

1. NITI Aayog on Agriculture Reforms

Topic: Agriculture



In News: NITI Aayog has released a working paper titled '**From Green Revolution to Amrit Kaal**'.

More on the Topic

- The working paper aims to **revitalise India's agriculture industry**, setting the groundwork for a more prosperous future for farmers.
- The paper also underscores the essential role of agriculture in meeting the **United Nations' Sustainable Development Agenda 2030**.
- It emphasizes that **11 out of the 17 Sustainable Development Goals (SDGs) are directly linked to agriculture**, emphasizing the need to prioritize this sector for sustainable development.

The Challenges Faced by Indian Agriculture:

- **Ecological Challenges:** Declining groundwater level, frequent pest attacks, Declining land fertility, Climate change induced frequent drought, floods etc.
- **Economic Challenges:** Declining farmer income, declining farm productivity, post-harvest loss, huge debt etc.
- **Social Challenges:** Unskilled and illiterate farming activities linked with growing crops not suitable to the area or weather conditions, ineffective land reforms etc.

Recommendations by the NITI Ayog Working Paper:

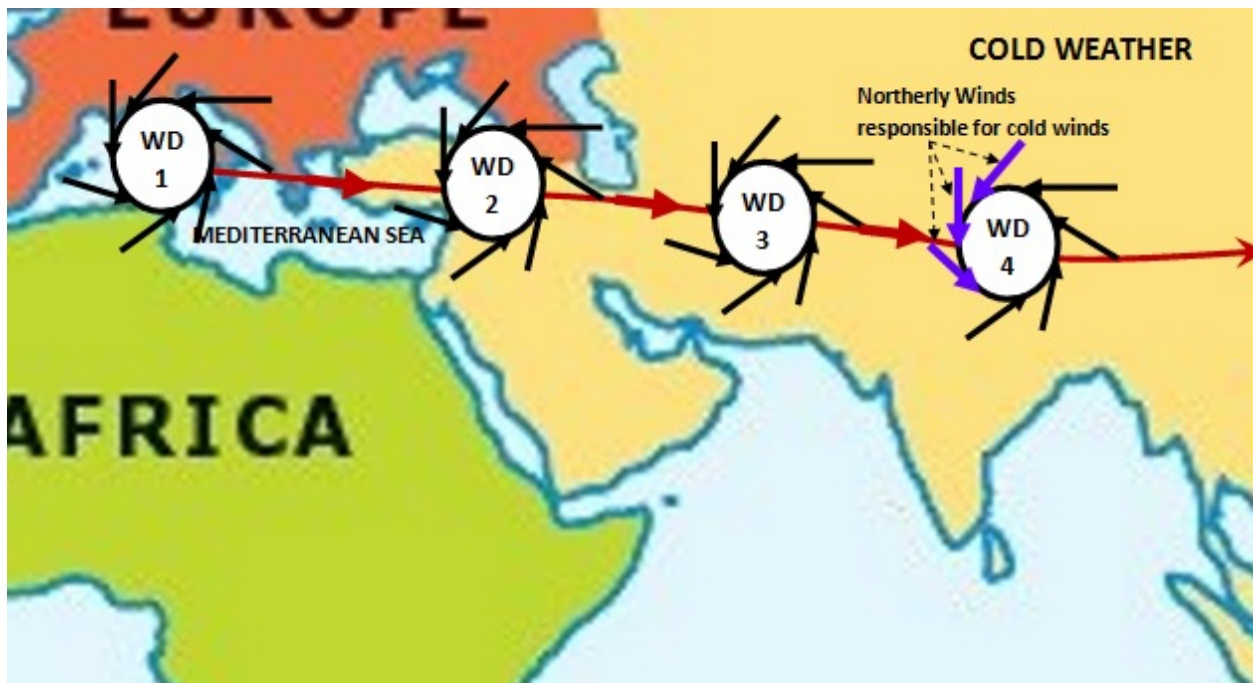
- Create a **conducive regulatory environment and responsible investments**, both public and private, in agriculture.
- Introducing a **competitive framework among states** to enhance the ease of doing farming and farm business.
- Use a **combination of procurement and price deficiency payment**, to pay the Minimum Support Price to farmers.
- Integrate **science-led technology**.
- Encouraging **private sector participation** in pre and post-harvest phases.

- Promote **liberalized output markets**.
- Foster an **active land lease market**.
- Prioritizing efficiency.

Source: Indian Express

2. Western Disturbances and Monsoon Trough

Topic: Geography



In News: An interaction between a western disturbance and the monsoon trough led to heavy rainfall over Himachal Pradesh, Uttarakhand, Punjab and Haryana.

