



# Daily Current Affairs



## To The Point by Dhananjay Gautam

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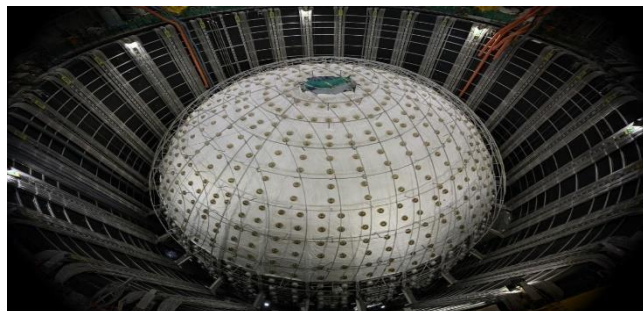
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## 1 China's Jiangmen Underground Neutrino Observatory (JUNO)

**Context:** The Jiangmen Underground Neutrino Observatory (JUNO) in China is set to begin collecting data on neutrinos, a significant step towards solving various mysteries surrounding these elusive subatomic particles, including their origins and interactions with other particles.



### What are Neutrinos?

- **Definition:** Neutrinos are subatomic particles with a mass much smaller than that of other elementary particles. They are fundamental constituents of the universe.
- **Types:** There are three types of neutrinos:
  1. **Electron Neutrinos**
  2. **Muon Neutrinos**
  3. **Tau Neutrinos**
- **Neutrino Oscillation:** Neutrinos can change between these types as they travel, a phenomenon known as neutrino oscillation.

### Key Characteristics of Neutrinos:

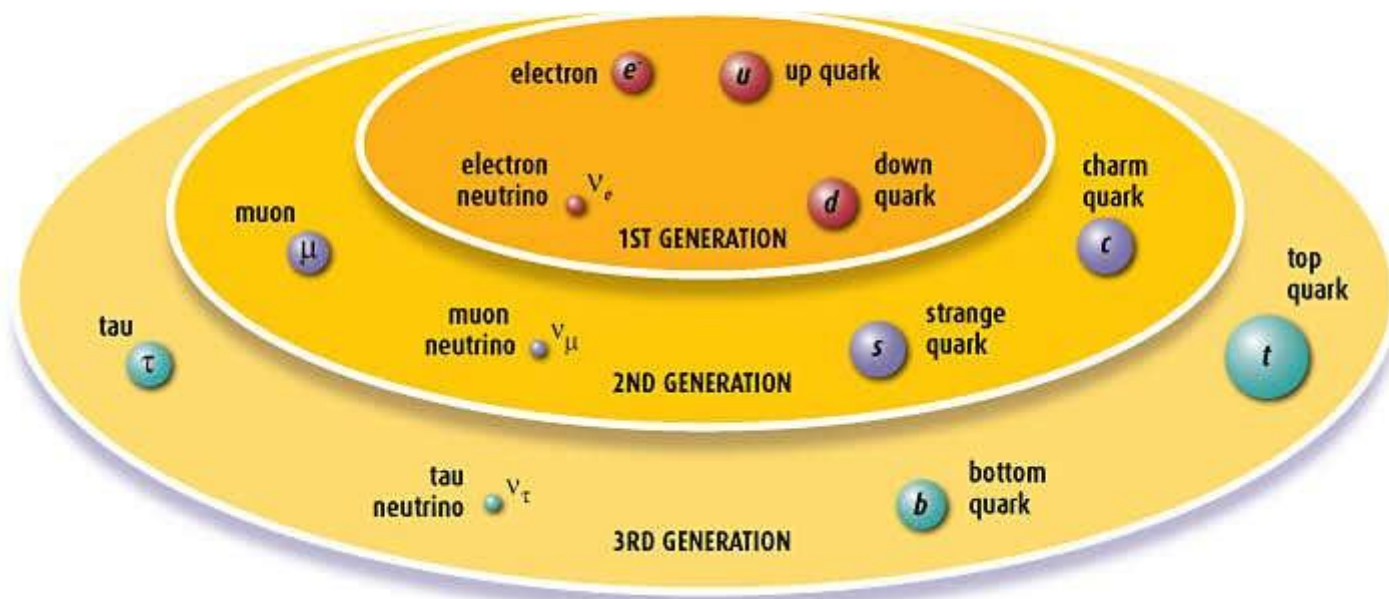
- **Spin:** Neutrinos have a spin of  $1/2$ , which is a half-integer value.
- **Speed:** They travel at nearly the speed of light and move in straight lines from their sources.
- **Interactions:** Neutrinos rarely interact with other matter, which is why they are often referred to as "ghost particles." The primary interactions they undergo are through gravity and the weak nuclear force.
- **Abundance:** Neutrinos are the most abundant particles that have mass in the universe.

