



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

# INSTA PT 2021 EXCLUSIVE

## AGRICULTURE

JUNE 2020 – MARCH 2021

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## Government Schemes / Programmes

### 1. Sub-Mission on Agroforestry (SMAF) Scheme

The Ministry of Agriculture and Farmers Welfare has signed a Memorandum of Understanding (MoU) with the Central Silk Board on a convergence model for the implementation of **Agroforestry in the silk sector** under the ongoing **Sub-Mission on Agroforestry (SMAF) Scheme**.

The signing of this MoU aims to **incentivize the farmers to take up sericulture based Agroforestry models**.

#### About the Sub-Mission on Agroforestry (SMAF):

- The Department of Agriculture, Cooperation and Farmers Welfare (DAC & FW) has been implementing the Sub-Mission on Agroforestry (SMAF) since 2016-17 as part of the recommendation of **the National Agroforestry Policy 2014**.
- This sub-mission is under **the National Mission for Sustainable Agriculture (NMSA)**.
- India was the first country to have such a comprehensive policy which was launched at the World Agroforestry Congress held in Delhi in February 2014.
- At present, the scheme is being implemented in 20 States and 2 UTs.

#### Aim of the mission:

SMAF aims to encourage farmers to plant multi-purpose trees together with the agriculture crops for climate resilience and an additional source of income to the farmers, as well as enhanced feedstock to inter alia wood-based and herbal industry.

### 2. National Agriculture Market (e-NAM)

- **E-NAM (National Agriculture Market)** is an online trading platform for agriculture produce aiming to help farmers, traders, and buyers with online trading and getting a better price by smooth marketing.
- **Small Farmers Agribusiness Consortium (SFAC)** is the lead agency for implementing eNAM under the aegis of Ministry of Agriculture and Farmers' Welfare, Government of India.

#### NAM has the following advantages:

**For the farmers**, NAM promises more options for sale. It would increase his access to markets through warehouse-based sales and thus obviate the need to transport his produce to the mandi.

**For the local trader** in the mandi / market, NAM offers the opportunity to access a larger national market for secondary trading.

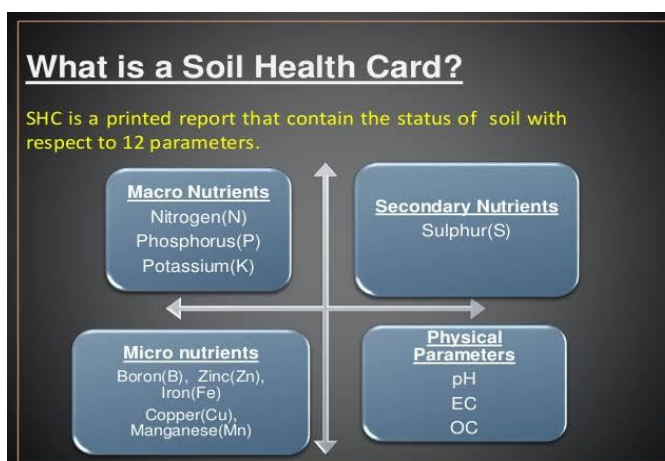
**Bulk buyers, processors, exporters etc.** benefit from being able to participate directly in trading at the local mandi / market level through the NAM platform, thereby reducing their intermediation costs.

### 3. Soil Health Card scheme

The scheme is being implemented in 32 States and UTs.

#### About the Scheme:

- Launched by the Ministry of Agriculture and Farmers' Welfare on December 5, 2015.
- Under the scheme, village level Soil Testing Labs will be set up by youth having education in agriculture, Women Self Help Groups, FPOs etc.



- The scheme also focuses on enabling employment generation after appropriate skill development.

#### What is the Soil Health Card (SHC)?

- SHC is a printed report that a farmer will be handed over for each of his holdings.
- Soil Health Card provides two sets of fertilizer recommendations for six crops including recommendations of organic manures.

**It will contain the status of his soil with respect to 12 parameters, namely:** pH, Electrical Conductivity (EC), Organic Carbon (OC), Nitrogen (N), Phosphorus (P), Potassium (K), Sulphur (S), Zinc (Zn), Boron (B), Iron (Fe), Manganese (Mn), Copper (Cu) of farm holdings.

#### Objectives of SHC:

- A SHC is meant to give each farmer soil nutrient status of his/her holding.
- Advise him / her on the dosage of fertilizers and also the needed soil amendments that s/he should apply to maintain soil health in the long run.

#### Significance of SHC:

The scheme provides for the analysis of soil composition by the State Governments once in every two years so that remedial steps can be taken to improve soil nutrients.

#### 4. Gobardhan scheme

The Ministry of Jal Shakti has launched a unified portal on the government's 'Gobardhan' scheme.

- Farmers can earn Rs 1 lakh cr in 5 yrs from Jal Shakti ministry's Gobardhan scheme, says govt.

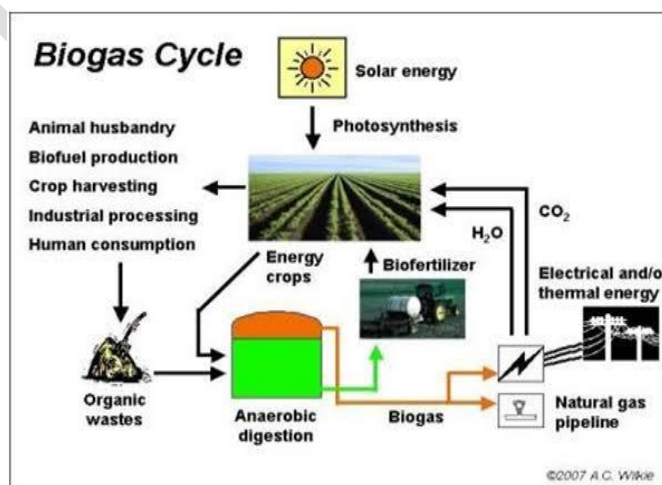
#### About the Scheme:

The **Galvanizing Organic Bio-Agro Resources Dhan (GOBAR-DHAN)** scheme is implemented under the **Swachh Bharat Mission Gramin-Phase 2**, by the Department of Drinking Water and Sanitation under the Jal Shakti ministry.

- It was **launched in 2018**.
- The scheme aims to augment income of farmers by **converting biodegradable waste into compressed biogas (CBG)**.
- The initiative aims at attracting entrepreneurs for establishing community-based CBG plants in rural areas.

#### Benefits of the scheme:

1. Helpful for the country as India is home to the highest cattle population in the world, close to 300 million in number, with a daily output of 3 million tonnes of dung.
2. Encourage farmers to consider dung and other waste not just as a waste but as a source of income.
3. Benefits to the rural people. It will be easier to keep the village clean and sanitized, livestock health will improve and farm yields will increase.
4. Increase self-reliance in energy utilized for cooking and lighting.
5. Provides a stable fuel supply in the market for oil companies and accessible credit in the market through government schemes and banks for entrepreneurs.