More on the Topic:

About Western Disturbance:

- A western disturbance is an **extratropical storm originating in the Mediterranean region** that brings sudden winter rain to the northern parts of the Indian subcontinent, which extends as east as up to northern parts of Bangladesh and Southeastern Nepal.
- It is a **non-monsoonal precipitation pattern driven by the westerlies**. The moisture in these storms usually originates over **the Mediterranean Sea, the Caspian Sea and the Black Sea**.
- Extratropical storms are a global phenomenon with moisture usually carried in the upper atmosphere, unlike their tropical counterparts where the moisture is carried in the lower atmosphere.



- In the case of the Indian subcontinent, **moisture is sometimes shed as rain when the storm system encounters the Himalayas.** Western disturbances are more frequent and stronger in the winter season.
- Most winter and pre-monsoon season rainfall in North-West India is due to Western Disturbances.
- During this time, **pre-monsoon rain is caused by instability in the atmosphere following the heating of the surface.**
- This year, long spells of rain or thundershowers are also rare because the pre-monsoon activity is normally brief and intermittent in north India.

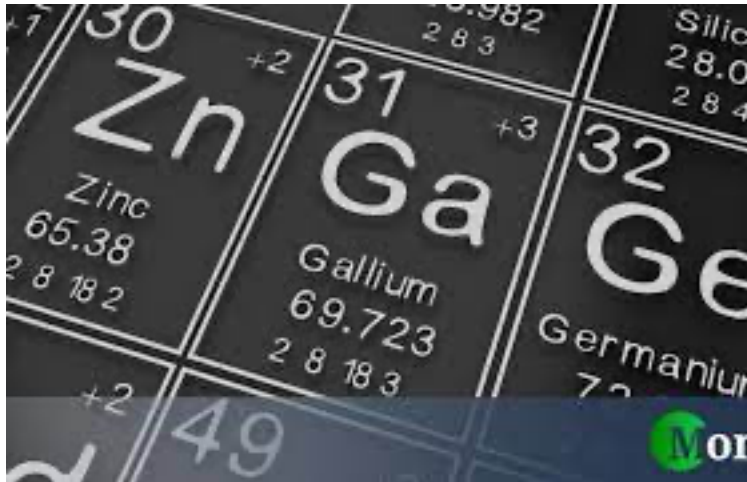
About Monsoon Trough:

- A trough is a belt of low pressure extending to a large area. This trough is seen during the monsoon period, hence known as the Monsoon trough.
- The monsoon trough is **a part of the Inter Tropical Convergence Zone (ITCZ)** where the northern hemisphere and southern hemisphere winds meet.
- This is normally shown as a line connecting the location of monsoon low-pressure areas.
- These troughs run across continents during peak monsoon periods.

Source: IE

3. Germanium and Gallium

Topic: Science and Technology



In News: China is restricting exports of two rare metals, Germanium and Gallium.

More on the Topic:

- **China is the world's leading producer of both germanium and gallium.**
- As per the **Critical Raw Minerals Alliance**, China is responsible for the production of **60 per cent of the world's germanium and 80 per cent of the world's gallium.**
- China's move to curb both elements will have a significant impact on the global tech industry.
- These metals are **essential for the production of semiconductors**, which are used in everything from smartphones to computers to cars.
- The restrictions could also lead to higher prices for these metals, which could make it more difficult for companies to produce high-tech products.
- The move by China to restrict exports of germanium and gallium is seen as a sign of the **growing tensions between China and the United States.**
- These two countries are locked in a trade war, and the restrictions on exports of these metals are seen as a way for China to retaliate against the United States.

About Germanium:

- Germanium is a **semi-metal which makes it a good element for use as semiconductors.**
- It is used in a variety of applications, including **fibre optics, infrared optics** (night vision goggles), **solar cell technologies, and infrared sensors.**
- It is particularly used in **the production of transistors and other semiconductor devices.**
- Germanium has also been found to have some **medicinal uses** and is sometimes used as a dietary supplement.

About Gallium:

- Gallium is a **soft, silvery metal that is in a liquid state near room temperature.**
- It has a **low melting point** which helps in the production of semiconductors and electronic components.
- It is used in the manufacture of **integrated circuits, light-emitting diodes (LEDs), and solar cells.**
- There are some Gallium-based compounds which also have **medical applications**, including the treatment of certain types of **cancers.**

Source: Hindu

4. Candida Auris

Topic: Science and Technology



In News: Live cultures of *Candida auris* have been isolated and documented in the ear canals of hospitalised stray dogs in New Delhi.