### JUNO's Contributions to Neutrino Studies:

- **Solar Neutrinos:** JUNO will observe neutrinos emitted from the sun, providing real-time insights into solar processes and nuclear reactions occurring within.
- **Geophysical Studies:** It will study neutrinos produced by the radioactive decay of uranium and thorium in the Earth, helping to enhance our understanding of mantle convection and the driving forces behind tectonic plate movements.
- **Astrophysical Sources:** JUNO may contribute to probing some of the most violent astrophysical phenomena, such as supernovae and gamma-ray bursts, by observing neutrinos emitted during these events.

**THE STANDARD MODEL**

The particles that make up the standard model are grouped in three families, or generations. Neutrino measurements could reveal other families.

**Key Neutrino Observatories Worldwide:****1. India-based Neutrino Observatory (INO):**

- **Funding:** Jointly funded by the Department of Atomic Energy (DAE) and the Department of Science and Technology (DST).
- **Location:** Bodi West hills of Theni District, Tamil Nadu.

**2. IceCube Neutrino Observatory:**

- The first neutrino detector of its kind, located at the South Pole, designed to observe cosmic neutrinos from deep within the ice.

**3. Other Notable Observatories:**

- **TRIDENT (Tropical Deep-sea Neutrino Telescope)** in China.
- **DUNE (Deep Underground Neutrino Experiment)** in the USA.

**Note:** The name "JUNO" is shared with a NASA mission launched in 2011 to study Jupiter, but the two missions are unrelated.

**Conclusion:** JUNO's ability to observe neutrinos will significantly advance our understanding of fundamental physics, geophysics, and astrophysics, highlighting the importance of neutrinos in various scientific fields.

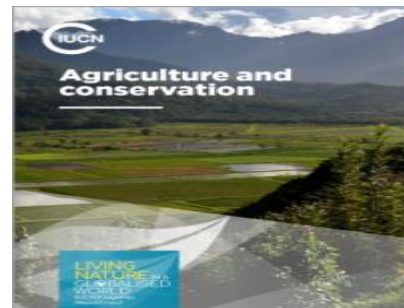


## 2 IUCN Report: “Agriculture and Conservation”

**Context:** The IUCN has released a comprehensive flagship report titled “Agriculture and Conservation,” which examines the intricate relationship between agricultural practices and biodiversity conservation.

### Key Findings:

#### Impact of Agriculture on Biodiversity



##### 1. Negative Impacts:

- **Threat to Species:** Agriculture poses a direct threat to 34% of species listed on the IUCN Red List of Threatened Species.
- **Habitat Conversion:** Conversion of natural habitats into croplands, pasturelands, and plantations is a primary driver of biodiversity loss.
- **Indirect Threats:** Agriculture also contributes to indirect threats such as:
  - Introduction of invasive alien species
  - Nutrient loading and soil erosion
  - Use of agrochemicals
  - Climate change impacts

- 2. **Positive Impact:** Approximately 17% of species on the IUCN Red List are documented as having agriculture as a habitat, indicating some agricultural practices can support certain species.

#### Impact of Biodiversity on Agriculture

##### 1. Positive Contributions:

- **Ecosystem Services:** Biodiversity supports agriculture through:
  - **Provisioning Services:** Production of biomass and genetic materials essential for food production.
  - **Regulating and Maintenance Services:** These include climate regulation, sediment retention, nutrient cycling, water flow regulation, and pollination, all of which are critical for agricultural productivity.