## 5. Rashtriya Gokul Mission

To **conserve and develop indigenous bovine breeds**, government launched '**Rashtriya Gokul Mission**' in **2014** under **the National Programme for Bovine Breeding and Dairy Development (NPBBD)**.

### What are the main objectives of the mission?

1. development and conservation of indigenous breeds.
2. undertake breed improvement programme for indigenous cattle breeds so as to improve the genetic makeup and increase the stock.
3. enhance milk production and productivity.
4. upgrade nondescript cattle using elite indigenous breeds like Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi.
5. distribute disease free high genetic merit bulls for natural service.

### How is the scheme implemented?

1. Implemented through the **"State Implementing Agency (SIA viz Livestock Development Boards)**.
2. **State Gauseva Ayogs** will be given the mandate to sponsor proposals to the SIA's (LDB's) and monitor implementation of the sponsored proposal.
3. All Agencies having a role in indigenous cattle development will be the **"Participating Agencies"** like CFSPTI, CCBFs, ICAR, Universities, Colleges, NGO's, Cooperative Societies and Gaushalas with best germplasm.

### What are Gokul Grams?

Funds under the scheme will be allocated for the establishment of **Integrated Indigenous Cattle Centres viz "Gokul Gram"**.

**Where they can be established?** Gokul Grams will be established in: i) the native breeding tracts and ii) near metropolitan cities for housing the urban cattle.

### Roles and responsibilities of Gokul Grams:

1. Act as **Centres for development of Indigenous Breeds and a dependable source for supply of high genetic breeding stock** to the farmers in the breeding tract.
2. They will be **self sustaining** and will generate economic resources from sale of **A2 milk** (A2 milk is cow's milk that mostly lacks a form of  $\beta$ -casein proteins called A1 and instead has mostly the A2 form), organic manure, vermi-composting, urine distillates, and production of electricity from bio gas for in house consumption and sale of animal products.
3. They will also function as **state of the art in situ training centre** for Farmers, Breeders and MAITRI's.
4. The Gokul Gram will **maintain milch and unproductive animals in the ratio of 60:40** and will have **the capacity to maintain about 1000 animals**. Nutritional requirements of the animals will be provided in the Gokul Gram through in house fodder production.
5. **Metropolitan Gokul Gram will focus on genetic upgradation** of urban cattle.

## 6. Pradhan Mantri Fasal Bima Yojana (PMFBY)

To ensure timely settlements of claims under **Pradhan Mantri Fasal Bima Yojana (PMFBY)**, the **Directorate General of Civil Aviation (DGCA)** has approved the proposal of the department of agriculture for flying drones over 100 districts growing rice and wheat.

- This is the first remote sensing technology based largest pilot study in the country so far, conducted for crop yield estimation.

### About PMFBY:

- Launched in 2016.



- Merged schemes include National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS).
- It aims to reduce the premium burden on farmers and ensure early settlement of crop assurance claim for the full insured sum.

**Coverage:**

The Scheme covers all Food & Oilseeds crops and Annual Commercial/Horticultural Crops for which past yield data is available and for which requisite number of Crop Cutting Experiments (CCEs) are being conducted under General Crop Estimation Survey (GCES).

**PMFBY to PMFBY 2.0:**

**Completely Voluntary:** It has been decided to make enrolment 100% voluntary for all farmers from 2020 Kharif.

**Limit to Central Subsidy:** The Cabinet has decided to cap the Centre's premium subsidy under these schemes for premium rates up to 30% for unirrigated areas/crops and 25% for irrigated areas/crops.

**More Flexibility to States:** The government has given the flexibility to states/UTs to implement PMFBY and given them the option to select any number of additional risk covers/features like prevented sowing, localised calamity, mid-season adversity, and post-harvest losses.

**Penalising the Pendency:** In the revamped PMFBY, a provision has been incorporated wherein if states don't release their share before March 31 for the Kharif season and September 30 for rabi, they would not be allowed to participate in the scheme in subsequent seasons.

**Investing in ICE Activities:** Insurance companies have to now spend 0.5% of the total premium collected on information, education and communication (IEC) activities.

**7. Pradhan Mantri Kisan Samman Nidhi (PM KISAN)**

- It is implemented as a central sector scheme by the Government of India.
- This scheme was introduced to augment the source of income of many small and marginal farmers.
- Under the Scheme an amount of Rs.6000/- per year is transferred directly into the bank accounts of the farmers, subject to certain exclusion criteria relating to higher income status.
- The entire responsibility of identification of beneficiaries rests with the State / UT Governments.

**Ambit:**

The Scheme initially provided income support to all Small and Marginal Farmers' families across the country, holding cultivable land upto 2 hectares. Its ambit was later expanded w.e.f. 01.06.2019 to cover all farmer families in the country irrespective of the size of their land holdings.

**Exceptions:**

Affluent farmers have been excluded from the scheme such as Income Tax payers in last assessment year, professionals like Doctors, Engineers, Lawyers, Chartered Accountants etc and pensioners drawing at least Rs.10,000/- per month (excluding MTS/Class IV/Group D employees).

***What is a small and marginal landholder family?***

It comprises of husband, wife and minor children up to 18 years of age, who collectively own cultivable land up to two hectares as per the land records of the concerned states.

**Similar programmes by states:**

1. Bhavantar Bhugtan Yojana- MP.
2. The Rythu Bandhu scheme- Telangana.

3. Krushak Assistance for Livelihood and Income augmentation (KALIA)- Odisha.

## 8. TRIFOOD Parks

TRIFOOD Parks to be set up in Madhya Pradesh.

- It is a joint initiative of TRIFED (under the Ministry of Tribal Affairs) and the Ministry of Food Processing.
- TRIFOOD Parks are food processing centres aiming at promoting value addition to minor forest produce.
- It was launched under the Van Dhan Yojana in 2020.
- The parks procure raw materials from the Van Dhan Kendras and process them to be sold across the country through Tribes India outlets.
- The minimum support price for minor forest produce is fixed by the Tribal Affairs Ministry and it is revised every three years by a pricing cell constituted under the Ministry.

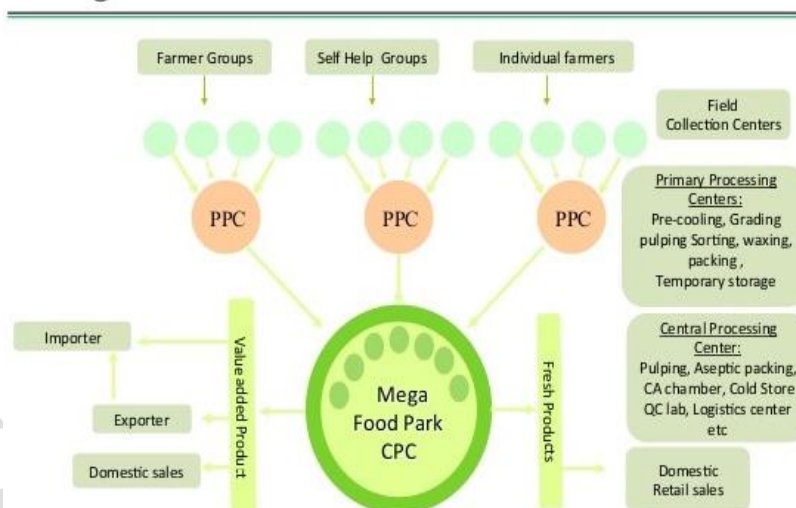
## 9. Mega Food Park

**Ministry of Food Processing Industries** is implementing Mega Food Park Scheme in the country since 2008.

It aims at providing a **mechanism to link agricultural production to the market** by bringing together farmers, processors and retailers.