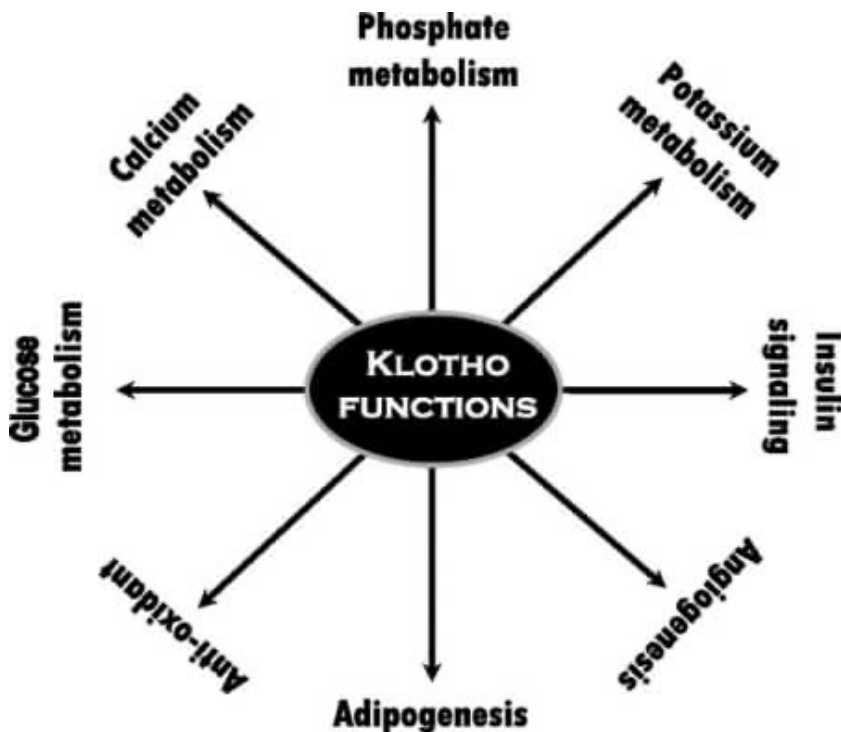
More on the Topic:

- *Candida auris* is an **emerging multidrug-resistant oval-shaped fungus** causing life-threatening outbreaks, often in healthcare settings.
- This fungal pathogen has been rated as an urgent threat by the U.S. Centers for Disease Control and Prevention (CDC) and classified as a **critical priority group by the World Health Organisation (WHO).**
- It belongs to the **genus *Candida* which causes candidiasis in humans.**
- Often, candidiasis is acquired in hospitals by patients with weakened immune systems.

Source: Indian Express

5. Klotho Protein

Topic: Science and Technology



In News: A team of health care specialists and neuroscientists affiliated with several institutions in the U.S., has found that injecting a protein called klotho into older rhesus macaques led to improvements in working memory and their ability to do certain tasks.

More on the Topic:

- The findings indicate that giving the protein to the monkeys led to **cognitive improvement**.
- Klotho is a **'longevity factor' protein, a naturally occurring protein** that declines in our bodies with age.
- Previous research on mice had shown that injections of klotho can extend the animals' lives and increase **synaptic plasticity (the capacity to control communication between neurons, at junctions called synapses)**.

Source: Business Standard

6. Porpanaikottai Excavations

Topic: Art and Culture



In News: The Tamilnadu State Archaeology Department began excavation at Porpanaikottai seeking to unearth an ancient fort in the village.

More on the Topic:

- Studies carried out at the site using Light Detection and Ranging (LIDAR), a remote sensing method, have indicated that **a fort existed at Porpanaikottai.**
- **Potsherds engraved with graffiti, Tamil-Brahmi inscribed potsherds, shell bangles, bone tools and hopscotches** were unearthed during an excavation conducted in 2021.
- **A gold stud, a bone point and a carnelian bead** belonging to Sangam Age have also been excavated.
- The discovery of bone point tools indicated that Porpanaikottai was **a site of the weaving industry.**

Source: Hindu

7. Lambani Embroidery

Topic: Art and Culture



In News: Lambani artisans set the Guinness World Record for making the highest number of embroidery patches.

More on the Topic:

- Lambani embroidery is a vibrant and intricate **form of textile embellishment characterised by colourful threads, mirror work, and a rich array of stitch patterns.**
- It is practised in **several villages of Karnataka** such as Sandur, Keri Tanda, Mariyammanahalli, Kadirampur, Sitaram Tanda, Bijapur, and Kamalapur.
- It received the status of Geographic Indication (**GI**) tag in **2010 from Karnataka.**
- It has been named after the **Lambani tribe.**
- Lambanis, also called Lambadis or Banjaras, were nomadic tribes who came from **Afghanistan to Rajasthan** and have now spread themselves across Karnataka, Andhra Pradesh, Rajasthan, Madhya Pradesh, Gujarat and Maharashtra.

Source: Business Standard
