

**PRELIMS
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Yearly Compilation*****Jan 2021 - Feb 2022****Agriculture**

- 1 All Newspaper/PIB/Magazines
- 2 All Relevant Issues from Indian Agriculture
- 3 Agriculture Related Schemes/Land reforms
- 4 Major Crops: Features and Policies
- 5 Agriculture Technology Advancements
- 6 Factual Prelims Pointers and Concepts



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Contents

1. INDIAN AGRICULTURE . 01-06

- Minimum Support Price01
- The need of a comprehensive03
agricultural policy
- Agriculture Infrastructure Fund04
- Budget and Agriculture04
- Agriculture Orientation Index (AOI)05
- Climate-smart Agriculture.....05

2. AGRICULTURAL 08-11 MARKETING

- Rice Export Promotion Forum (REPF)08
- e-NAM09
- NCDEX launched agriculture-focused09
indices
- SEBI Bans Derivative Trade09
in Agriculture Commodities
- Fertiliser Shortage: Farmers Stare at.....10
Economic Distress, Black Marketing
- New App for Fisheries Sector.....11

3. MAJOR CROPS 13-25

- "Soya Meal" declared as13
an Essential Commodity
- World Pulses Day 202214
- Why is India challenging WTO15
verdict on sugar?
- National mission on edible oil16
- Black rice and its production in India17

- Jammu's purple revolution18
- UP's Chandauli got UNDP praise18
for Black rice
- Saffron Bowl Project19
- 'Village rice' of Tamil Nadu20
- The first consignment of 'red rice'20
- Sweet Revolution.....21
- Government inaugurates National21
conference on Agriculture
for Rabi campaign 2021
- Announcement on fortified rice22
- Chemical-free Natural Farming.....24

4. AGRICULTURAL 27-28 TECHNOLOGY

- Drone in agriculture/Kisan drone27
- Linking of innovative agriculture28
technologies to farms under
Biotech-KISAN program

5. LAND REFORMS..... 30-31

- Conclusive Land Titling.....30
- 'SWAMITVA scheme'31

6. SCHEMES/ 33-37 PROGRAMMES

- Important Organizations related to36
Agriculture

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1

INDIAN AGRICULTURE

The agriculture sector is an integral part of India's growth story. It employs **58 percent of the population** and contributes **18 percent of the country's GDP**. It is responsible for both food and nutritional security and is key to efforts towards alleviating poverty and reducing inequality. The total agricultural and allied products exports stood at US\$ 41.25 billion in FY21.



1. Minimum Support Price

Context : Government of India announces Minimum Support Prices (MSP) for different crops.

What is MSP?

- It is the minimum price at which government agencies procure particular crops from the farmer at **MSP**.
- It is announced by the government on 23 commodities including 22 mandated crops and **fair and remunerative price (FRP)** for sugarcane.

Minimum Support Price (MSP)

It is the minimum price at which government agencies procure particular crops from the farmer at MSP.

It is announced by govt. on **23 commodities** at the start of each cropping season for Rabi & Kharif.

Commodities include **22** mandated crops and fair and remunerative price (**FRP**) for sugarcane.



23

CACP recommends MSPs on a total of 23 commodities

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Datastory

Current issues

- Higher usage of fertilizers resulted in poor NPK ratio in soil.
- Current ratio- **31:8:1** (in Punjab)
- Target ratio- **4:2:1**
- Farmers are demanding a legal mandate for MSP.

4

COMMERCIAL CROP
Cotton, Sugarcane, Copra & Raw Jute

7

CEREALS
Paddy, Wheat, Maize, Bajra, Jowar, Ragi and Barley

5

PULSES
Chana, Arhar/tur, Urad, Moong and Masur

7

OILSEEDS
Rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower & nigerseed

Crops covered

Crops covered by MSPs include:

- 7 types of cereals (paddy, wheat, maize, bajra, jowar, ragi and barley)
- 5 types of pulses (chana, arhar/tur, urad, moong and masur)
- 7 oilseeds (rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower, nigerseed)
- 4 commercial crops (cotton, sugarcane, copra, raw jute)

Who announced MSP?

- The Cabinet Committee of Economic Affairs announces MSP based on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**.
- The price is announced at the beginning of the sowing season.

Factors to be considered

While recommending MSPs, the CACP looks at the following factors:

- the demand and supply of a commodity
- its cost of production
- the market price trends (both domestic and international)
- inter-crop price parity
- the terms of trade between agriculture and non-agriculture (that is, the ratio of prices of farm inputs and farm outputs)
- a minimum of 50 per cent as the margin over the cost of production
- the likely implications of an MSP on consumers of that product

2. The need of a comprehensive agricultural policy

Context: The recent agricultural law repeal must serve as springboard for wider reform in the agricultural sector.

The repealed farm laws

- **Farmers Produce Trade and Commerce (Promotion and Facilitation) Act, 2020**, which is aimed at allowing trade in agricultural produce outside the existing APMC (Agricultural Produce Market Committee) mandis.

APMC (Agricultural Produce Market Committee) mandis

- Presently, India's agricultural markets are regulated by the states under the Agricultural Produce Marketing Committee (APMC) Act.
- Under the APMC Act, the states can establish agricultural markets, popularly known as mandis.
- The sale of agricultural commodities can occur only in the mandis through auction. The sales process in mandis is regulated through commission agents (CAs) who mediate between the farmers and traders.

- **Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020**, which seeks to provide a framework for contract farming;
- **Essential Commodities (Amendment) Act, 2020**, which is aimed at removing commodities such as cereals, pulses, oilseeds, edible oils, onion and potato from the list of essential commodities.

The state of agriculture (overview)

- **Source of livelihood:** Agriculture is the primary source of livelihood for about **58% of India's population**.
- India is among the 15 leading exporters of agricultural products in the world. The total agricultural and allied products exports stood at US\$ 41.25 billion in FY21.
- **Related sector:** Agriculture and related sectors such as forestry and fisheries account for 19.9 percent of the country's GDP.

Farm policies in US, EU

- In the US and members of the EU, where the workforce dependent on agriculture has been fast decreasing over the past few decades and is currently just 1% and 4% respectively, agricultural policies are regularly enacted.
- In the US, Farm Acts are enacted nearly every five years, while the EU members adopt their Common Agricultural Policy every decade.

Challenges for growing inefficiencies in the sector

- inadequate irrigation facility, along with continued dependence on the monsoon
- decreasing sizes of agricultural land holdings
- continued dependence on the monsoon
- imbalanced use of soil nutrients resulting in loss of fertility of soil
- uneven access to modern technology in different parts of the country
- lack of access to formal agricultural credit
- deficient investment
- inadequate infrastructure supporting agriculture
- Inadequate investment coupled with diminishing funding for agricultural research
- Environmental challenges – climate change, poor soils and depleting groundwater

3. Agriculture Infrastructure Fund

Context: Agriculture Infrastructure Fund applications cross the Rs. 8,000 crore mark, Sanctions cross Rs. 4000 crore mark.