- **Significance:** These food parks give a major boost to the food processing sector by adding value and reducing food wastage at each stage of the supply chain with particular focus on perishables.
- **Funding:** A maximum grant of Rs 50 crore is given for setting up a MFP, in minimum 50 acres of contiguous land with only 50% contribution to the total project cost.

**Mega Food Park Model: An Illustration**



### Mode of operation:

The Scheme has a **cluster-based approach based on a hub and spokes model**.

- It includes creation of infrastructure for primary processing and storage near the farm in the form of Primary Processing Centres (PPCs) and Collection Centres (CCs) and common facilities and enabling infrastructure at Central Processing Centre (CPC).

### Implementation:

Implemented by a **Special Purpose Vehicle (SPV)** which is a Body Corporate registered under the Companies Act.

**State Government, State Government entities and Cooperatives are not required to form a separate SPV** for implementation of Mega Food Park project.

- Subject to fulfillment of the conditions of the Scheme Guidelines, the funds are released to the SPVs.



## 10. Essential Commodities Act

When retail prices of onion reached nearly Rs 100 per kg in some cities, the government had invoked provisions of **the Essential Commodities Act, 2020**, and imposed **onion stock limits of 25 metric tonnes (MT) for wholesalers, and 2 MT for retailers.**

### About the Essential Commodities (Amendment) law:

It allows it to regulate perishable commodities in an **extraordinary situation of price-rise.**

Under provisions of this law, **any action on imposing stock limit will be based on price-rise.**

- An **order for regulating stock limit may be issued only if** there is “100% increase in retail price of horticultural produce; or 50% increase in retail price of non-perishable agricultural foodstuffs”, over the price prevailing immediately preceding 12 months, or average retail price of last five years, whichever is lower.

### What are the extraordinary circumstances mentioned in the Bill?

(i) war, (ii) famine, (iii) extraordinary price rise and (iv) natural calamity of grave nature.

### Exemptions under the law:

Exemptions from stock-holding limits will be provided to processors and value chain participants of any agricultural produce, and orders relating to the PDS.

## 11. Pradhan Mantri Matsya Sampada Yojana

1. It is a scheme for focused and sustainable **development of fisheries sector** in the country.
2. Rs. 20,050 crores has been sanctioned for its **implementation during a period of 5 years from FY 2020-21 to FY 2024-25 in all States/Union Territories**, as a part of **AatmaNirbhar Bharat Package.**
3. The scheme **focuses on beneficiary-oriented activities in Marine, Inland fisheries and Aquaculture.**
4. It seeks to adopt **‘Cluster or Area based approaches’.**

### Aims and targets of the scheme:

1. Enhance fish production by an additional 70 lakh tonne by 2024-25.
2. Increase fisheries export earnings to Rs.1,00,000 crore by 2024-25.
3. Double incomes of fishers and fish farmers.
4. Reduce post-harvest losses from 20-25% to about 10%.
5. Generate additional 55 lakhs direct and indirect gainful employment opportunities in fisheries sector and allied activities.

### Uniqueness of the scheme:

While aiming to consolidate the achievements of **Blue Revolution Scheme**, PMMSY envisages **many new interventions** such as fishing vessel insurance, support for new/up-gradation of fishing vessels/boats, Bio-toilets, Aquaculture in saline/alkaline areas, Sagar Mitras, FFPOs/Cs, Nucleus Breeding Centres, Fisheries and Aquaculture start-ups, Incubators, etc.

### Other initiatives announced at the launch of PMMSY scheme:

1. Establishment of **Fish Brood Bank at Sitamarhi.**
2. **Aquatic Disease Referral Laboratory** at Kishanganj.
3. **One-unit fish feed mill** at Madhepura and **two units of ‘Fish on Wheels’** assisted at Patna under Blue Revolution.
4. **Comprehensive Fish Production Technology Centre** at Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar.

## 12. Rashtriya Krishi Vikas Yojana

**Ministry of Agriculture** funding start-ups under the innovation and agripreneurship component of **Rashtriya Krishi Vikas Yojana in 2020-21**.

### **Background:**

A component, Innovation and Agri-entrepreneurship Development programme has been launched under **Rashtriya Krishi Vikas Yojana** in order to promote innovation and agripreneurship by providing financial support and nurturing the incubation ecosystem.

- These start-ups are in various categories such as agro-processing, artificial intelligence, digital agriculture, farm mechanisation, waste to wealth, dairy, fisheries etc.

### **About Rashtriya Krishi Vikas Yojana:**

**RKVY scheme was initiated in 2007** as an umbrella scheme for ensuring holistic development of agriculture and allied sectors.

The scheme **incentivizes States to increase public investment in Agriculture & allied sectors**.

- The Cabinet has approved (as on 1st November 2017) for the continuation of the ongoing Centrally Sponsored Scheme (State Plans) – Rashtriya Krishi Vikas Yojana (RKVY) as **Rashtriya Krishi Vikas Yojana- Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR)**.

**The main objective of Rashtriya Krishi Vikas Yojana is to develop farming as a main source of economic activity. Some of the objectives also include:**

1. Risk mitigation, strengthening the efforts of the farmers along with promoting agri-business entrepreneurship through the creation of agri-infrastructure.
2. Providing all the states with autonomy and flexibility in making plans as per their local needs.
3. Helping farmers in increasing their income by encouraging productivity and promoting value chain addition linked production models.
4. To reduce the risk of farmers by focusing on increasing the income generation through mushroom cultivation, integrated farming, floriculture, etc.
5. Empowering the youth through various skill development, innovation and agri-business models.

### **Funding:**

**RKVY-RAFTAAR** will continue to be implemented as a Centrally Sponsored Scheme in the ratio of 60: 40 (Government of India and State Share respectively) except in the case of northeastern and hilly states where the sharing pattern is 90:10. For UTs the grant is 100% as Central share.

## 13. Krishi Megh

Union Minister of Agriculture & Farmers' Welfare virtually launched **the Krishi Megh (National Agricultural Research & Education System -Cloud Infrastructure and Services)**.

### **What is it?**

- Krishi Megh is **the data recovery centre of ICAR** (Indian Council of Agricultural Research).

### **Details:**

- **Krishi Megh** has been set up under **the National Agricultural Higher Education Project (NAHEP)**.
- The data recovery centre has been set up at **National Academy of Agricultural Research Management (NAARM), Hyderabad**.

### **Significance and benefits of Krishi Megh:**

- Krishi Megh is equipped with the latest artificial intelligence and deep learning software for building and deploying of deep learning-based applications through image analysis, disease identification in livestock, etc.
- It enables the farmers, researchers, students and policymakers to be more equipped with the updated and latest information regarding agriculture and research.