##### 2. Negative Contributions:

- **Ecosystem Disservices:** Biodiversity can also present challenges, including:
  - Crop predation
  - Pests and pathogens that threaten agricultural output.

## Recommendations for Aligning Agriculture with Conservation:

1. **Agriculture Sustainability:** Safeguard critical habitats and species that cannot coexist with agricultural practices to ensure both biodiversity and food security.
2. **Ecosystem Service Maintenance:** Maintain the natural state of climate, soil, and water to support agricultural productivity.
3. **Policy Alignment:** Align agricultural and economic policies with the conservation of biodiversity. Notably, less than 5% of agricultural subsidies worldwide are classified as "green subsidies," which promote sustainable practices.
4. **Food Policy Reform:** Implement strategies to reduce food wastage and encourage positive dietary changes, including a shift towards reduced meat consumption, to minimize environmental impacts.

## About International Union for Conservation of Nature (IUCN)

- **Founded:** 1948
- **Type:** The world's largest and most diverse environmental network.
- **Purpose:** To assess the status of the natural world and develop measures to safeguard it.

### Membership:

- **Members:** Over 1,400 member organizations.
- **Composition:** Includes government and civil society organizations, along with a global network of experts.

### Global Reach:

- **Active Countries:** IUCN operates in more than 160 countries worldwide.
- **Activities:** Engages in research, analysis, project implementation, and informing environmental policy.

### Expertise and Contributions

- **Duration:** Over 75 years of experience in conservation efforts.
- **Outputs:** Produces authoritative reports, standards, guidelines, and tools to support environmental conservation and sustainable development.

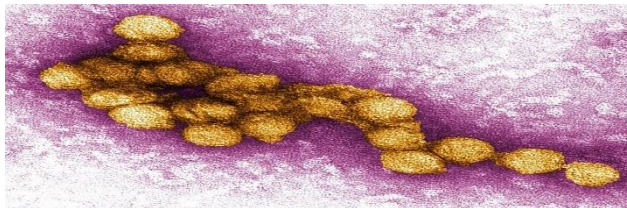
### Significance:

- **Global Authority:** IUCN is recognized as the global authority on the conservation status of natural resources and biodiversity.
- **Impact:** Works to influence policy, promote sustainable practices, and facilitate collaboration among various stakeholders in environmental conservation.

**Conclusion:** The IUCN's report emphasizes the need for a balanced approach that recognizes the interconnectedness of agriculture and biodiversity. By adopting sustainable agricultural practices and reforming policies, it is possible to protect ecosystems while ensuring food security and promoting agricultural productivity.

### 3 West Nile virus (WNV)

**Context:** Ukraine is currently facing a serious outbreak of **West Nile virus (WNV)**, leading to rising fatalities. This has alarmed health officials as they work to contain the spread.



#### About West Nile Virus (WNV):

- **Family and Genus:** WNV is part of the **Flaviviridae family** and the **flavivirus genus**.
- **First Identified:** It was first discovered in **Uganda's West Nile district** in **1937**.
- **Geographical Presence:** WNV is commonly found in **Africa, Europe, the Middle East, North America, and West Asia**.
- **Peak Season:** According to the **World Health Organization (WHO)**, cases tend to spike between **June and September**, during the summer and autumn months.

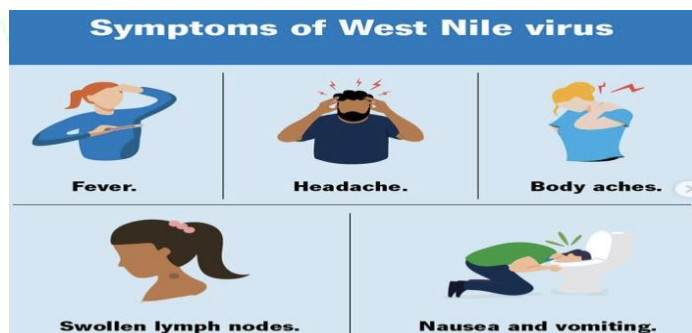
#### Transmission:

- **Mosquito Bites:** The virus is primarily transmitted to humans through the bites of **infected mosquitoes**, which contract the virus after feeding on infected birds.
- **Other Transmission Modes:** Less commonly, WNV can be transmitted through contact with **infected animals**, their **blood**, or other **tissues**.