What is Agriculture Infrastructure Fund?

- The **Agriculture Infrastructure Fund is a medium - long term debt financing facility** for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee.
- **Duration:** The duration of the scheme is from FY2020 to FY2029 (10 years).
- **Funding:** Under the scheme, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to Rs. 2 Crores.

The eligible beneficiaries

- Eligible beneficiaries include farmers, FPOs, PACS, Marketing Cooperative Societies, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-ups, and Central/State agency or Local Body sponsored Public-Private Partnership Projects.

4. Budget and Agriculture

Context: Recently, the finance minister presented the Union Budget 2022-23 in Parliament.

Budgetary allocation for Farm Sector:

- The **overall allocation increased by a meagre 4.4 per cent** for the year, compared to the expenditure on the sector in the last financial year.

- ▶ There was a marginal increase of Rs 5,700 crores, from Rs 126807 crore in the financial year (FY) 2021-22 to about 132513 crores in FY 2022-23.
- The worrying part is that even the important **schemes for crop insurance and minimum support price (MSP), especially for pulses and oilseeds** saw a drastic slashing of funds.
- The **Market Intervention Scheme and Price Support Scheme (MIS-PSS)** was allocated Rs 1,500 crore, 62 per cent less than Rs 3,959.61 crore in revised estimates (RE) of FY 2021-22.
- The **Pradhan Mantri-Annadata Aya Sanrakshan Abhiyan (PM-AASHA)** saw an even deeper cut.
 - ▶ It was allocated just Rs 1 crore for the year as against an expenditure of Rs 400 crore in 2021-22.
 - ▶ This is almost a 100 percent reduction.

Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)

- PM-AASHA is an umbrella scheme aimed at ensuring remunerative prices to the farmers for their produce.
- Components of PM-AASHA:
 - ▶ Price Support Scheme (PSS)
 - ▶ Price Deficiency Payment Scheme (PDPS)
 - ▶ Pilot of Private Procurement & Stockist Scheme (PPPS)

5. Agriculture Orientation Index (AOI)

Context: The term 'Agriculture Orientation Index (AOI)' was highlighted during the Union Budget 2022-23.

What is AOI?

- **Agriculture Orientation Index (AOI)** is an index that was developed as part of **Goal 2 (Zero Hunger) of the 2030 Agenda for Sustainable Development in 2015**.
- The **Agriculture Orientation Index (AOI)** is calculated by dividing the agriculture share of government expenditure by the agriculture value-added share of GDP.
- In other words, it measures the **ratio between government spending towards the agricultural sector and the sector's contribution to GDP**.

The Sustainable Development Goal (SDG) 2 emphasises an **increase in investment in rural infrastructure, agricultural research and extension services, development of technology to enhance agricultural productivity and eradication of poverty in middle- and lower-income countries**.

6. Climate-smart Agriculture

Context: The agriculture sector's massive greenhouse gas emissions pose a threat to India's green transition. There is an urgent need for a transition to climate-smart agriculture

What is Climate-Smart Agriculture (CSA)?

- The **Food and Agricultural Organisation (FAO)** defines Climate-Smart Agriculture (CSA) as an approach that helps guide actions needed to transform and reorient agricultural systems to effectively support development and ensure **food security** in a changing climate.
- It takes into consideration the diversity of social, economic and environmental contexts, including agro-ecological zones.
- Implementation requires identification of climate-resilient technologies and practices for management of water, energy, land, crops, livestock, etc at the farm level.
- It also considers the links between agricultural production and livelihoods.
- Testing and applying different practices are important to expand the evidence base and determine what is suitable in each context.

Eco-friendly approaches for farming system

- **Zero Budget Natural Farming (ZBNF):** The concept introduced in Andhra Pradesh in 2015 is a low-input, climate-resilient type of farming that encourages farmers to use low-cost locally sourced inputs. It eliminates the use of chemical fertilisers and pesticides.
- **Organic farming:** It is a production system, which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives.
- **Regenerative Agriculture:** In regenerative agriculture bunds on nature's own inherent capacity to cope with pests, enhance soil fertility, and increase productivity.
- **Permaculture:** Permaculture is concerned with designing ecological human habitats and food production systems, and follows specific guidelines and principles in the design of these systems.

Other important approaches include

- zero tillage
 - raised bed planting
 - direct seeded rice
 - crop residue management
 - cropping diversification (horticulture, bee keeping, mushroom cultivation, etc)
- Besides, site-specific nutrient management, laser levelling, micro-irrigation, seed/fodder banks can also be adopted.

Government measures to mitigate risks of climate change on agriculture

Foreseeing the future risks of climate change, the Government of India is implementing

- **National Mission of Sustainable Agriculture (NMSA)**, one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
- Parallely, the **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** envisages “**Per Drop More Crop**”, that is, promoting micro/drip irrigation to conserve water.
- There is also a push to cluster-based organic farming through the **Paramparagat Krishi Vikas Yojana (PKVY)**.



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AGRICULTURAL MARKETING

1. Rice Export Promotion Forum (REPF)

Context: While the **Agricultural and Processed Food Products Export Development Authority (APEDA)** has been promoting rice exports through collaborations with various stakeholders in the value chains, the Union Government has set up the **Rice Export Promotion Forum (REPF)** under the aegis of the APEDA.

What is REPF?

- The body works under the **Agricultural and Processed Foods Export Promotion Development Authority (APEDA)**.
- **Focus:** To increase rice exports.
- REPF has representations from rice industry, exporters, officials from APEDA, ministry of commerce and directors of agriculture from major rice producing states including West Bengal, Uttar Pradesh, Punjab, Haryana, Telangana, Andhra Pradesh, Assam, Chhattisgarh and Odisha.

Agricultural and Processed Food Products Export Development Authority (APEDA)

- The Agricultural and Processed Food Products Export Development Authority (APEDA) was established by the Government of India under the **Agricultural and Processed Food Products Export Development Authority Act** passed by the Parliament in December, 1985.
- APEDA's thrust has been on ensuring digitalization of land records and formalization of tenancy for the farmers, which helps in boosting exports.
 - ▶ A **Market Intelligence Cell** has been constituted in APEDA and the activity of dissemination of E-market intelligence reports comprising detailed market analysis has commenced.
 - ▶ A **Farmer Connect Portal** has also been set up by APEDA on its website for providing a platform for Farmer Producers Organisations (FPOs) or Farmer Producer Companies (FPCs), Cooperatives to interact with exporters.
 - ▶ For promoting use of hybrid technology, APEDA has integrated a **Blockchain solution** into its **GrapeNet traceability platform**.
 - The GrapeNet is a web-based certification and traceability software system for monitoring fresh grapes exported from India to the European Union.
 - The **Blockchain solution**, called **APEDA Trust Chain**, helps track all the details of the export consignment, right down to the location of the vineyards.

2. e-NAM

Context: Private entities providing services such as transportation, logistics, assaying, weather forecast and fintech will be integrated into the electronic National Agriculture Market (e-NAM), a move that would make more farmers use the platform to sell their produce to buyers of their choice.