#### **National Agricultural Higher Education Project (NAHEP):**

The project is **funded by both the government of India and the World Bank.**

The overall objective of the project is **to provide more relevant and high-quality education to the agricultural university students** that is in tune with the New Education Policy - 2020.

### 14. Agriculture Infrastructure Fund

Prime Minister Narendra Modi launched the financing facility of Rs 1 lakh crore under **the Agriculture Infrastructure Fund.**

- The fund has been launched as part of '**Atmanirbhar Bharat**' (self-reliant India) to make farmers self-reliant.

#### **About the Agriculture Infrastructure Fund:**

It is a new **pan India Central Sector Scheme.**

- **The scheme shall provide 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 financial support.
- The duration of the Scheme shall be from FY2020 to FY2029 (10 years).

#### **Eligibility:**

Under the scheme, **Rs. One Lakh Crore will be provided by banks and financial institutions as loans** to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, farmer producer organisations (FPOs), SHGs, Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Startups etc.

#### **Interest subvention:**

All loans under this financing facility will have **interest subvention of 3% per annum up to a limit of Rs. 2 crore.** This subvention will be available for a maximum period of seven years.

#### **Credit guarantee:**

- Credit guarantee coverage will be available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore.
  - The fee for this coverage will be paid by the Government.
- In case of FPOs the credit guarantee may be availed from the facility created under FPO promotion scheme of Department of Agriculture, Cooperation & Farmers Welfare (DACFW).

#### **Management of the fund:**

- It will be managed and monitored through an online Management Information System (MIS) platform.
- The National, State and District level Monitoring Committees will be set up to ensure real-time monitoring and effective feed-back.

### 15. Sahakar Mitra scheme

- It is **an initiative by National Cooperative Development Corporation (NCDC)**

- It would also **provide an opportunity to professionals from academic institutions** to develop leadership and entrepreneurial roles through cooperatives as Farmers Producers Organizations (FPO).
- Under the programme, **each intern will get financial support over a 4 months internship period.**

#### Eligibility:

- Professional graduates in disciplines such as Agriculture and allied areas, IT etc. will be eligible for internship.
- Professionals who are pursuing or have completed their MBA degrees in Agri-business, Cooperation, Finance, International Trade, Forestry, Rural Development, Project Management etc. will also be eligible.

#### Significance and expected impacts of the scheme:

Assist cooperative institutions access new and innovative ideas of young professionals.

The interns gain experience of working in the field giving confidence to be self-reliant.

It is expected to be a **win-win situation both for cooperatives as well as for the young professionals.**

#### Additional information:

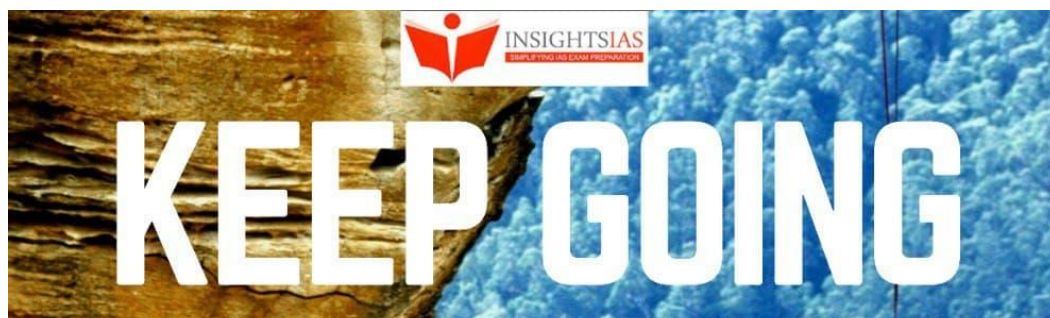
- **National Cooperative Development Corporation (NCDC)** was established by an Act of Parliament in 1963 under **Ministry of Agriculture & Farmers Welfare**. It has many regional centres to provide the financial assistance to Cooperatives/Societies/Federations.
- FPO is a **Producer Organisation (PO)** where **the members are farmers**. **Small Farmers' Agribusiness Consortium (SFAC)** is providing support for the promotion of FPOs.

### 16. Formation and Promotion of 10,000 new Farmer Producer Organizations (FPOs)

- Government of India has launched a new Central Sector Scheme titled "Formation and Promotion of 10,000 Farmer Produce Organizations (FPOs)"
- FPOs are to be developed in produce clusters, wherein agricultural and horticultural produces are grown / cultivated for leveraging economies of scale and improving market access for members.
- **"One District One Product"** cluster to promote specialization and better processing, marketing, branding & export.
- Further Agriculture value chain organizations forming FPOs and facilitating 60% of market linkages for members produce.
- Formation & Promotion of FPOs are to be done through the Implementing Agencies (IAs). Presently 09 Implementing Agencies (IAs) have been finalized for formation and promotion of FPOs viz.
  - Small Farmers Agri-Business Consortium (SFAC),
  - National Cooperative Development Corporation (NCDC),
  - National Bank for Agriculture and Rural Development (NABARD),
  - National Agricultural Cooperative Marketing Federation of India (NAFED),
  - North Eastern Regional Agricultural Marketing Corporation Limited (NERAMAC),
  - Tamil Nadu-Small Farmers Agri-Business Consortium (TN-SFAC),
  - Small Farmers Agri-Business Consortium Haryana (SFACH),
  - Watershed Development Department (WDD)- Karnataka &
  - Foundation for Development of Rural Value Chains (FDRVC)- Ministry of Rural Development (MoRD).



- Implementing Agencies (IAs) will engage Cluster Based Business Organizations (CBBOs) to aggregate, registered & provide professional handholding support to each FPO for a period of 5 years.



AT TIMES, YOU MAY FAIL, YOU MAY FALL, YOU MAY GET DISHEARTENED. BUT KEEP GOING





## Issues related to direct and indirect farm subsidies and Minimum Support Prices

### 1. Minimum selling price for sugar

Price of sugar are market driven & depends on demand & supply of sugar. However, with a view to protect the interests of farmers, concept of **Minimum Selling Price (MSP)** of sugar was introduced in 2018 so that industry may get atleast the minimum cost of production of sugar.

- In exercise of the powers conferred under **the Essential Commodities Act, 1955**, Government has notified Sugar Price (Control) Order, 2018.
- Under the provisions of said order, Government will fix the Minimum Selling Price (MSP).
- MSP of sugar has been fixed taking into account the components of **Fair & Remunerative Price (FRP)** of sugarcane and minimum conversion cost of the most efficient mills.

#### Background:

The Federal/Central Government announces Fair and Remunerative Prices 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, which is chaired by Prime Minister.

### 2. MSP (minimum support price)

The MSP (minimum support price) **assures the farmers of a fixed price for their crops.**

#### How was the MSP fixed earlier?

The **Commission for Agricultural Costs & Prices (CACP)** in the Ministry of Agriculture would recommend MSP.