#### Symptoms:

- **Asymptomatic Cases:** About **80%** of infected individuals show **no symptoms**.
- **West Nile Fever:** Around **20%** develop **West Nile fever**, with symptoms such as:

- Fever
- Headache
- Tiredness
- Body aches
- Nausea and vomiting
- Occasionally, a skin rash



- **Severe Disease:** In some cases, WNV can progress to **severe neuroinvasive disease**, which may affect the brain and spinal cord.

#### Global Spread:

- **Countries Affected:** **19 countries** have reported WNV outbreaks, including:
  - **Albania, Austria, Bulgaria, Croatia, Cyprus, Czechia, France, Germany, Greece, Hungary, Italy, North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Türkiye, and Kosovo.**

#### Treatment:

- **No Vaccine:** Currently, there is **no vaccine** available for WNV.

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- **Supportive Care:** Treatment is **supportive**, focusing on alleviating symptoms, especially in cases of **neuroinvasive disease**.

The outbreak in Ukraine adds to the growing number of cases reported across Europe and neighbouring regions, underscoring the need for vigilant public health measures and mosquito control strategies.

## History of West Nile Virus (WNV)

West Nile Virus (WNV) has a significant history that illustrates how it became a global health concern.

- **First Isolation (1937):** WNV was first identified in a human in **Uganda's** West Nile district.
- **Bird Transmission (1953):** It was later found in **birds** (particularly crows and Columbiformes) in the **Nile Delta**.

### Key Milestones in WNV Spread:

1. **Before 1997:** WNV was not considered harmful to birds, but in **1997**, a more virulent strain in **Israel** caused severe illness and death in birds due to **encephalitis and paralysis**.
2. **Human Infections:** For over 50 years, human cases of WNV have been reported worldwide.
3. **USA Outbreak (1999-2010):** In **1999**, a WNV strain circulating in **Israel** and **Tunisia** was imported into **New York**, leading to a major outbreak across the **United States**.
  - This outbreak spread across the **continental USA** and showed the dangers of vector-borne pathogens spreading outside their typical habitats.
4. **Global Impact:** Some of the largest outbreaks have occurred in **Greece, Israel, Romania, Russia, and the USA**.
  - Many of these sites are along **bird migratory routes**, linking the spread of the virus to migratory birds.

### Current Spread:

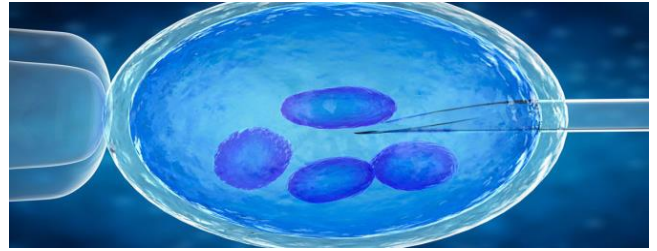
- In its original range, WNV was widespread in **Africa**, parts of **Europe**, the **Middle East**, **West Asia**, and **Australia**.
- Since its **1999 introduction** into the USA, WNV has spread extensively and is now found from **Canada to Venezuela**.

This history highlights the virus's adaptability, as it now poses a global threat due to its ability to be carried by birds and mosquitoes across continents.



## 4 Delhi High Court allows Posthumous Reproduction

**Context:** Recently, the **Delhi High Court** granted a significant ruling allowing a 60-year-old couple to use the frozen sperm of their deceased son for surrogacy, highlighting the evolving legal landscape regarding reproductive rights in India.

**Key Highlights of the Judgment:**

- 1. Legal Framework:** The Court noted that Indian law does not prohibit posthumous reproduction in the absence of a spouse, provided that the consent of the sperm or egg owner is demonstrated. This ruling marks a progressive interpretation of existing laws surrounding assisted reproductive technologies.
- 2. Posthumous Reproduction Defined:** Posthumous reproduction involves conceiving a child using Assisted Reproductive Technology (ART) after the death of one or both biological parents. In this context, cryopreserved gametes (sperm or eggs) are utilized to achieve conception.
- 3. Property Rights:** The Court concluded that a semen sample or ovum sample qualifies as 'property' since it is part of an individual's biological material. As such, it can be inherited by legal heirs, providing a basis for the couple's request to use their son's cryopreserved sperm.

