra (VDVK)’** is a cluster of 15 tribal Self-Help Groups (SHGs) where value addition, processing, and branding of Minor Forest Produce (MFP) are performed.
- **‘RISA’**—inspired by the traditional fabrics of Tripura—is an initiative by the Ministry of Tribal Affairs to establish tribal crafts as premium brands in domestic and global markets.
- **Debongshi Chakma** (Chakma tribe) from Mizoram, leading over 500 women through the **‘Bodhibloom Society’**, is connecting Jhum cultivation, traditional handicrafts, and bamboo products to the global market.
- The **Toda community** of the Nilgiri Hills in Tamil Nadu is famous for its distinctive red-and-black embroidery with geometric shapes, preserved by women artisans like Sangeeta.

| MAJOR TRIBAL CRAFTS AND STATES |                            |
|--------------------------------|----------------------------|
| Name of Craft                  | Associated State / Region  |
| Eri and Muga Silk              | Assam                      |
| Kotpad Cotton                  | Odisha                     |
| Changpa Pashmina               | Ladakh                     |
| Toda Embroidery                | Tamil Nadu (Nilgiri Hills) |
| Longpi Pottery                 | Manipur                    |
| Turtuk Brass Cutlery           | Ladakh                     |
| Dhokra Art                     | Chhattisgarh               |

### Indian Cinema: Great Personalities and Creativity

Cinematic legends have given Indian art global recognition and philosophical depth.

- **Salil Chowdhury (Composer):** A confluence of folk, classical, and Western music. He personally prepared the story, screenplay, and music for *Do Bigha Zamin* (1953). The film *Kanoon* (1969) is a rare film made without any songs.
- **Guru Dutt (Filmmaker):** His works (*Pyaasa*, *Kaagaz Ke Phool*) depict loneliness and creative despair. *Kaagaz Ke Phool* (1959) was India’s first CinemaScope film.
- **P. Bhanumathi (Versatile Talent):** An icon of South Indian cinema. With the film *Chandrani* in 1953, she became the first female director of Telugu cinema.
- **Raj Khosla:** The father of the ‘musical thriller’ in Hindi cinema (*Woh Kaun Thi?*, *Mera Saaya*). A postage stamp was issued in his honor in 2013.

## CREATIVITY VS. AI

Human creativity can take ‘irrational leaps,’ whereas AI only refines known patterns and information (collective intelligence).

## Film Certification and Censorship (Central Board of Film Certification & Regulations)

The history of balance between film regulation and freedom of expression.

- **History:** Started with the Act of 1918 in colonial India. The first banned film was *Bhakta Vidur* (1921). The Cinematograph Act of 1952 came into force in independent India.
- **Modern Reforms (2024 Rules):**
  - ✓ **Validity:** Certification is now valid for an unlimited time instead of 10 years.
  - ✓ **UA Rating:** Now divided into three sub-categories—UA 7+, UA 13+, and UA 16+.
  - ✓ **Piracy:** Sections 6AA and 6AB added for anti-piracy measures.
  - ✓ **Digitization:** E-Cinepramaan (2017) and QR code-based certificates.

The 'Film Certification Appellate Tribunal' (FCAT) has been abolished, increasing the autonomy of the CBFC.

## Women and Social Evolution in Cinema

- The journey of female portrayal from 'male actors playing women' to 'feminist consciousness.'
- **Early Phase:** In *Raja Harishchandra* (1913), female characters were played by a man (Anna Salunke). Durgabai Kamat became India's first actress.
- **Fearless Nadia (Mary Ann Evans):** Became the face of the adventurous woman with the 1935 film *Hunterwali*.
- Feminist Consciousness:
  - ✓ **Ankur (1974):** Struggle against oppression portrayed by Shabana Azmi.
  - ✓ **Aval Oru Thodar Kathai (1974):** The burden of middle-class working women.
  - ✓ **Avalude Ravukal (1978):** A sympathetic perspective towards sex workers.

### COMPOSER RAVINDRA JAIN

- ◆ Famous composer Ravindra Jain was honored with the Padma Shri award in 2015.
- ◆ The *Ramayan* serial, composed by Ravindra Jain, was broadcast in 1987-1988.
- ◆ Ravindra Jain also acted in the 1988 film *Chintamani Surdas*.
- ◆ He prepared the background score for approximately 150 films and serials.

## Media & Entertainment Industry: An Overview

- The expansion of India's 'Orange Economy' (Creative Economy).
- **Market Size:** Currently \$29.4 billion, estimated to reach \$100 billion by 2030.
- **WAVES Summit:** Organized in Mumbai from May 1–4, 2025 to make India the global capital of the creative economy.
- **Prasar Bharati:** Launched its own OTT platform named 'Waves'.
- **Core Vision:** 'Create in India, Create for the World.'

## AVGC-XR and Gaming (Animation, VFX, Gaming & Comics)

- The emerging field of technology and creativity.
- **NCOE (Mumbai):** Establishment of the 'National Center of Excellence' for animation and gaming. Goal to create 5 lakh jobs.
- **Gaming Market:** India is the world's second-largest mobile gaming market, with a base of 59 crore gamers.
- **Anime:** India has become the world's second-largest consumer of Anime.
- **Technical Contribution:** Indian studios have contributed to Hollywood films like *Life of Pi* and *The Jungle Book*.