What is eNAM?

- National Agricultural Market (eNAM) is an **online trading platform** for agricultural commodities in India.
- This platform aims to create better marketing opportunities for the farmers to sell their products through a competitive and transparent price discovery system along with online payment facility for the buyers.
- The **Small Farmers Agribusiness Consortium (SFAC)** which act as the lead agency for implementing e-Nam under the **Ministry of Agriculture and Farmer's Welfare**.

Current status

- Currently, 1,000 mandis in 22 states and Union territories are integrated into the e-NAM platform, which was launched in April 2016.
- According to official data, 1.72 crore farmers, 2,050 FPOs, 2.13 lakh traders and around 1 lakh commission agents are registered with e-NAM.

3. NCDEX launched agriculture-focused indices

Context: The National Commodity Derivatives Exchange (NCDEX) has launched two agriculture-focused commodity indices **NCDEX Guarex** and **NCDEX Soydex**.

About the indices

- Guarex will track price movement in the futures contracts of its underlying Guar Seed and Guar Gum Refined Splits on a real-time basis.
- Similarly, Soydex will follow the price changes in futures contracts of Soybean and Refined Soy Oil.

What is AGRIDEX?

- NCDEX AGRIDEX is India's first return based agricultural futures Index which tracks the performance of the ten liquid commodities traded on NCDEX platform.
- The index represents the basket of ten commodities which are selected based on the liquidity on exchange platform.

4. SEBI Bans Derivative Trade in Agriculture Commodities

Context: The regulator (SEBI) has banned derivative contracts trade in chana, wheat, paddy (non-basmati), soybean and its derivatives, mustard seed and its derivatives, crude palm oil and moong on the **future's platform (NCDEX)** for a year with immediate effect.

What is derivative trading and how does it work?

- Derivative trading is when traders speculate on the future price action of an asset via the buying or selling of derivative contracts.
- The derivatives are of various types such as **Forwards and futures, Options, and Swaps.**
- It has two main purposes-
 - ▶ It is used to achieve enhanced gains when compared with buying the underlying asset outright.
 - ▶ It is also used for hedging purposes in order to alleviate risk against an existing position.
- In India, derivative trading is allowed on a number of stocks, currency, bonds and commodities. After the recent ban by SEBI, commodity trading is now allowed only in metal and energy contracts.

What is Securities and Exchange Board of India (SEBI)

- SEBI is a **statutory body** and a market regulator, which controls the securities market in India.
- It was established in 1992 in accordance with the provisions of the **Securities and Exchange Board of India Act, 1992.**
- The basic function of SEBI is to protect the interests of investors in securities and to promote and regulate the securities market.

5.**Fertiliser Shortage: Farmers Stare at Economic Distress, Black Marketing**

Context: In November 2020, a severe shortage of fertilisers had hit multiple states ahead of the Rabi harvesting season.

The state of the Indian fertilizer industry

- As one of the country's eight core industries, fertilizer production has had positive growth since 2014.
- India is among the largest consumers of fertilizers in the world, with domestic sales continually growing.
- The Indian fertilizer industry comprises of various government and private fertilizer companies which produce a variety of fertilizers:
 - ▶ **Indian Farmers Fertiliser Cooperative Limited (IFFCO)**
 - ▶ **National Fertilizers Limited**
 - ▶ **Coromandel International Limited**

What is Di-Ammonium Phosphate (DAP)?

- DAP is the second most widely used fertilizer in India after.
- Growers tend to apply this fertilizer just before or at the start of sowing, as it is high in phosphorus (P) which stimulates root growth.
- It is a basic nutrient for Rabi crops.

- **DAP (46% P, 18% Nitrogen)** is the preferred source of Phosphorus for farmers.
- This is similar to urea, which is their favorite nitrogenous fertilizer containing 46% N.
- DAP is an essential input for ensuring optimum productivity of wheat, which is sown on an area of about 35 lakh hectares in Punjab.

What about alternate fertilizers?

There are alternatives such as:

- single super phosphate (SSP)
- nitrogen phosphorous and potassium (NPK)

6. New App for Fisheries Sector

Context: Union Minister for Fisheries, Animal Husbandry and Dairying, launched a new exclusive app — the **Matsya Setu app** — which promises to be of great help to all those wanting to become aqua farmers. This has brought to our focus a deeper analysis of **Indian Fisheries' industry**.

About the app

- The app was developed by the **ICAR-Central Institute of Freshwater Aquaculture (ICAR-CIFA), Bhubaneswar**, with the funding support of the National Fisheries Development Board (NFDB), Hyderabad.
- The online course app aims to disseminate the latest freshwater aquaculture technologies to the aqua farmers of the country.
- **Matsya Setu app** has species-wise/ subject-wise self-learning online course modules, where renowned aquaculture experts explain the basic concepts and practical demonstrations on breeding, seed production and grow-out culture of commercially important fishes like carp, catfish, scampi, murrel, ornamental fish, pearl farming etc.

Fisheries sector of India

- India has a coastline of 7,516 km, an **Exclusive Economic Zone (EEZ)** of 2.02million km², and more than 1 billion people (nearly 20 percent) live in the coastal areas.
- Fisheries and aquaculture, play an important role in its economy and livelihood.
- According to the last estimates for 2017, the sector provided about 13 million jobs (4.1 million in aquaculture, 6.3 millions in inland capture, 1.9 million in marine capture and 0.5 million for others including subsistence)
- Women representing about 32 percent of the people employed in the sector.

Schemes for Fisheries sector

- Pradhan Mantri Matsya Sampada Yojana
- Blue Revolution
- Fisheries and Aquaculture Infrastructure Development Fund



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3

MAJOR CROPS

1. "Soya Meal" declared as an Essential Commodity

Context:

- The **Ministry of Consumer Affairs, Food and Public Distribution** has declared 'Soya Meal' as an **Essential Commodities** up to June 30, 2022, by amending the **Schedule of the Essential Commodities Act, 1955**.
- The Ministry has published the **Essential Commodities Order, 2021** to regulate the production, stocking and distribution of Soya Meal.

What is Essential Commodities Act?

- **The Essential Commodities Act 1955** enabled the state governments to impose stock limits and restrict movement of essential commodities.
- The 2020 Amendment removes restrictions on stocking of certain essential commodities.
- It provides that the central government can regulate the supply of food stuff only under extraordinary circumstances such as war, famine, exceptional price rise and grave natural calamities.
- It further specifies that stock limit can only be imposed if there is 50 per cent rise in retail price of non-perishable agricultural foodstuff over the price prevailing in the preceding 12 months or average retail price of last five years, whichever is lower.

What is 'essential commodity'?

- There is no specific definition of essential commodities in The EC Act.
- **Section 2(A)** of the act states that an "essential commodity" means a commodity specified in the "Schedule" of this Act.

