

UPSC Daily Current Affairs | Prelim Bits 03-09-2024

Schemes for improving farmers' lives and livelihoods

The Union Cabinet approved 7 schemes to improve farmers' lives and increase their incomes.

Digital Agriculture Mission

- The mission aims to integrate modern technologies such as ***AI and big data into the farming*** process to improve decision-making and efficiency.
- The project has 3 main pillars
 - Agri Stack
 - Krishi Decision Support System
 - Soil Profile Maps

Crop Science for Food and Nutritional Security

- The investment is aimed at bolstering agricultural research and education, with a focus on various key areas critical to ensuring food security in the future.
 - **Research and education-** Enhancing academic and research capabilities in agriculture.
 - **Plant genetic resource management-** Conserving and utilising genetic resources for crop improvement.
 - **Genetic improvement for food and fodder crops-** Focusing on pulses, oilseeds, and commercial crops.
 - **Research on insects, microbes, pollinators, etc.-** Addressing issues that impact crop health and productivity.

Strengthening Agricultural Education, Management and Social Sciences

- It target to strengthening agricultural education, management, and social sciences under the ***Indian Council of Agricultural Research (ICAR)***.
- This initiative aims to modernise agricultural education in line with the ***New Education Policy 2020***.
- It will incorporate the latest technologies, including digital public infrastructure, artificial intelligence (AI), big data, and remote sensing.

Sustainable Livestock Health and Production

- This project focuses on
 - **Animal health management and veterinary education-** Improving animal healthcare and veterinary education.
 - **Dairy production and technology development-** Enhancing dairy production

capabilities.

- **Animal genetic resource management-** Managing and improving animal genetics.
- **Animal nutrition and small ruminant production-** Developing sustainable practices for animal nutrition and the production of small ruminants.

Sustainable Development of Horticulture

- The initiative will cover a wide range of horticultural activities, including the cultivation of tropical, sub-tropical, and temperate crops, as well as root, tuber, bulbous, and arid crops.
- The project will also focus on vegetables, floriculture, mushrooms, and the development of plantation, spices, medicinal, and aromatic plants.

Krishi Vigyan Kendra and Natural Resource Management

- These projects aim to provide farmers with the necessary knowledge and tools to manage their resources effectively and sustainably.

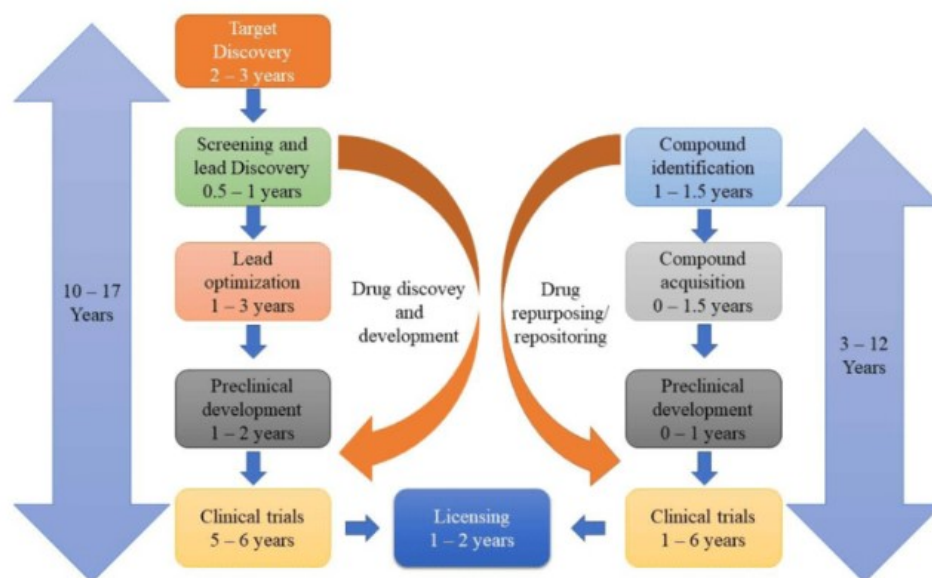
Reference

[PIB | Cabinet approves seven agricultural projects](#)

Drug Repurposing

Researchers at the Institute of Advanced Study in Science and Technology (IASST) have found the repurpose potential of an antidepressant drug for cancer management.

- **Drug Repurposing** - It is the technique of using an ***existing drug or drug candidate for a new treatment*** or medical condition for which it was not indicated before.
- It is also known as ***drug repositioning or drug reprofiling***.
- Drug repurposing bypasses the pre-clinical work and facilitate targeted treatment.