**Understanding Assisted Reproductive Technology (ART)**

- **Definition:**
  - ART encompasses various techniques aimed at obtaining pregnancy through manipulation of sperm or oocytes outside the human body, followed by transferring the gamete or embryo into a woman's reproductive system.
- **Methods:**
  - Key methods under ART include:
    - In-Vitro Fertilization (IVF)
    - Surrogacy
    - Gamete Cryopreservation
    - Gamete Intra-Fallopian Transfer (GIFT)

**Regulatory Framework for ART in India**

- 1. ART (Regulation) Act, 2021:** This act provides regulations and supervision for ART clinics and banks in India, aiming to prevent misuse and ensure safe and ethical practices in ART services.
- 2. Surrogacy (Regulation) Act, 2021:** The Act prohibits and penalizes commercial surrogacy, permitting it only for altruistic reasons, thereby safeguarding the rights of surrogate mothers and intended parents.

**Conclusion:** The Delhi High Court's ruling on the posthumous use of cryopreserved sperm underscores a critical development in reproductive rights and the recognition of individual autonomy over biological materials. This decision not only sets a precedent for similar cases in the future but also highlights the importance of clear legal frameworks to support ethical practices in assisted reproductive technologies in India.

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## 5 Gram Nyayalayas

**Context:** The Supreme Court of India has raised significant concerns regarding the feasibility of establishing Gram Nyayalayas (village courts) as mandated by the **Gram Nyayalayas Act of 2008**. These courts were intended to ensure that citizens have access to justice, regardless of social, economic, or other disabilities.

### Key Concerns Raised by the Supreme Court:



- Mandatory Establishment:** The Court questioned whether the establishment of Gram Nyayalayas by States and Union Territories (UTs) is mandatory. Section 3 of the Gram Nyayalayas Act states that governments "may" constitute these courts, leading to ambiguity about the obligation to set them up.
- Resource Constraints:** State governments are already grappling with limited resources for their regular court systems, making it challenging to allocate funds for additional Gram Nyayalayas.
- Increased Burden on Higher Courts:** There are concerns that the establishment of these village courts may lead to an increase in appeals and writ petitions, consequently burdening the higher judiciary.

### Key Features of Gram Nyayalayas:

- Location:** Gram Nyayalayas are to be established at the intermediate level of Panchayati Raj institutions or in groups of contiguous Panchayats.
- Appointment of Nyayadhikaris:** The state government appoints a 'Nyayadhikari' for each Gram Nyayalaya in consultation with the respective High Court.
- Jurisdiction:** These are mobile courts with both civil and criminal jurisdiction.
- Dispute Resolution:** Disputes are ideally resolved through conciliation, with social workers potentially appointed as conciliators.
- Legal Framework:** Gram Nyayalayas are not bound by the Indian Evidence Act, 1872, but must adhere to the principles of natural justice.

### Implementation Status of Gram Nyayalayas

- Targets vs. Reality:** Initially, the target was to establish around 2,500 Gram Nyayalayas. However, fewer than 500 have been set up, with only **314 currently operational** across India.
- Regional Disparities:** Some states like Maharashtra, Madhya Pradesh, and Rajasthan have made progress in establishing these courts, while others, such as Uttar Pradesh and Bihar, have seen limited or no implementation.

### Initiative to Support Gram Nyayalayas

The **Union Government** has initiated a Centrally Sponsored Scheme (CSS) that provides financial assistance to states to facilitate the establishment of Gram Nyayalayas, aiming to enhance access to justice at the grassroots level.

**Conclusion:** The Supreme Court's scrutiny of the Gram Nyayalayas raises crucial questions about the viability of these institutions in the context of resource constraints and existing judicial workloads. The success of Gram Nyayalayas hinges on effective implementation, adequate funding, and clarity regarding the legal obligations of state governments to establish them. Addressing these challenges will be essential for realizing the goals of justice accessibility and equity in rural India.