Facts about Soybean meal

- Soybean meal is the most important protein source used to feed farm animals.
- It represents two-thirds of the total world output of protein feedstuffs, including all other major oil meals and fish meal.
- Soybeans are called as "*vegetarian meat without bones*", as they contain high amount of protein, similar to the protein in meat, egg and dairy products.
- And soybean plant is one of those few plants which provide essential amino acids that are responsible for formation of protein.
- Soybeans are good source of vitamins and minerals including **molybdenum, folate, copper, phosphorus, manganese and vitamin K**.

- Soybeans create some of their own fertilizers; they have ability to take nitrogen from the air. Microorganisms present on soybean roots can convert that nitrogen taken from air into the usable form of plant.

2. World Pulses Day 2022

Context:

- **World Pulses Day** is observed yearly on the **10th of February**. In the current year 2022, it would be the **4th time when World Pulses Day will be observed on 10, Feb.**
- World Pulses Day 2022 is under the theme “Pulses to empower youth in achieving sustainable agrifood systems”.

What are Pulses?

- **Pulses, also known as legumes**, are the edible seeds of leguminous plants cultivated for food.
 - **Dried beans, lentils and peas are the most commonly known and consumed types of pulses.**
- **The term “pulses” differentiates from “Crops”** because pulses are harvested when the seeds become dry whereas crops are harvested with their plants still green.
- Pulses are a **rich source of protein, dietary fiber and minerals** which are needed in our body whereas, **having a higher amount of nitrogen, they add to the fertility of the land and are environment-friendly.**



Pulses production in India

- The country produces a **quarter of all pulses** in the world and **consumes 27 percent** — more than any other. India is also the **largest importer of pulses**.
 - ▶ Apart from India, other countries, which produce a large number of pulses include Canada, Myanmar, China, Nigeria, Brazil, Australia, the USA, Russia, and Tanzania, while Argentina, France, Ethiopia, and Turkey.
- Madhya Pradesh is a **major pulse-producing state** in the country; it caters to 32 per cent of the country's total production.
- A large number of pulses are grown across multiple **agro-climatic zones**:
 - ▶ **Kharif**: Arhar (pigeonpea); urad (black gram); moong (green gram); barbati (cow pea), lathyrus
 - ▶ **Rabi**: gram; pea; ramjash masoor (lentil)
 - ▶ **Zaid (summer)**: urad; moong; cow pea
- Average productivity per hectare of various pulses at the national level is:
 - ▶ **Moong**: 414 kg / hectare (kharif), 577 kg / hectare (zaid)
 - ▶ **Urad**: 519 kg / hectare (Kharif), 745 kg / hectare (zaid)
 - ▶ **Arhar**: 725 kg / hectare
 - ▶ **Moth**: 382 kg / hectare
 - ▶ **Chick pea**: 932 kg / hectare
 - ▶ **Peas and beans**: 940 kg / hectare
 - ▶ **Lathyrus**: 776 kg / hectare

3. Why is India challenging WTO verdict on sugar?

Context: India recently filed an appeal with the **Appellate Body of the World Trade Organization (WTO)** disputing a verdict by the WTO's dispute settlement panel last month on sugar subsidies.

Who determines Sugarcane prices in India?

- Sugarcane prices are determined by the **Centre** as well as **States**.
- The Centre announces **Fair and Remunerative Prices (FRP)** which are determined on the recommendation of the Commission for Agricultural Costs and Prices (**CACP**) and are announced by the Cabinet Committee on Economic Affairs (**CCEA**), which is chaired by Prime Minister.
- The State Advised Prices (**SAP**) are announced by key sugarcane producing states which are generally higher than FRP.

What factors are considered for determining FRP?

According to the provisions of the Sugarcane (Control) Order 1966, fixation of FRP of sugarcane is done keeping in mind the following factors:

- Cost of production of sugarcane
- Return to the growers from alternative crops and the general trend of prices of agricultural commodities

- Availability of sugar to consumers
- Price at which sugar is sold by sugar producers
- Recovery rate of sugar from sugarcane
- The realization made from the sale of by-products such as molasses, bagasse, press mud etc.
- Reasonable margins for the growers of sugarcane on account of risk and profits.

4. National mission on edible oil

Context: The Union Cabinet has approved implementation of a new **centrally sponsored scheme National Mission on Edible Oils - Oil Palm (NMEO-OP)** to achieve **self-sufficiency** in edible oil production.

India's vegetable oil economy

- India's **vegetable oil economy** is the **world's fourth largest** after the USA, China & Brazil.
- India is the **largest edible oil importer** importing about 68% of the country's total edible oil requirement (22 MT).
- Of the total oil imported around 60% of the edible oil import is palm oil and its derivatives from Indonesia and Malaysia.
- **The Mission aims** to increase the area under cultivation for Oil Palm by an additional area of 6.5 lakh hectare thereby reaching the target of 10 lakh hectares in the next 5 years.

About Vegetable Oils

- Oilseed crops are the **second most important determinant of the agricultural economy**, next only to cereals within the segment of field crops.
- The self-sufficiency in oilseeds attained through the **"Yellow Revolution"** during early 1990's, could not be sustained beyond a short period.
- Despite being the **fifth largest oilseed crop producing country** in the world, India is also one of the largest importers of vegetable oils today.

Present Status of Vegetable Oil Production in India

- Primary sources of vegetable oil:
 - Nine oilseeds are the primary source of vegetable oils in the country, which are largely grown **under rainfed condition** over an area of about 26 million ha.
 - Among oilseeds, soybean (34%), groundnut (27%), rapeseed & mustard (27%) contributes to more than 88% of total oilseeds production in the country.
 - Mustard (35%), soybean (23%) and groundnut (25%) contribute >80% of vegetable oil production in the country.
 - Andhra Pradesh (groundnut) & Gujarat (groundnut), Haryana(Mustard), Karnataka(G. nut), M.P.(Soybean), Maharashtra(Soybean), Rajasthan (Mustard & Soybean), Tamil Nadu(G. nut), U.P(Mustard), West Bengal(Mustard) contributing more than 95% of total oilseed production in the country.
- India is producing about 7-8 million tons of vegetable oils from primary sources.
- In addition to nine oilseeds, 3 million tonnes of vegetable oil is being harnessed from **secondary sources like cottonseed, rice bran and coconut**.

About Palm Oil

- Palm oil is the world's most consumed edible oil derived from Palm fruits. It is an incredibly productive crop.
- It is used in most packaged food, cosmetics, detergents, chemicals, energy to pharmaceuticals, and even in animal feed.
- Indonesia and Malaysia are the world's largest palm oil producers.

5. Black rice and its production in India

Context: According to the UNDP's latest appraisal report, Chandauli is one of India's four most progressed districts under the Aspirational Districts. The Black rice has earned UP's Chandauli big United Nations Development Programme (UNDP) praise and good profit.