#### The list of crops are as follows.

- Cereals (7) - paddy, wheat, barley, jowar, bajra, maize and ragi
- Pulses (5) - gram, arhar/tur, moong, urad and lentil
- Oilseeds (7) - groundnut, rapeseed/mustard, toria, soyabean, sunflower seed, sesamum, and nigerseed
- Raw cotton
- Raw jute
- Copra
- De-husked coconut
- Sugarcane (Fair and remunerative price)
- Virginia flu cured (VFC) tobacco

The CACP considered various factors while recommending the MSP for a commodity:

- Cost of production
- Changes in input prices
- Input-output price parity
- Trends in market prices
- Demand and supply
- Inter-crop price parity
- Effect on industrial cost structure
- Effect on cost of living
- Effect on general price level
- International price situation
- Parity between prices paid and prices received by the farmers.
- Effect on issue prices and implications for subsidy

**What changed with the Union Budget for 2018-19?**

The Budget for 2018-19 announced that MSPs would henceforth be fixed at **1½ times of the production costs for crops as a “pre-determined principle”**.

- Simply put, **the CACP’s job now was only to estimate production costs for a season and recommend the MSPs by applying the 1.5-times formula.**

**Which production costs were taken in fixing the MSPs?**

The CACP’s ‘Price Policy for Kharif Crops: The Marketing Season 2018-19’ report stated that **its MSP recommendation was based on 1.5 times the A2+FL costs.**

- **‘A2’** covers all paid-out costs directly incurred by the farmer in cash and kind on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.
- **‘A2+FL’** includes A2 plus an imputed value of unpaid family labour. ‘

It does not take into account **C2 costs**. ‘C2’ is a more comprehensive cost that factors in rentals and interest forgone on owned land and fixed capital assets, on top of A2+FL.

How can MSP be made legally binding?

There are two ways it can be done.

- The first is to **force private buyers to pay it. In this case, no crop can be purchased below the MSP**, which would also act as the floor price for bidding in mandi auctions.
- The second route is, of course, the government itself buying the entire crop that farmers offer at the MSP.

**Kerala has become the first state in the country to fix the minimum support price (MSP) for vegetables.**

## Major crops, cropping patterns in various parts of the country

### 1. Tea production in India

India accounts for **14% of global tea exports** and **nearly 20% of the tea produced in the country is exported**, according to Tea Board India.

India is:

1. The largest consumer of tea in the world.
2. The second largest producer of tea in the world.
3. The fourth largest exporter of tea in the world.

#### Places where tea is grown in India:

Tea cultivation and plantation is practiced in Assam, Darjeeling, Nilgiri Hills of South India and Tarai along the foothills of the Himalayas.

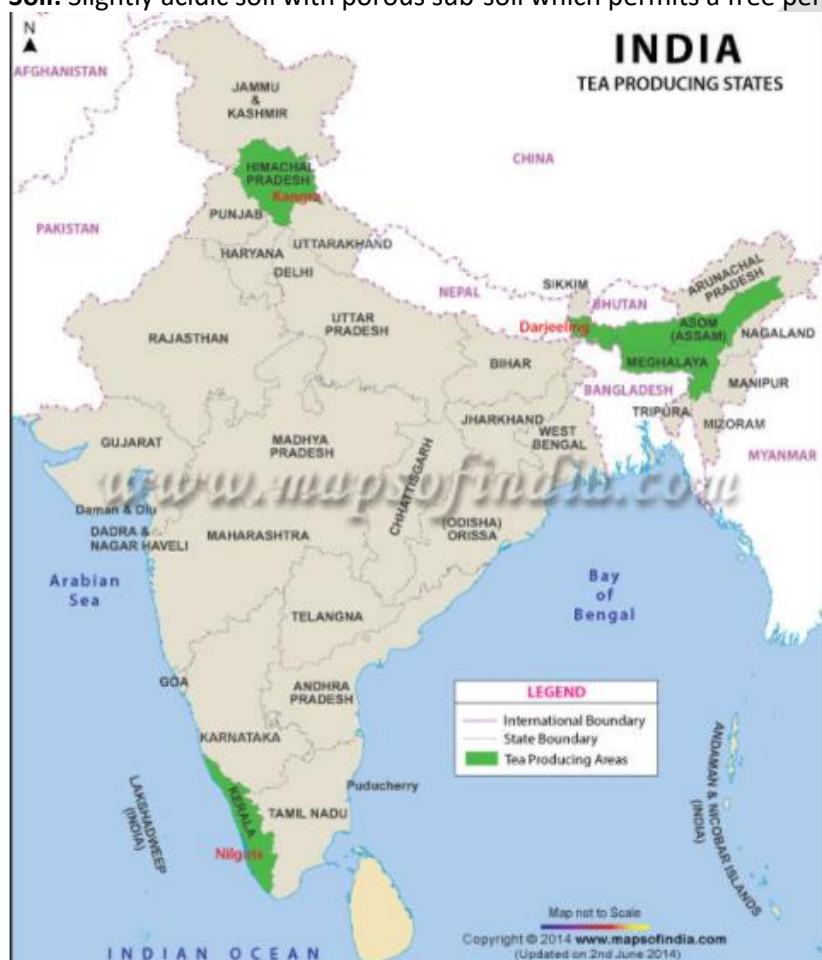
#### Conditions of Growth:

**Climate:** Tea is a tropical and sub-tropical plant and grows well in hot and humid climate.

**Temperature:** 20°-30°C.

**Rainfall:** 150-300 cm annual rainfall.

**Soil:** Slightly acidic soil with porous sub-soil which permits a free percolation of water.



### 2. Pulses

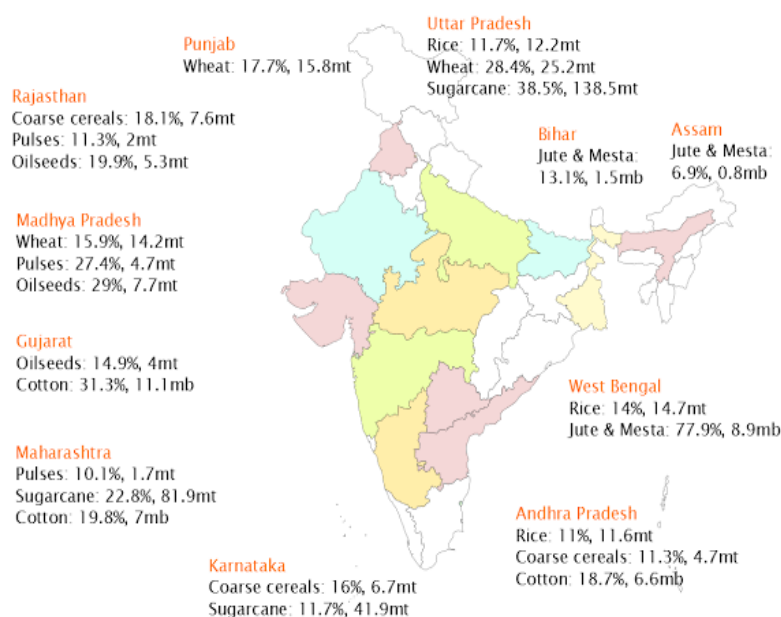
February 10 is a designated global event to recognize and emphasize the importance of pulses and legumes as a global food.