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## 6 Union Government Announces MSP Hike for Rabi Crops

**Context:** The Union government has declared minimum support prices (MSP) for six rabi crops for the 2025-26 marketing season, notably increasing the MSP for wheat by ₹150 per quintal to ₹2,425, marking a 6.59% rise from the previous MSP.



### Minimum Support Price (MSP) Regime in India:

- **About MSP:** MSP is a form of **market intervention** (a policy decision not enforceable by law) by the Government of India to insure agricultural producers against any sharp fall in farm prices during bumper production years.
- **Announced by:** These are announced by the **Cabinet Committee on Economic Affairs** (Chaired by the PM of India) on the basis of the recommendations of the Commission for Agricultural Costs and Prices (**CACP**) at the beginning of the sowing season for certain crops.
- **Objectives:**
  - **MSPs are a guarantee price** for farmer's produce from the Government to prevent the farmers from distress sales and to procure food grains for public distribution.
  - **For example**, if the market price for a commodity falls below the specified minimum price due to market surplus, government agencies will buy the entire quantity supplied by farmers at the announced minimum price.
  - The MSP hikes are **essential not only for farmers' welfare but also for stabilising agricultural markets**, especially as India aims to enhance domestic pulse production amid rising imports.
- **Background:**
  - India's agriculture was **devastated under British rule** and the farmers were impoverished.
  - **The Food-Grain Enquiry Committee**, established by the Jawaharlal Nehru administration in 1957, was the first attempt to address the agricultural earning issue.
  - In 1964, **Lal Bahadur Shastri** formed the Food Grain Price Committee (under LK Jha), to push for a MSP regime.
  - **The first MSP announcement** was made in 1967 by the then Agriculture Minister Jagjivan Ram.
  - Thus, the MSP regime came into existence as a **policy decision** (to be applicable uniformly across India) and the government set up the Agricultural Prices Commission (renamed as the CACP in 1985) for fixing MSP for crops.
- **Crops covered:**
  - Government announces MSPs for **22** mandated crops and fair and remunerative price (FRP) for **sugarcane** (total 23).
  - The mandated crops are **14** crops of the **kharif** season, **6 rabi crops** (Wheat, Barley, Gram, Masur [Lentil], Rapeseed & Mustard, Safflower) and two other commercial crops.

### Issues Faced by the MSP Regime in India:

- **Limited coverage:** MSP is only applicable to certain crops, primarily those included in the government procurement system. Many farmers grow crops not covered by MSP, leaving them vulnerable to price fluctuations.
- **Regional disparities:** The implementation of MSP varies across states. Some regions benefit more due to better procurement infrastructure, while others face challenges in accessing MSP, leading to uneven support for farmers.
- **Discourage diversification:** Farmers may become overly reliant on MSP, which can discourage diversification and lead to overproduction of specific crops, causing market imbalances.
- **Procurement challenges:** While MSP aims to ensure fair pricing, actual procurement processes can be inefficient. Issues like delays in payments, inadequate storage facilities, and corruption can hinder farmers from benefiting fully.
- **Market distortions:** MSP can distort market signals by encouraging farmers to produce crops primarily for government support rather than responding to market demand, potentially leading to surpluses and wastage.
- **Neglect of non-cereal crops:** The MSP regime has historically focused on staple crops like wheat and rice, often neglecting pulses, oilseeds, and other essential crops. **This can impact nutritional diversity and food security.**
- **Inflationary pressure:** Increasing MSP without corresponding productivity improvements can contribute to inflation in food prices, affecting consumers and the overall economy.
- **Sustainability concerns:** The emphasis on certain crops may lead to unsustainable farming practices, such as excessive water use and soil degradation, affecting long-term agricultural viability.
- **Underutilisation of available support:** Many farmers are not fully aware of the MSP policies or how to access them, leading to underutilisation of available support.
- **Political interference:** MSP decisions can be influenced by political considerations, leading to inconsistencies in pricing and procurement policies that do not necessarily align with economic realities.