About the Black rice

- Black rice is of Chinese origin and known as 'forbidden rice'. In ancient China, it is believed to be exclusive for royal consumption.
- In India, black rice or chak-hao (delicious rice) is indigenous to Manipur for centuries.
 - ▶ Manipur was also awarded the GI tag for black rice.
- Its production across the country is mooted due to better price realization, growing international demand, and health benefits.
- The Black color of the rice is due to a compound called 'anthocyanins'.
- **Benefits:** Anthocyanins also give it powerful anti-inflammatory, antioxidant, and anti-cancer properties.
- Protein, Iron, vitamin E, calcium, magnesium, and natural fiber.
 - ▶ It also contains important carotenoids which are known for improving eye health.
 - ▶ It is naturally gluten-free.
 - ▶ It is rich in-
 - It promotes weight loss and is a natural detoxifier.
 - Its consumption helps in the prevention of ailments such as atherosclerosis, diabetes, Alzheimer's, hypertension, among others.

Production of Black rice in India

- Chandauli started producing the 'healthier' black rice in 2018.
 - ▶ It is being exported to Australia and New Zealand.
 - ▶ It was exported to the neighboring district of Mirzapur as 'Vindhya black rice'.
- Its cultivation is promoted in India under various schemes
 - ▶ 'One District-One Product'
 - ▶ 'Export Policy 2020-25'
- Simdega (Jharkhand), Sonbhadra (Uttar Pradesh), and Rajgarh (Madhya Pradesh) are areas that also produce it.

Different types of Rice

- **Brown rice** is a whole grain rice with the inedible outer husk is removed. Brown rice is a whole grain and a good source of magnesium, phosphorus, selenium, thiamine, niacin, vitamin B6, and manganese, and is high in fiber.
- **Red rice** is a variety of rice that is colored red by its anthocyanin content. It is usually eaten unhulled or partially hulled, and has a red husk.
- **Gold rice** commonly known as **African rice**.

6. Jammu's purple revolution

Context: Cultivation of lavender has changed fortunes of farmers in Jammu and Kashmir farmers who quit maize crop cultivation to take up the new crop.

What is Purple revolution?

- The Purple or Lavender Revolution was launched in 2016 by the Union **Ministry of Science & Technology** through the **Council of Scientific & Industrial Research's (CSIR) Aroma Mission**.
- The aim of the mission is to support domestic aromatic crop-based agro-economy by moving from imported aromatic oils to home grown varieties.
- Lavender cultivation is practiced in almost all the 20 districts of Jammu & Kashmir.
- Under the mission, first-time farmers were given free lavender saplings, while those who had cultivated lavender before were charged Rs. 5-6 per sapling.

Important facts about Lavender

- A Mediterranean native, Lavender (*Lavandula spica*) is an aromatic and herbal shrub.
- Highly perfumed and beautiful flowers of the plant come in a variety of colors, for example, violet, blue, pink, mauve, and white can prove an excellent addition to your garden decor.
- The plant is perennial and requires a dry and sunny climate to grow. It is usually cultivated in regions with less rainfall.
- The soil for growing these plants needs to be well-draining and rich in calcium carbonate content.

Lavender producing States

- At present, large-scale lavender cultivation is limited to J&K but governments in Himachal Pradesh, Arunahal Pradesh and Uttarakhand are also encouraging their farmers to take up lavender.
- Small scale farming of the plant is already underway in these states.

7. UP's Chandauli got UNDP praise for Black rice

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8. Saffron Bowl Project

Context: The saffron bowl of India, so far confined to parts of Kashmir, has now spread its wings to parts of the North East through the focused efforts of the North East Centre For Technology Application & Reach (NECTAR).

India cultivates about 6 to 7 tonnes of saffron while the demand is 100 tonne.

Important facts about Saffron

- Saffron is a plant whose dried stigmas (thread-like parts of the flower) are used to make saffron spice.
- Saffron cultivation is believed to have been introduced in Kashmir by Central Asian immigrants around the 1st Century BCE.
- It has been associated with traditional Kashmiri cuisine and represents the rich cultural heritage of the region.
- It is a very precious and costly product. In ancient Sanskrit literature, saffron is referred to as 'bahukam'. It is cultivated and harvested in the Karewa (highlands) of Jammu and Kashmir.

9. 'Village rice' of Tamil Nadu

Context: In a major boost to India's non-basmati rice exports potential, two consignments of 4.5 MT of patented 'village rice' of Tamil Nadu was exported to Ghana & Yemen via air & sea routes.

About the Village rice

- **Property:** It is enriched with **protein, fibre, and a variety of minerals.**
- **Source:** Village rice is **sourced directly from farmers of Thanjavur**, which is also known as rice bowl of Tamil Nadu.
- **Export promotion:** APEDA assisted Udaya Agro Farm plans (Start up) to increase volume of exports of 'village rice' in the coming months.
- **Non-basmati rice exports to African and Asian countries** from India takes place from **Kakinada, Vishakhapatnam, Chennai, Mundra and Krishnapatnam.**

10. The first consignment of 'red rice'

Context: In a major boost to India's rice exports potential, the first consignment of 'red rice' was flagged off to the USA.

About red rice

- Iron rich 'red rice' is grown in Brahmaputra valley of Assam, without the use of any chemical fertilizer.
- Red Rice is **Iron rich.**
- It is grown **without the use of any chemical fertilizer.**
- The rice variety is **referred as 'Bao-dhaan'**, which is an integral part of the Assamese food.

11. Sweet Revolution

Context: After yellow, green and white revolutions, India is witnessing a 'sweet revolution'.

What is Sweet Revolution?

- Sweet revolution, popularly known as 'beekeeping', is the government's initiative for accelerating the production of quality honey and other related products.
- The government has allocated Rs 500 crore for **National Beekeeping & Honey Mission (NBHM)** for three years (2020-21 to 2022-23) keeping in view the importance of beekeeping as part of the Integrated Farming System (IFS) in the country.
- The mission, launched as part of **Atmanirbhar Bharat scheme**, is being implemented through National Bee Board (NBB).
- The aim of the mission is to **double farmers' income**.
- Beekeeping has been useful in pollination of crops, thereby, increasing income of the farmers/beekeepers by way of increasing crop yield and providing honey and other high value beehive products.

12. Government inaugurates National conference on Agriculture for Rabi campaign 2021

Context: In order to assess the crop performance, the Government inaugurated the **National conference on Agriculture for Rabi campaign 2021**.

Rabi crops

- Rabi crops, also known as winter crops, are the crops grown in the winter season (October or November).
- Main rabi crops include wheat, gram, oat, barley, potato, and seeds like mustard, linseed, sunflower, coriander, cumin, etc.

Key differences between Kharif and Rabi crops:

	Kharif Crops	Rabi Crops
About	Kharif crops are the crops which are sown at the beginning of the rainy season, e.g. between April and May.	Rabi crops are the crops that are sown at the end of monsoon or at the beginning of winter season, e.g. between September and October.
Type	Monsoon crops	Winter or spring crops
Example	rice, maize, cotton, jowar, bajra etc.	wheat, gram, peas, barley etc.