- The UN General Assembly adopted 2016 as the International Year of Pulses (IYP).

World Pulses Day 2021 Theme: #LovePulses.

**Key Points:**

- India is the **biggest producer and consumer of pulses in the world** and it has almost achieved self-sufficiency in pulses.
- India accounted for **23.62% of world's total pulses production in 2019-20**.
- In the last five-six years, India has increased pulses production from 140 lakh tonnes to more than 240 lakh tonnes.
- MP is leading producer of pulses along with Maharashtra, UP, Rajasthan and Karnataka.

**Major crops, main states**

.....  
 Data from Directorate of Economics and Statistics, Department of Agriculture Cooperation and Farmers' Welfare, Ministry of Agriculture, Government of India. Data for 2014-15. Production quantities in million tons (jute & mesta, and cotton in million bales). State's production of a major crop expressed as per cent of country total. Visualisation by Rahul Goswami, 2016.

**Benefits of pulses:**

- Pulses are rich in nutritional and protein values and are an important part of a healthy diet.
- Pulses, and legumes (lentils, peas, chickpeas, beans, soybeans, and peanuts) play an equally important role in health maintenance and overall improvement.
- Pulses also contribute majorly to achieving the goals of the 2030 Agenda of Sustainable Development.
- Pulses play a critical role in marking challenges of poverty, food chain security, degraded health, and climate change.
- Pulses and legume crops help in improving the feasibility of agricultural production systems.
- Pulses contribute to environmental benefits. The nitrogen-fixing properties of pulses improve soil fertility, which increases the productivity and fertility of the farmland.
- Pulses are important for a healthy diet.

**3. GI tag sought for India's costliest mushroom**

A geographical indication (GI) tag has been sought for one of the costliest mushrooms in the world that grows in Jammu and Kashmir's Doda district.

**Key Points:**

- Locally called **Gucchi, or Morel**, the mushroom, priced at over ₹20,000 a kg, is a forest produce collected by local farmers and tribals.
- It is said to have medicinal and anti-inflammatory properties.
- It is found in the temperate forests.

**4. Saffron**

- The **saffron bowl**, which was so far confined to Kashmir, may soon expand to the North East of India.
- Plants from seeds transported from Kashmir to Sikkim and acclimatized there are now flowering in Yangyang in the Southern part of the North-East state.
- The **North East Centre For Technology Application and Reach (NECTAR)** has undertaken a pilot project to explore the feasibility of growing saffron in North East region of the country.

**Background:** Pampore region, in India, commonly known as **Saffron bowl of Kashmir**, is the main contributor to saffron production, followed by Budgam, Srinagar, and Kishtwar districts.

## 5. Jute

Cabinet approves Extension of Norms for Mandatory Packaging in Jute Materials.

- Now, **100% of the foodgrains and 20% of the sugar shall be mandatorily packed in diversified jute bags.**

### Background:

Under the **Jute Packaging Materials (Compulsory use in Packing Commodities) Act, 1987**, the Government is required to consider and provide for the compulsory use of jute packaging material in the supply and distribution of certain commodities in the interest of production of raw jute and jute packaging material and of persons engaged in the production thereof.

### About Jute:

Known as the '**golden fibre**', jute is one of the longest and most used natural fibre for various textile applications.

- It thrives in **tropical lowland areas with humidity of 60% to 90%**. Jute is a **rain-fed crop** with little need for fertilizer or pesticides.
- India is the world's largest producer of raw jute** and jute goods.
- The cultivation of jute in India is mainly confined to the eastern region of the country.
- Jute fibers are composed primarily of the plant materials cellulose and lignin.
- The jute plant needs a plain alluvial soil and standing water. The suitable climate for growing jute (warm and wet) is offered by the monsoon climate, during the monsoon season.
- The **first jute mill was established at Rishra** (Bengal - now in West Bengal), on the river Hooghly near Calcutta in the year 1855, by Mr. George Aclend.
- In 1959, **the first power driven weaving factory was set up.**

## 6. World Cotton Day

**Second World Cotton Day** was observed on **7th October 2020**.

The event is organised in collaboration with the Secretariats of the :

- United Nations Food and Agriculture Organization (FAO)
- The United Nations Conference on Trade and Development (UNCTAD)
- The International Trade Centre (ITC) and the
- International Cotton Advisory Committee (ICAC).

**Genesis:** This event stems from the **Cotton-4's** official application for the recognition of a World Cotton Day by the United Nations General Assembly.

- Cotton- 4 Countries:** Benin, Burkina Faso, Chad and Mali.

### Key points:

- On the occasion, the Union Textiles Minister launched the first-ever brand and logo for Indian cotton.
- Now India's premium cotton would be known as '**Kasturi Cotton**' in the world cotton trade.
- The Kasturi Cotton brand will represent Whiteness, Brightness, Softness, Purity, Lustre, Uniqueness and Indianness.
- India is the **largest cotton producer** and the **largest consumer of cotton in the world.**

Region/State	2019-20*	2018-19
All India	354.5	312.0
Gujarat	100.0	88.0
Maharashtra	80.0	70.0
Telangana	48.0	35.0
Rajasthan	29.0	28.0
Haryana	26.0	23.0
Karnataka	20.0	15.5
Madhya Pradesh	16.0	23.0
Andhra Pradesh	15.0	12.0
Punjab	10.5	8.5
Tamil Nadu	5.0	5.0
Others	5.0	4.0





- India accounts for about 26% of the world cotton production.
- Cotton is the **kharif crop** of tropical and sub-tropical areas and requires uniformly high temperature varying between 21°C and 30°C.
- The growth of cotton is retarded when the temperature falls below 20°C.
- Cotton requires a clear sky during the flowering stage.
- **Frost is the enemy for cotton plant** and it is grown in areas having at least 210 frost free days in a year.
- Only light-rainfall (50 to 100 centimetres) is preferred. Cotton can also be cultivated under irrigated conditions.
- A light well-drained soil capable of retaining moisture is ideally suited for the cultivation of the crop. Black cotton soil is preferred.
- There are three cotton-growing areas in India –
  - Parts of Punjab, Haryana and northern Rajasthan in the north-west,
  - Gujarat and Maharashtra in the west and
  - Plateaus of Telengana, Andhra Pradesh, Karnataka and Tamil Nadu in the south.
- Leading producers are Gujarat, Maharashtra and Telangana.

## 7. Asafoetida

Scientists at CSIR-Institute of Himalayan Bioresource, Palampur (IHBT), are on a mission to grow heeng in the Indian Himalayas. The first sapling has been planted in Himachal Pradesh's Kwarling village in Lahaul valley.

- Asafoetida, or **heeng**, is a common ingredient in most Indian kitchens.
- Heeng is not cultivated in India.
- India imports Rs 600 crore worth of this pungent flavoured herb every year.
- It is a **perennial plant**. The plant stores most of its nutrients inside its deep fleshy roots.
- Asafoetida is **endemic to Iran and Afghanistan**, the main global suppliers.
- It **thrives in dry and cold desert conditions**.