### The Cabinet increased the minimum support prices for rabi crops

Crop	MSP for rabi 2025-26*	MSP for rabi 2024-25*	Increase in MSP
Wheat	₹2,425	₹2,275	₹150
Barley	₹1,980	₹1,850	₹130
Gram	₹5,650	₹5,440	₹210
Lentil (masoor)	₹6,700	₹6,425	₹275
Rapeseed & mustard	₹5,950	₹5,650	₹300
Safflower	₹5,940	₹5,800	₹140

(\*per quintal)



## 7 SAMARTH Scheme

**Context:** Recently, the central government has extended the **Samarth Scheme** for an additional two years (FY 2024-25 and 2025-26), with a budget allocation of ₹495 crore aimed at training **3 lakh persons** in textile-related skills.



### About SAMARTH Scheme:

- **Full Name:** The Scheme for Capacity Building in Textiles Sector (SAMARTH) is designed as a demand-driven and placement-oriented umbrella skilling program.
- **Aim:** The scheme's primary objective is to incentivize and support the efforts of the textile industry in generating employment opportunities within the organized textile and related sectors. It covers the entire textile value chain, excluding spinning and weaving.
- **Key Features:**
  - **Entry-Level Skilling:** The scheme provides training for individuals entering the textile workforce.
  - **Upskilling/Re-skilling Program:** A special provision is included to enhance the skills of existing workers, particularly in the apparel and garmenting segments, thereby improving their productivity.

**Implementation:** The skilling program under SAMARTH is implemented through several agencies, including:

1. **Textile Industry:** Direct participation of industry players in training and employment.
2. **Ministry of Textiles and State Governments:** Institutions and organizations with established training infrastructure and placement partnerships with the textile industry.
3. **Reputed Training Institutions:** Non-Governmental Organizations (NGOs), societies, trusts, organizations, companies, startups, and entrepreneurs actively involved in the textile sector, also with placement tie-ups.

### Nodal Ministry:

- The scheme is overseen by the **Ministry of Textiles**, which coordinates its implementation and ensures alignment with industry needs.

**Conclusion:** The SAMARTH Scheme plays a crucial role in enhancing the skill set of the workforce in the textile sector, contributing to employment generation and productivity improvements. By extending the scheme, the government reaffirms its commitment to developing the textile industry and addressing skill gaps in the labour market.

## 8 What is Kaizen?

**Context:** The recent month-long strike at Samsung's manufacturing facility in Tamil Nadu has highlighted the challenging working conditions influenced by management philosophies such as **Kaizen**, a Japanese production method focused on continuous improvement.

### About Kaizen:

- **Meaning:** Kaizen is derived from two Japanese words that together mean "good change" or "improvement."
- **Philosophy:** It is a Japanese business philosophy that promotes continuous improvement by involving employees at all levels of an organization.
- **Key Aspects:** Kaizen encompasses various strategies, including:
  - Enhancing the efficiency of the work environment.
  - Fostering a team atmosphere.
  - Improving processes and procedures.
  - Ensuring employee engagement.
  - Making jobs more fulfilling, less tiring, and safer.
- **Goal:** The primary aim of Kaizen is to implement small, incremental changes consistently over time to drive continuous improvement within a company. This method emphasizes that even minor adjustments can accumulate to produce significant impacts in the long run.
- **Benefits:** The Kaizen process can lead to:
  - Better quality control.
  - More efficient operations.
  - Reduction of waste.
  - Enhanced employee morale and engagement.
- **Inclusivity:** Under the Kaizen philosophy, any employee can initiate improvements at any time, reinforcing the idea that every team member has a stake in the company's success and should actively contribute to enhancing the business.



**Conclusion:** This approach encourages a culture of continuous improvement, where every employee feels empowered to identify issues and propose solutions, ultimately fostering a more effective and harmonious work environment.

## 9 Drugs Technical Advisory Board (DTAB)

**Context:** The Drugs Technical Advisory Board (DTAB) recently recommended that all antibiotics be included in the definition of "new drugs" under the New Drugs and Clinical Trial (NDCT) Rules, 2019.