Weather	It requires a lot of water and hot weather to grow.	A warm climate is required for seed germination and cold climate for the growth of crops.
Harvesting months	September to October	March to April

Recent government initiatives for Agriculture

- For the 2020-21 crop year, the Centre has set a target of a record foodgrains output of 301 million tonne, out of which it expects 151.65 million tonne to come from the rabi season.
- Formation of 10,000 **Farmer Producers Organisations (FPOs)**
- Rs 1 lakh crore **Agriculture Infrastructure Fund (AIF)**
- Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)**
- National Mission on Edible Oils-Oil Palm (NMEO-OP)**

13. Announcement on fortified rice

Context: A group of scientists and the activists have warned to Food Safety and Standards Authority of India (FSSAI) by writing regarding the adverse impacts on health and livelihoods and oppose the central government's plan against mandatory fortification of food items.

What are Fortified foods?

- These are those that have nutrients added to them that don't naturally occur in the food.
- These foods are meant to improve nutrition and add health benefits.

Food item	Nutrient	Level of fortification	Source nutrients
Salt	Iodine (manufacturer level) Iodine (distribution channel) Iron	Not less than 30 ppm on dry weight Not < 15 ppm on dry weight 850-1100 ppm	Potassium Iodate Potassium iodate Ferrous sulfate or ferrous fumarate
Oil	Vitamin A Vitamin D	25 IU/mg 4.5 IU/mg	Retinyl acetate, retinyl palmitate, and retinyl propionate Cholecalciferol and ergocalciferol
Milk	Vitamin A Vitamin D	770 IU 550 IU	Retinyl acetate, retinyl palmitate, and retinyl propionate Cholecalciferol and ergocalciferol
Vanispati	Synthetic Vitamin A	Not <25 IU per g	Retinyl acetate and retinyl palmitate

Atta	Iron Folic acid Vitamin B12	20 mg 1300 µg 10 µg	Sodium iron (III) ethylene diamine tetra acetate, trihydrate (sodium federate-Na Fe EDTA) Folic acid Cyanocobalamin and hydroxocobalamin
Maida	Iron Folic acid Vitamin B12	60 mg 1300 µg 10 µg	Ferrous citrate, ferrous lactate, ferrous sulfate, ferrous pyrophosphate, electrolytic iron and ferrous fumarate. Sodium iron(III) ethylene diamine tetra acetate, trihydrate (sodium federate-Na Fe EDTA) Folic acid Cyanocobalamin and hydroxocobalamin
Rice	Iron Folic acid Vitamin B12	20 mg 13 µg 10 µg	Ferric pyrophosphate, Sodium Iron (III) ethylene diamine tetra acetate, trihydrate (sodium federate-Na Fe EDTA) Folic acid Cyanocobalamin and hydroxocobalamin

- Fortification adds the key vitamins and minerals such as Iron, Iodine, Zinc, Vitamins A & D to the staple foods such as rice, wheat, oil, milk, and salt to improve their nutritional content.

Why the fortification is required for India?

- India has a very high burden of micronutrient deficiencies of Vitamin A, Iodine, Iron, and Folic Acid that leads to Night Blindness, Goitre, Anaemia and various birth defects. According to the National Family Health Survey (NFHS-4)
 - 4 % of children (6-59 months) are anemic
 - 1 % of women in the reproductive age group are anemic
 - 7 % of children under 5 are underweight

Regulation of food fortification in India

- In October 2016, FSSAI operationalized Food Safety and Standards (Fortification of Foods) Regulations, 2016 to fortify staples, to reduce the high burden of micronutrient malnutrition, namely
 - Wheat Flour and Rice (by Iron, Vitamin B12, and Folic Acid)
 - Milk and Edible Oil (by Vitamins A and D)
 - Double Fortified Salt (through Iodine and Iron)
- The '+F' logo has been notified for the identification of fortified foods.
- Food Safety and Standards (Fortification of Foods) Regulations, 2018 and amended regulations were released to regulate fortification.

14. Chemical-free Natural Farming

Context: The Centre has announced to promote chemical-free natural farming, to farmers across the country during the financial year 2022-23.

Chemical-free farming

- Organic and chemical-free farming is an agricultural approach that advocates healthy products free from components that may harm humans and nature.
- They include but are not limited to industrial pesticides, insecticides, fertilizers, clones, GMOs, chemical medications, hormones, growth boosters, etc.

What is natural farming?

- Natural farming is a system where the laws of nature are applied to agricultural practices.
- This method works along with the natural biodiversity of each farmed area, encouraging the complexity of living organisms, both plants, and animals that shape each particular ecosystem to thrive along with food plants.
- In India, Natural farming is promoted as **Bhartiya Prakritik Krishi Paddhati Programme (BPKP) under Paramparagat Krishi Vikas Yojana (PKVY)**.
 - It was developed by **Subhash Palekar** from Maharashtra in the mid-1990s as an alternative to the **Green Revolution's methods**, which led to indebtedness and suicide among farmers due to rising cost on external inputs in agriculture.

What is Zero budget natural farming (ZBNF)?

- It is a method of chemical-free agriculture drawing from traditional Indian practices.
- Using cow dung, urine based formulations and botanical extracts would help farmers in reducing the input cost.
- Intercropping with leguminous crops is one of the components of ZBNF and it improves the crop productivity and soil fertility by way of fixing the atmospheric nitrogen.
- It promotes soil aeration, minimal watering, intercropping, bunds and topsoil mulching and discourages intensive irrigation and deep ploughing.

Components of Natural Farming:

- Beejamrit:** The process includes treatment of seed using cow dung, urine and lime based formulation.
- Jivamrit:** The process enhances the fertility of soil using cow urine, dung, flour of pulses and jiggery concoction.
- Whapasa:** The process involves activating earthworms in the soil in order to create water vapour condensation.
- Mulching:** The process involves creating micro climate using different mulches with trees, crop biomass to conserve soil moisture.
- Plant Protection:** The process involves spraying of biological concoctions which prevents pest, disease and weed problems and protects the plant and improves their soil fertility.



COMPONENTS OF NATURAL FARMING



Beejamrit

The process includes treatment of seed using cow dung, urine and lime based formulations.

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The process involves activating earthworms in the soil in order to create water vapor condensation.



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4

AGRICULTURAL TECHNOLOGY

1. Drone in agriculture/Kisan drone

Context: Union Finance Minister announced in her Budget speech that the Centre will promote 'Kisan Drones' to help farmers assess crops, digitize land records as well as spray insecticides and nutrients.

Why adopt agricultural drones?

- Drone technology has gotten most of the recognition in the industry because of its diversity and considered the future for the agrarian community.
- The military initially used them. However, other sectors quickly embraced **unmanned aerial vehicles (UAVs)** when they learned about its widespread applications.