# KURUKSHETRA

## Agriculture

### Agricultural Statistics & Economy

#### *Economy and GVA (Gross Value Added)*

- Agriculture contributes approximately **18.2 percent** to the national Gross Domestic Product (GDP).
- In the year 2023–24, the contribution of agriculture and allied sectors to the Gross Value Added (GVA) was about **18 percent**.
- In 2011–12, the GVA of the agricultural sector was **Rs. 15.02 lakh crore**.
- By 2023–24, this has increased to **Rs. 48.78 lakh crore**.

#### *Employment and Livelihood*

- Approximately **42.3 percent** of India's total workforce is engaged in the agricultural sector.
- During the same period (2023-24), agriculture provided a livelihood to more than **46 percent** of the country's population.

#### *Farmer Profile and Landholding*

- About **85 percent** of farmers in India fall into the small and marginal categories.
- Approximately **89.4 percent** of Indian farmers own less than two hectares of land.

#### *Crop Production and Productivity*

- The average yield of paddy in India is **3.85 tonnes per hectare**.
- Rice, maize, and wheat provide about **60 percent** of the world's total food energy requirements.

#### *Market and Future Outlook*

- India's food and grocery market is the **sixth largest** in the world.
- Food consumption in India is estimated to reach **Rs. 1.70 lakh crore** by 2025-26.

### Agri-Tech, Startups & Digital Farming

#### *Concepts and Modern Technology*

- The main objective of 'Agriculture 4.0' is to increase the use of digital and advanced technologies in farming.
- Digital farming utilizes modern solutions such as satellite sensors, mobile apps, Artificial Intelligence (AI), biotechnology, and digital platforms.
- In agriculture, **IoT** stands for—Internet of Things.
- The device used to analyze temperature and humidity is called a 'climate sensor'.
- Through digital farming, farmers are able to get accurate information about soil conditions, moisture levels, weather updates, and pest outbreaks.

#### *Agri-Tech Startups and Investment*

- Currently, more than **4,000 agri-tech startups** are actively working in India.
- The Startup India scheme has recognized approximately **2,800 agri-tech startups** until December 2023.
- The total number of agri-tech startups in India is projected to reach **5,000 by 2030**.
- In 2024, the number of investment deals increased by **28 percent** compared to 2023.
- **DeHaat** aims to reach 5 million (50 lakh) farmers by the year 2027.

### *Digital Infrastructure and Access*

- Approximately **85.5 percent** of households in India have access to at least one smartphone.
- In rural areas, **95.5 percent** of people in the 15–29 age group use smartphones.
- A 2023 NASSCOM report indicates that only **23 percent** of people in rural India have access to reliable smartphones and internet.
- As of May 2025, there were a total of **5.60 lakh active Common Service Centers (CSC)** in India.
- Of these, 4.36 lakh, or **77.9 percent**, are located in rural areas.

### *Impact of AI and Precision Farming*

- Microsoft's AI-based '**FarmVibes**' initiative has enabled an increase in crop productivity by up to **40 percent**.
- The same initiative has led to a **25 percent reduction** in fertilizer usage.
- According to the Startup India 2025 report, **Precision Agriculture** can increase crop productivity by up to **30 percent**.
- As per the IndiaAI 2022 report, AI-based solutions can increase crop production by **20–30 percent** by 2030.

### *Usage of Drone Technology*

- In developed countries like Japan and South Korea, the adoption rate of drones in agriculture is over **60 percent**.
- **Drone spraying technology** is considered the most suitable for pest control in fields.

## **Digital Agriculture Mission & AgriStack**

### *Digital Agriculture Mission*

- The Digital Agriculture Mission was approved on **September 2, 2024**.
- The total provision for the Digital Agriculture Mission is **Rs. 2,817 crore**.
- The Central Government's share in this mission is **Rs. 1,940 crore**.
- **DPI (Digital Public Infrastructure)** is a part of the Digital Agriculture Mission.

### *AgriStack: Digital Data Platform*

- '**AgriStack**' is a digital platform based on farmers' data.
- Pilot projects for AgriStack have been launched in **six states**.
- So far, **19 states** have signed Memorandums of Understanding (MoUs) with the Ministry of Agriculture and Farmers Welfare for AgriStack.

### *Survey and Objectives*

- The mission aims to conduct a micro-level survey of **142 million hectares** of agricultural land.
- The first phase of the **Digital Crop Survey** will be launched in **400 districts**.

### *Management and Systems*

- The objective of '**CAMS**' (Comprehensive Agriculture Management System) is to provide a holistic agricultural management system.

## **Krishi-DSS & Geospatial Technology**

### *Introduction & Development*

- **Krishi-DSS** is a geospatial platform.
- It was developed by the **Department of Agriculture and Farmers Welfare**.
- Krishi-DSS was launched on **August 16, 2024**.
- Krishi-DSS is referred to as the '**Gati-Shakti**' of Indian agriculture.

### *Data & Technical Integration*

- Krishi-DSS incorporates hundreds of agricultural **data layers**.
- It provides data on satellite imagery, weather, groundwater, and soil.