## 8. Organic farming in India

1. **India ranks first in number of organic farmers and ninth in terms of area under organic farming.**
2. **Sikkim became the first State in the world to become fully organic** and other States including **Tripura and Uttarakhand have set similar targets.**
3. Lakshadweep is second after Sikkim to achieve the status of 100% organic region. It is first in the Union Territories of India to achieve the status.
4. **North East India has traditionally been organic** and the consumption of chemicals is far less than rest of the country.
5. Similarly, **the tribal and island territories** are being nurtured to continue their organic story.
6. **The major organic exports from India have been** flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses.

**Government initiatives to support organic farming:**

**Mission Organic Value Chain Development for North East Region (MOVCDNER)** and

**Paramparagat Krishi Vikas Yojana (PKVY)** launched in 2015 to encourage chemical free farming.

Organic Farming has also been supported under other Schemes viz **Rashtriya Krishi Vikas Yojana (RKVY)** and **Mission for Integrated Development of Horticulture (MIDH)**, Network Project on Organic Farming under ICAR. Third party certification of organic farming is promoted by Agriculture Processed Food and Export Development Authority (APEDA), Ministry of Commerce.

**About MOVCDNER:**

- Ministry of Agriculture and Farmers Welfare has launched this Central Sector Scheme named “Mission Organic Value Chain Development for North Eastern Region” (MOVCDNER) for implementation in the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The scheme aims at **development of certified organic production** in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification and creation of facilities for collection, aggregation, processing, marketing and brand building initiative.
- The assistance is provided for cluster development, on/off farm input production, supply of seeds/planting materials, setting up of functional infrastructure, establishment of integrated processing unit, refrigerated transportation, pre-cooling/ cold stores chamber, branding, labelling and packaging, hiring of space, hand holdings, organic certification through third party, mobilization of farmers/processors etc.

**Paramparagat Krishi Vikas Yojana (PKVY):**

- Paramparagat Krishi Vikas Yojana is an elaborated **component of Soil Health Management** (SHM) of major project National Mission of Sustainable Agriculture (NMSA).

**Implementation:**

- Under PKVY Organic farming is promoted through the adoption of the organic village by cluster approach and PGS certification.
- Fifty or more farmers will form a cluster having 50-acre land to take up the organic farming under the scheme.
- The produce will be pesticide residue free and will contribute to improving the health of the consumer.

**What is organic farming?**

- It is an agricultural process that uses biological fertilizers and pest control acquired from animal or plant waste.
- It is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity.

## Recent Developments / Technologies

### 1. Bao-dhaan

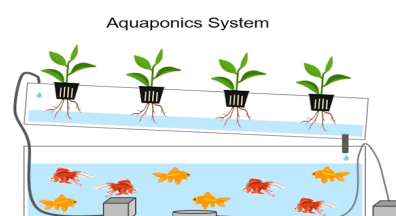
Assam's Bao-dhaan is being exported to America now.

- Iron-rich 'red rice' is grown in the Brahmaputra Valley of Assam without the use of any chemical fertilizer.
- This variety of rice is referred to as 'Bao-dhaan', which is an integral part of the Assamese food culture.



### 2. Aquaponics:

- Aquaponics is an emerging **technique in which both fishes as well as the plants are grown in an integrated manner.**
- The fish waste provides fertilizer for growing plants. The plants absorb nutrients and filter the water. This filtered water is used to replenish the fish tank. This is an environment friendly technique.



### 3. Direct seeding of rice

**What is Direct Seeding of Rice (DSR)?**

Here, the **pre-germinated seeds are directly drilled into the field by a tractor-powered machine.** There is **no nursery preparation or transplantation involved in this method.** Farmers have to only level their land and give one pre-sowing irrigation.

**How is it different from conventional method?**

In **transplanting paddy**, farmers prepare nurseries where **the paddy seeds are first sown and raised into young plants.**

The nursery seed bed is 5-10% of the area to be transplanted. **These seedlings are then uprooted and replanted 25-35 days later in the puddled field.**

**Advantage of DSR:**

**Water savings.** The first irrigation (apart from the pre-sowing rauni) under DSR is necessary only 21 days after sowing. This is unlike in transplanted paddy, where watering has to be done practically daily to ensure submerged/flooded conditions in the first three weeks.

**Less Labour.** About three labourers are required to transplant one acre of paddy at almost Rs 2,400 per acre.

**The cost of herbicides** under DSR will not exceed Rs 2,000 per acre.

**Reduce methane emissions** due to a shorter flooding period and decreased soil disturbance compared to transplanting rice seedlings.

**Limitations:**

- **Non-availability of herbicides.**
- The **seed requirement for DSR is also high**, 8-10 kg/acre, compared to 4-5 kg/acre in transplanting.
- Further, **laser land levelling is compulsory in DSR.** This is not so in transplanting.
- The sowing needs to be done timely so that the plants have come out properly before the monsoon rains arrive.

### 4. GM Seeds

Genetic engineering aims to **transcend the genus barrier by introducing an alien gene in the seeds** to get the desired effects. The **alien gene could be from a plant, an animal or even a soil bacterium.**

**For example:**

1. **Bt cotton**, the only GM crop that is allowed in India, has two alien genes from the soil bacterium *Bacillus thuringiensis* (Bt) that allows the crop to develop a protein toxic to the common pest pink bollworm.
2. **Ht Bt cotton** is derived with the insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.
3. **In Bt brinjal**, a gene allows the plant to resist attacks of fruit and shoot borer.
4. **In DMH-11 mustard**, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

**What is the legal position of genetically modified crops in India?**

In India, the **Genetic Engineering Appraisal Committee (GEAC)** is the apex body that allows for commercial release of GM crops.

**Penalty:** Use of the unapproved GM variant can attract a jail term of 5 years and fine of Rs 1 lakh under the Environmental Protection Act, 1986.

**Why are farmers rooting for GM crops?**

**Reduced costs:** Cost of weeding goes down considerably if farmers grow Ht Bt cotton and use glyphosate against weeds. In case of Bt brinjal, the cost reduces as the cost of production is reduced by cutting down on the use of pesticides.

**Concerns:**

Environmentalists argue that the long-lasting effect of GM crops is yet to be studied and thus they should not be released commercially. Genetic modification, they say, brings about changes that can be harmful to humans in the long run.

## 5. Intercropping

It is the **cultivation of two or more crops simultaneously on the same field**.

The main goal is to **produce a greater yield on a given piece of land** by making use of resources of ecological processes that would otherwise not be utilised by a single crop.

**There are different approaches to intercropping such as:**

1. **Mixed intercropping** – two or more crops are planted in a mix without a distinct row arrangement.
2. **Row intercropping** – two or more crops are planted in distinct rows.
3. **Relay intercropping** – two or more crops are grown at the same time as part of the life cycle of each i.e. a second crop is sown after the first crop has been well established but before it reaches its harvesting stage.
4. **Strip intercropping** – growing two or more crops at the same time in separate strips wide enough apart for independent cultivation.