About Drone:

- Drone is a layman terminology for **Unmanned Aircraft (UA)**. There are three subsets of Unmanned Aircraft-
 - ▶ Remotely Piloted Aircraft
 - ▶ Autonomous Aircraft
 - ▶ Model Aircraft
- Based on their weight, drones can be divided into five categories:
 - ▶ **nano** (weighing up to 250 g)
 - ▶ **micro** (250 g to 2 kg)
 - ▶ **small** (2-25 kg)
 - ▶ **medium** (25-150 kg)
 - ▶ **large** (over 150 kg)

Best drone practices/application

- Irrigation Monitoring
- Crop Health Monitoring and Surveillance
- Crop Damage Assessment
- Field Soil Analysis

- Planting
- Agricultural spraying
- Livestock tracking

Benefits of drone technology

- Enhanced Production
- Greater safety of farmers
- Faster data for quick decision making
- Less wastage of resources
- Useful for Insurance claims

2.

Linking of innovative agriculture technologies to farms under Biotech-KISAN program

Context: The Centre will work towards linking innovative agricultural technologies with the farms under the **Biotech-KISAN program** in the North-eastern region.

About the Biotech-Krishi Innovation Science Application Network (Biotech-KISAN)

- Biotech-KISAN is a **scientist-farmer partnership scheme**.
- It was launched in **2017**.
- It aims for **agriculture innovation**.
- Its objective is to connect science laboratories with the farmers to find out innovative solutions and technologies to be applied at the farm level.
- So far 146 Biotech-KISAN Hubs have been established under the scheme. It covers all 15 agro-climatic zones and 110 aspirational districts in the country.
- The scheme has benefitted over two lakh farmers so far by increasing their agriculture output and income.

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5

LAND REFORMS

1. Conclusive Land Titling

Context: Niti Aayog, the country's planning body has crafted a new model bill in which states will guarantee the accuracy of 'land titles' and provide compensation in case of disputes.

Land conflicts in India

- The **World Bank** estimates about two-thirds of pending case in courts are related to land.
- **Land Conflict Watch**, a group of researchers, estimates that roughly 800 disputes in India impact 7.3 million people and threaten more than \$200 billion in investments across an area bigger than the country of Israel.
- A **NITI Aayog** study on strengthening arbitration estimated that disputes on land or real estate take an average time of 20 years in the courts to be resolved.

What is the current procedure?

- India currently follows a system of presumptive land titling. This means that land records are maintained, with information on possession, which is determined through details of past transactions.
- Ownership, then, is established on the basis of current possession.
- Land titles were now awarded, under the **Transfer of Property Act, 1882**, and **Civil Procedure Code, 1908**, on the basis of documentation and possession of the property.
- Any dispute was fought in a civil court.
- Registration of land is actually a registration of transactions, such as sale deeds, records of inheritance, mortgage and lease.
- Holding registration papers does not actually involve the government or the legal framework guaranteeing the ownership title of the land.

Conclusive land titling system

- Under a conclusive land titling system, land records designate actual ownership.
- The title is granted by the government, which takes the responsibility for accuracy.

- Once a title is granted, any other claimant will have to settle disputes with the government, not the title holder.
- Further, under conclusive land titling, the government may provide compensation to claimants in case of disputes, but the title holder is not in any danger of losing ownership.

2. 'SWAMITVA scheme'

Context: Prime Minister Narendra Modi will launch the distribution of e-property cards under the 'SWAMITVA scheme'.

What is 'Swamitva Yojana'?

- 'Swamitva Yojana' or Ownership Scheme aims to map residential land ownership in the rural sector using modern technology like the use of drones.
- It will create property ownership record of land in villages and empower rural population with grant of official document confirming their ownership of land titles.
- **Measurement:** The residential land in villages will be measured using drones to create a non-disputable record. It is the latest technology for surveying and measuring of land.
 - ▶ Drones will draw a digital map of every property falling within the geographical limits of a village and demarcate the boundaries of every revenue area.
- The scheme will be carried out in close coordination with the Central Panchayati Raj ministry, Survey of India, Panchayati Raj departments and Revenue departments of various states.

Property card

- Property card for every property in the village will be prepared by states using accurate measurements delivered by drone-mapping.
 - ▶ These cards will be given to property owners and will be recognised by the land revenue records department.
- The property records for a village will also be maintained at the Panchayat level, allowing for the collection of associated taxes from the owners.
- The money generated from these local taxes will be used to build rural infrastructure and facilities.

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SCHEMES/ PROGRAMMES

PM-KISAN:	<ul style="list-style-type: none"> ◦ The Central Sector Scheme, PM-KISAN, was created by the government to provide financial support of up to Rs 6,000 per year to small and marginalised farmers across the country.
Pradhan Mantri Krishi Sinchai Yojana (PMKSY):	<ul style="list-style-type: none"> ◦ Pradhan Mantri Fasal Bima Yojana (PMFBY) is a Government of India initiative launched in 2016. ◦ The scheme offers coverage to farmers against financial losses they incur due to unforeseen events. ◦ The policy covers the loss of crops because of local risks, post-harvest financial loss, loss due to natural disasters, unseasonal rains, pests, crop diseases, and more. ◦ The scheme works mainly under the 'One Nation, One Crop, One Premium' motto. ◦ It primarily aims to provide affordable crop insurance to the farmers of our nation.
Rashtriya Gokul Mission:	<ul style="list-style-type: none"> ◦ Rashtriya Gokul Mission (RGM) has been launched in December 2014 with an outlay of Rs 2025 crore for development and conservation of indigenous breeds through selective breeding in the breeding tract and genetic upgradation of nondescript bovine population.
Kisan Credit Card (KCC):	<ul style="list-style-type: none"> ◦ The Kisan Credit Card (KCC) scheme was introduced in 1998 for issue of Kisan Credit Cards to farmers on the basis of their holdings for uniform adoption by the banks so that farmers may use them to readily purchase agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.
National Mission for Sustainable Agriculture (NMSA):	<ul style="list-style-type: none"> ◦ For environmental sustainability, National Mission for Sustainable Agriculture (NMSA) has been launched in the year 2014-15 which aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate.

PM Kisan Maan Dhan Yojana:	<ul style="list-style-type: none"> The PM-KMY is a Central Sector Scheme, administered by the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers' Welfare, Government of India in partnership with the Life Insurance Corporation of India (LIC).
PM-KUSUM Scheme (Kisan Urja Suraksha evam Utthan Mahabhiyan):	<ul style="list-style-type: none"> PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan) Scheme is aimed at ensuring energy security for farmers in India, along with honouring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs).
'Kisan Rail':	<ul style="list-style-type: none"> The Kisan Rail initiative allows the movement of perishables such as fruits, vegetables, poultry, meat, dairy and fishery products from production/surplus regions to consumption/deficient regions.
Krishi UDAN 2.0:	<ul style="list-style-type: none"> The Krishi Udan 2.0 scheme is expected to facilitate and incentivize movement of agri-produce by air transportation.
TMA Scheme:	<ul style="list-style-type: none"> The Government of India came out with Transport and Marketing Assistance (TMA) scheme to provide financial assistance for transport and marketing of agriculture products in order to boost agriculture exports.
TRIFED and NITI AAYOG partnership for Van Dhan initiative	<ul style="list-style-type: none"> Niti Aayog and TRIFED (Tribal Cooperative Marketing Development Federation of India Limited) have joined hands for successful implementation of 'Van Dhan Yojana' in tribal clusters of aspirational districts of the country. The collaboration and partnership is aimed at a complete transformation of the tribal ecosystem across the country.
Sub-Mission on Agroforestry (SMAF) Scheme	<ul style="list-style-type: none"> In order to make agriculture less vulnerable to climatic aberrations, Government of India formulated the National Agroforestry Policy in 2014. The policy recommends for setting up of a Mission or Board to address development of agroforestry sector in an organised manner. The Sub-Mission on Agroforestry (SMAF) under NMSA is an initiative to this end. The aim of the submission is to expand the tree coverage on farmland in complementary with agricultural crops.