- **Application** - Pharmaceutical companies are undertaking drug repurposing projects for rare diseases, oncology, infectious and autoimmune diseases and more.
- **Benefits** - Fasten the drug discovery process and find quicker solutions.
- Helps in quickly identify compounds with an established safety profile and known therapeutic advantages.
- It is particularly useful where traditional drug development is not cost-effective.

Selegiline Repurpose

- **Selegiline (L-deprenyl)** - It is an **antidepressant drug** from a class of drugs called monoamine oxidase (MAO) inhibitors.
- Researchers at IASST have found the repurposing potential of it for Cancer treatment.
- **IASST** -Institute of Advanced Study in Science and Technology (IASST) in Guwahati.
 - It is an autonomous institute under the Department of Science & Technology (DST), Govt. of India.
- **Function** - Selegiline interacts with genes intricately linked to various types of cancer.
- Particularly, it can **induce cell death in breast cancer cells**.

References

[PIB| Repurposing antidepressant drug for treating cancer](#)

AgriSURE Fund

Recently, the Union government launched the AgriSURE Fund and Krishi Nivesh Portal.

- **AgriSURE Fund**- Agri Fund for Startups and Rural Enterprises (AgriSURE) is a fund supporting agri start-ups and rural enterprises.
- **Aim** - AgriSURE aims to **foster innovation and sustainability** in India's agricultural sector.
- The fund is structured to support approximately 85 agri startups with investment sizes of up to Rs 25 crore each.

- **Managed by** - NABVENTURES, a wholly owned subsidiary of NABARD.
- **Ministry** - Ministry of Agriculture & Farmers Welfare.
- **Features** - It will support through investments in sector-specific, sector-agnostic, and debt Alternative Investment Funds (AIFs).
- The initiative includes ***direct equity support for start-ups*** in agriculture and allied sectors.
- The fund will offer both equity and debt support, focusing on high-risk, high-impact activities in the agriculture value chain.

Quick Facts

- **Agriculture Infrastructure Fund (AIF) scheme** - It was launched in 2020 for creation of Post-harvest Management infrastructure and Community farming assets.
- **Krishi Nivesh Portal** - This portal will be a one stop place for availing the benefits promulgated by different Government departments and ministries in agriculture sector.

Reference

[PIB | AgriSURE Fund](#)

Digital Agriculture Mission (DAM)

Recently, Union Cabinet has approved the Rs 2,817-crore Digital Agriculture Mission.

- **Aim** - Creation of Digital Public Infrastructure (DPI) in the farm sector.
- It is conceived as ***an umbrella scheme*** to support digital agriculture initiatives, such as
 - Creating Digital Public Infrastructure
 - Implementing the Digital General Crop Estimation Survey (DGCES)
 - Taking up other IT initiatives.
- **Ministry** - Ministry of Agriculture & Farmers Welfare.
- **Digital General Crop Estimation Survey (DGCES)** - It is a tech-based ecosystem to provide accurate estimates of agricultural production.
- **Digital Public Infrastructure (DPI) for Agriculture** - It aims to provide comprehensive and useful data on farmers comprising of
 - Authenticated demographic details
 - Land holdings
 - Crops sown
- It will include cultivators & tenant farmers, as per the policy of the State Government.
- **Stakeholders** - Central Government, State Governments, and Academic and Research Institutions.
- **Funding** - Shared between Union and State/UTs.
- **Components of DAM.**
 - AgriStack
 - Krishi Decision Support System (DSS)
 - Soil Profile Maps
- Each of these DPI components will provide solutions that will allow farmers to access

and avail of various services.