### About DTAB:

- **Role:** DTAB is the highest statutory decision-making body in India for technical matters related to drugs.
- **Establishment:** It was established under the **Drugs and Cosmetics Act, 1940**.
- **Part of:** DTAB functions within the **Central Drugs Standard Control Organization (CDSCO)**.
- **Primary Function:** The board advises the **Central and State Governments** on technical matters concerning the administration of the Drugs and Cosmetics Act, 1940, and also carries out other functions as directed by the Act.
- **Nodal Ministry:** It operates under the **Ministry of Health and Family Welfare**.

### What is a New Drug?

According to **Rule 122 E** of the **Drugs and Cosmetic Rules, 1945**, a new drug can be:

- A drug not used previously in the country and not recognized as safe and effective by the licensing authority.
- An already approved drug with modifications or new claims, including new indications, dosage, or routes of administration.

### Implications of Including Antibiotics as New Drugs:

- **Documentation:** The manufacturing, marketing, and sale of antibiotics will be formally recorded.
- **Regulatory Oversight:** Approvals for manufacturing and marketing will need clearance from the **Central Government**, rather than **State-level drug administration**.
- **Prescription-based Sale:** Antibiotics will be sold only with a valid prescription, ensuring more regulated use and potentially curbing antibiotic misuse.

This step is aimed at enhancing the safety and efficacy of antibiotic use in India, preventing antimicrobial resistance, and improving overall public health.



**10** Graded Response Action Plan (GRAP)

**Context:** The **Graded Response Action Plan (GRAP)** is a strategic framework aimed at mitigating air pollution in the **Delhi-NCR** (National Capital Region). It was introduced as an emergency mechanism to tackle deteriorating air quality, especially during the winter months when pollution levels in the region tend to rise dramatically.



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**Key Features of GRAP:**

- **Purpose:** GRAP was created to systematically address and reduce air pollution levels in **Delhi-NCR**, triggered when the **Air Quality Index (AQI)** reaches the "poor" category or worse.
- **Seasonality:** GRAP is particularly crucial during the **winter** due to the tendency for air pollution to spike because of factors like stubble burning, vehicular emissions, and meteorological conditions (like lower temperatures and slower wind speeds).

**Implementation:**

- **Commission for Air Quality Management (CAQM):** The **CAQM** is responsible for overseeing GRAP's implementation. It coordinates with the **Ministry of Environment, Forest and Climate Change (MoEFCC)** and pollution control boards of various NCR states (Delhi, Uttar Pradesh, Haryana, Rajasthan).
- **Sub-Committee:** A sub-committee formed by CAQM includes officials from state pollution control boards, scientists from the **India Meteorological Department (IMD)**, IITM, and

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other experts. This committee is responsible for meeting frequently and issuing orders as per the GRAP stages.

In case of any conflict between state-level directives and CAQM directions, CAQM's orders will take precedence.

### Stages of GRAP:

GRAP consists of **four stages**, each corresponding to the severity of air pollution levels, based on the AQI:

- 1. Stage I ("Poor" air quality):** AQI between **201-300**.
  - This stage triggers basic pollution control measures such as restricting certain construction activities and encouraging the use of public transport.
- 2. Stage II ("Very Poor" air quality):** AQI between **301-400**.
  - Actions may include stricter enforcement of pollution norms, restrictions on diesel generators, and enhancing public transportation services.
- 3. Stage III ("Severe" air quality):** AQI between **401-450**.
  - This stage introduces bans on construction activities, entry of trucks into Delhi, and encouraging carpooling to reduce vehicular emissions.
- 4. Stage IV ("Severe+" air quality):** AQI greater than **450**.
  - The most stringent measures come into play, such as banning non-essential vehicles and further restricting industrial activities.

### Air Quality Index (AQI):

The **AQI** is a tool used by government agencies to measure air pollution levels and assess their health impact. The **AQI scale** provides the following ranges:

- **0-50:** "Good"
- **51-100:** "Satisfactory"
- **101-200:** "Moderate"
- **201-300:** "Poor"
- **301-400:** "Very Poor"
- **401-450:** "Severe"
- **450+:** "Severe+"

Higher AQI values indicate more serious health risks, particularly for vulnerable populations, and the advisories and actions under GRAP are tailored to each AQI category to protect public health.