<p>Crop varieties with special traits:</p>	<ul style="list-style-type: none"> ◦ In September 2021, Prime Minister Narendra Modi launched 35 crop varieties with special traits such as climate resilience and higher nutrient content. ◦ The 35 crop varieties with special traits were developed by the Indian Council of Agricultural Research (ICAR). ◦ Aim: To address the twin challenges of climate change and malnutrition <ul style="list-style-type: none"> ➤ These include a drought tolerant variety of chickpea, wilt and sterility mosaic resistant pigeonpea, early maturing variety of soybean, disease resistant varieties of rice and biofortified varieties of wheat, pearl millet, maize and chickpea, quinoa, buckwheat, winged bean and faba bean. ◦ These special traits crop varieties also include those that address the anti-nutritional factors found in some crops that adversely affect human and animal health. <div data-bbox="716 954 1422 1778" style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Indian Council of Agricultural Research (ICAR)</p> <ul style="list-style-type: none"> ◦ The Indian Council of Agricultural Research (ICAR) is an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India. ◦ Formerly known as Imperial Council of Agricultural Research, it was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860 in pursuance of the report of the Royal Commission on Agriculture. ◦ Headquarters: The ICAR has its headquarters at New Delhi. ◦ Objective & Mandate: The Council is the apex body for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country. </div>
<p>PLI Scheme:</p>	<ul style="list-style-type: none"> ◦ In April 2021, the Government of India approved a PLI scheme for the food processing sector. ◦ The food processing sector in India encompasses manufacturing enterprises in all the segments from micro to large industries.

	<ul style="list-style-type: none"> India is having competitive advantage in terms of resource endowment, large domestic market and scope for promoting value added products. Achieving full potential of this sector would require Indian companies to improve their competitive strength vis-à-vis their global counterpart in term of scale of output, productivity, value addition and their linkages with the global value chain. <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>The Production Linked Incentive Scheme for Food Processing Industry has been formulated based on the Production Linked incentive scheme of NITI Aayog under “AatmaNirbhar Bharat Abhiyaan for Enhancing India’s Manufacturing Capabilities and Enhancing Exports”.</p> </div>
Other Schemes	<ul style="list-style-type: none"> Atal Bhujal Yojana Gramin Bhandaran Yojana Micro Irrigation Fund (MIF) National Mission For Sustainable Agriculture (NMSA) Krishi Sinchai Yojana (PMKSY) Kisan Samman Nidhi Paramparagat Krishi Vikas Yojana (PKVY) Rashtriya Krishi Vikas Yojana Fasal Bima Yojana (PMFBY) Farmer Income Protection Scheme (PM AASHA)

Important Organizations related to Agriculture

Ministry of Agriculture & Farmers Welfare

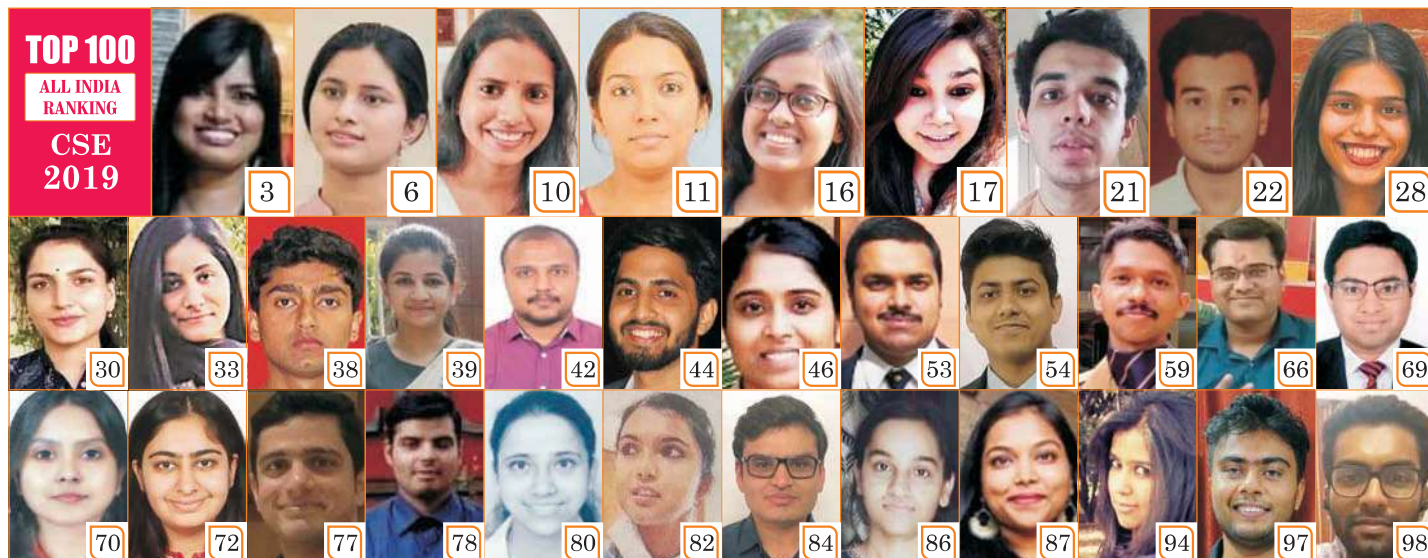
- Founded:** 1947
- The Ministry of Agriculture & Farmers Welfare is a branch of the Government of India and the apex body for formulation and administration of the rules and regulations and laws related to agriculture in India.
- Three constituent Departments of the Ministry of Agriculture & Farmers Welfare
 - Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW)
 - Department of Animal Husbandry, Dairying & Fisheries (DAHD&F)
 - Department of Agricultural Research and Education (DARE)

Indian Council of Agricultural Research

- Founded:** 1929
- The Indian Council of Agricultural Research (ICAR) is the apex body for **coordinating, guiding, and managing research and education in agriculture** in the entire country under the aegis of DARE, Ministry of Agriculture and Farmers Welfare.

TRIFED

- TRIFED was established in August 1987 under **the Multi-State Cooperative Societies Act, 1984** by the Government of India as a National level Cooperative body under the administrative control of the then **Ministry of Welfare of India**.
- **Mandate:** To bring about socio-economic development of tribals of the country by institutionalizing the trade of Minor Forest Produce (MFP) & Surplus Agricultural Produce (SAP) collected/ cultivated by them.



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