- **AgriStack** - It is a farmer-centric DPI being built in a federated structure.
- It is collaborative project between the various agencies of the Central and State Governments.
- Agristack consists of three foundational registries or databases in the agriculture sector.
 - **Farmers' Registry** - Under Farmer's Registry, farmers will be given a digital identity (**Farmer ID**) similar to Aadhaar.
 - This will be linked dynamically to the State's land records, livestock ownership, crops sown, demographic details, family details, schemes and benefits availed etc.
 - **Geo-referenced village maps** - The maps will link geographic information on land records with their physical locations.
 - **Crop sown Registry** - Crops sown by farmers will be recorded through mobile-based ground surveys to be conducted in each season.
- **Implementation** - All these registries are created and maintained by the State Governments/ Union Territories.
- **Krishi Decision Support System (Krishi DSS)** - It will create a comprehensive geospatial system to unify remote sensing-based information on Crops, Soil, Weather, water resources, etc.
- **Soil Profile Map** - Detailed Soil Profile Map on a ***1:10,000 scale*** of about 142 million ha of the country's agricultural land will be prepared.
- **Benefits** - It will have a catalytic effect in creating both direct and indirect employment in the agriculture sector.
- Make service delivery mechanisms more efficient and transparent for the farmers and the stakeholders in the agriculture sector.
- Obviating cumbersome paperwork and reduces physical visit to various offices or service providers.
- Help government agencies make schemes and services more efficient and transparent.
- Helps in accurate crop production estimation and evaluate irrigation needs according to the crop and season.
- Enables the stakeholders in the agriculture ecosystem to establish efficient value chains for agricultural inputs and post-harvest processes.

References

1. [Indian Express | Digital Agriculture Mission](#)
2. [PIB | Digital Agriculture Mission](#)

Su-30MKI Fighter Aircraft

The Cabinet Committee on Security approved the procurement of aero engines for the Sukhoi Su-30 MKI fighter jets under the 'Buy (Indian)' category from Hindustan Aeronautics Limited (HAL) recently.

The "Buy (Indian)" category is a category in the Defence Procurement Procedure that refers to the purchase of products from Indian vendors.

- The Sukhoi Su-30MKI is a two-seater, twinjet multirole combat fighter aircraft.
- **Developed by** - The Sukhoi Design Bureau, Russia and Hindustan Aeronautics Limited (HAL) for the **Indian Air Force (IAF)**.
- It is one of the most advanced and versatile fighter jets in the IAF's inventory.
- It is equipped with thrust vectoring control and canards.
- **Maiden Flight**- November 2000.
- **Service Entry**- September 2002.
- **Maximum Speed**- Mach 2.
- **Range**- 3,000 km.
- It supports **all-weather, air-to-air and air-to-surface** deep interdiction missions.

Su-30 MKI vs Rafale

| Features | Su-30MKI | Rafale |
|--------------------------|---|---|
| Design and Role | <ul style="list-style-type: none"> • The Su-30MKI is primarily an air superiority fighter but has also been adapted for various roles, including air-to-ground and maritime strike missions. • It has a larger airframe and is designed for long-range missions and heavy payloads. | <ul style="list-style-type: none"> • The Rafale is a versatile fighter capable of performing a wide range of missions, including air superiority, ground attack, reconnaissance, and nuclear deterrence. • It is known for its advanced avionics and sensor suite, making it a highly capable multirole aircraft. |
| Weaponry | <ul style="list-style-type: none"> • The Su-30MKI can carry a wide array of air-to-air and air-to-ground missiles, rockets, bombs, and even anti-ship missiles, giving it considerable firepower. | <ul style="list-style-type: none"> • The Rafale is equipped with advanced weaponry, including Meteor beyond-visual-range air-to-air missiles, Scalp cruise missiles for long-range strike capability, and various precision-guided munitions. |
| Maximum speed | <ul style="list-style-type: none"> • 2,120 km/h (Mach 2.0) | <ul style="list-style-type: none"> • 1,912 km/h (Mach 1.8) |
| Armament carrying | <ul style="list-style-type: none"> • Up to 8,130 kg | <ul style="list-style-type: none"> • Up to 9,500 kg |
| Generation | <ul style="list-style-type: none"> • 4th -generation fighter aircraft | <ul style="list-style-type: none"> • 4.5-generation fighter aircraft |
| Range | <ul style="list-style-type: none"> • 3,000 km at a high altitude • 1,270 km at low altitude | <ul style="list-style-type: none"> • 1,850 km on penetration mission (combat range) |
| Hardpoints | <ul style="list-style-type: none"> • 12 hardpoints | <ul style="list-style-type: none"> • 14 hardpoints |
| Ferry range | <ul style="list-style-type: none"> • 8,000 km | <ul style="list-style-type: none"> • 3,700 km |
| Service ceiling | <ul style="list-style-type: none"> • 17,300 m (56,800 ft) | <ul style="list-style-type: none"> • 15,835 m (51,952 ft) |
| Rate of climb | <ul style="list-style-type: none"> • 300 m/s (59,000 ft/min) | <ul style="list-style-type: none"> • 304.8 m/s (60,000 ft/min) |

References

1. [The Hindu | Su-30MKI fighter jets](#)
2. [Airforce Technology | Su-30MKI Fighter Aircraft](#)