**Advantages of intercropping:**

- **More efficient use of light, water and other nutrient resources** compared to single crops.
- It allows for **effective management of cover crops** because **crop mixtures have lower pest densities**.
- Potential **increased crop yields per unit area**.
- Improved **soil fertility** by leguminous intercrops e.g. nitrogen fixing.
- Reduced **soil erosion**.
- Lowered **soil surface evaporation**.

**Some cons of intercropping:**

- Intercropping is **not always suited to a mechanised farming system**.

- **Time consuming:** It requires more attention and thus increased intensive, expert management.
- There is **reduced efficiency in planting, weeding and harvesting** which may add to the labour costs of these operations.
- The biggest challenge to adopting intercropping systems is **the advance planning of planting, cultivation, fertilisation, spraying and harvesting of more than one crop in the same field.**

## 6. Micro Irrigation

- The government has set the target of covering 100 lakh ha in five years under micro-irrigation.
- **Department of Agriculture, Cooperation & Farmers Welfare (DAC &FW)** is implementing Per Drop More Crop component of Pradhan Mantri Krishi Sinchayi Yojana (PMKSY-PDMC) since 2015-16 for enhancing water use efficiency in agriculture sector and more importantly the overall benefits towards increasing returns to farmers.
- Government has created a dedicated **Micro Irrigation Fund (MIF)** of INR 5000 crores with National Bank for Agriculture and Rural Development (NABARD) with the objective to facilitate States in mobilizing resources for expanding coverage of Micro Irrigation.
- Micro irrigation not only increases water use efficiency but also the productivity of the crops.

## 7. Fertigation

- **Fertigation is a method of fertilizer application in which fertilizer is incorporated within the irrigation water by the drip system.**
- In this system fertilizer solution is distributed evenly in irrigation.
- The availability of nutrients is very high therefore the efficiency is more.
- In this method liquid fertilizer as well as water soluble fertilizers are used. By this method, fertilizer use efficiency is increased from 80 to 90 per cent.

### Advantages of fertigation

- Nutrients and water are supplied near the active root zone through fertigation which results in greater absorption by the crops.
- As water and fertilizer are supplied evenly to all the crops through fertigation there is possibility for getting 25-50 per cent higher yield.
- Fertilizer use efficiency through fertigation ranges between 80-90 per cent, which helps to save a minimum of 25 per cent of nutrients.
- By this way, along with less amount of water and saving of fertilizer, time, labour and energy use is also reduced substantially.

Urea, potash and highly water soluble fertilizers are available for applying through fertigation.



## Departments / Organisations

### 1. Rashtriya Kamdhenu Aayog (RKA)

Constituted in 2019, the Aayog is a high powered **permanent apex advisory body** with the mandate to help the Central Government to develop appropriate programmes for conservation, sustainable development and genetic upgradation of indigenous breeds of cows.

It comes under **the Ministry of Fisheries, Animal Husbandry and Dairying**.

- Rashtriya Kamdhenu Aayog will function as an **integral part of Rashtriya Gokul Mission**.

#### Functions:

- Review existing laws, policies as well as suggest measures for optimum economic utilization of cow wealth for enhanced production and productivity, leading to higher farm income and better quality of life for the dairy farmers.
- Advise and guide the Central Government and State Governments on policy matters concerning conservation, protection, development and welfare of cows and their progeny.
- Promote schemes to encourage the use of organic manure and recommend suitable measures including incentive schemes for use of dung or urine of cow in organic manure by farmers to minimize the use of chemical fertilizers.
- Make provisions for solutions to the problems related to abandoned cows in the country by providing technical inputs to Gaushalas, Gosadans and pinjarapoles.
- Develop pastures or grazing lands and to associate with institutions or other bodies whether private or public, for the purpose of developing pastures and Gauchars.

### 2. Krishi Vigyan Kendra

The name means "farm science Centre".

The Centre serves as **the ultimate link between the Indian Council of agricultural research and farmers**.

- The Centre is usually associated with **a local agricultural University**.
- It aims to apply agricultural research and practical localised setting.
- As of January 2020, **there were approximately 716 KVKs throughout India**.

### 3. Agricultural Produce Market Committee (APMC)

- An Agricultural Produce Market Committee (APMC) is a marketing board established by state governments in India to ensure farmers are safeguarded from exploitation by large retailers, as well as ensuring the farm to retail price spread does not reach excessively high levels.
- APMCs are regulated by states through their adoption of a Agriculture Produce Marketing Regulation (APMR) Act.
- Until 2020, the first sale of agriculture produce could occur only at the market yards (mandis) of APMCs. However, after 2020 with the passing of the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, which allowed farmers to sell outside APMC mandis as well as across different states of India.

Some of the salient features of the APMC Model Act 2003 include:

- Facilitating contract farming model.
- Special market for perishables
- Allowing farmers and private persons to set up their own market.
- Relaxation of licensing norms.
- Single market fee
- APMC revenue to be used for improving market infrastructure.

However, not all states have passed the bill. Some states have passed but neither framed rules nor notified it. Thus, inter-state barriers continue.

#### 4. National Agricultural Cooperative Marketing Federation of India Ltd (NAFED)

- National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) is an apex organization of marketing cooperatives for agricultural produce in India.
- It is registered under Multi State Co-operative Societies Act.
- NAFED is now one of the largest **procurements as well as marketing agencies for agricultural products in India.**
- NAFED is the **nodal agency to implement price stabilization measures under "Operation Greens"** which aims to double the farmers' income by 2022.
- NAFED along with FCI with proactive role of state governments also physically procures oilseeds, pulses and copra under the Price Support Scheme (PSS).

### International Practices / Examples

#### 1. New UN alliance to stave off 'catastrophic food crisis'

Taking cognisance of the catastrophic food crisis caused by Covid 19 Pandemic and the urgency to tackle it, **Food and Agriculture Organization (FAO)** of the United Nations has launched a **Food Coalition**.

##### About the Alliance:

**Proposed by Italy and led by Food and Agriculture Organization**, the alliance aims **to increase resilience of agricultural food systems and ensure global food access.**

- **Italy and the Netherlands** have already pledged and delivered financial resources and technical support to the coalition.
- The alliance would work as **a network of networks and a multi-stakeholder coalition** for a unified global action to ensure food access and increase the resilience of agricultural food systems in response to COVID-19.
- The alliance involves **a devoted trust fund and a web-based hub** allowing participants to access a basket of project-focused information and data, as well as the funding and types of assistance needed for many on-the-ground projects.

##### Key Objectives of the alliance:

1. Mobilising resources, expertise and innovation
2. Advocating for a joint and coordinated COVID-19 response.
3. Promoting dialogue and exchange of knowledge and expertise among countries.
4. Working towards solution-oriented plans and programmes.
5. Expanding international cooperation and partnership for a longer term impact.

### Miscellaneous

#### 1. Orobanche

- It is a **hidden parasitic weed** in mustard causing severe yield loss to the extent of up to 50%.
- Also called **broomrapes**, they are aggressive root parasitic weeds which attack strategic food crops, such as legumes and vegetables, and threaten the livelihood of many nations.
- There are no absolute control measures developed for it.