DAILY CURRENT AFFAIRS 03-11-2025

GS-1

1. Cloud Seeding

GS-2

2. Model Youth Gram Sabha Initiative

3. Skilling for AI Readiness (SOAR) Programme

4. Chabahar Port

GS-3

5. Hygrocybe pellucida

Cloud Seeding

Syllabus: GS-1: Indian Geography – Rainfall – Cloud Seeding & GS-3: Environment – Pollution.

Context:

➢ **Delhi Government** has partnered with **IIT–Kanpur** to conduct **cloud seeding experiments** aimed at reducing post-monsoon air pollution.

➢ **Experts from the Ministry of Earth Sciences (MoES)** caution that **absence of rain-bearing clouds** in the post-monsoon period makes the initiative scientifically ineffective.

What is Cloud Seeding

About:

➢ A **weather modification technique** to enhance precipitation (rain or snow) from existing clouds.

➢ **It cannot create clouds**, only enhances rain from moisture-laden ones.

Mechanism:

➢ Involves **dispersing substances** such as:

  o Silver iodide, Potassium iodide, Sodium chloride, or Dry ice (solid CO_2)

➢ Dispersed via **aircraft or rockets** into existing clouds.

➢ These act as **Cloud Condensation Nuclei (CCN)** or **Ice Nuclei (IN)**.

➢ Supercooled water droplets freeze on them → form ice crystals → coalesce → fall as **rain/snow**.

Cloud Seeding: India & Global Experience

In India:

➢ **CAIPEEX (Cloud Aerosol Interaction and Precipitation Enhancement Experiment)** by **MoES (2009–2019)**:

  o Rainfall increase observed: **up to 46%** under favourable conditions.

➢ **States experimenting:** Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu (for drought relief).

Globally:

➢ **China:** Uses for weather control (e.g., **2008 Beijing Olympics**).

➢ **UAE & Saudi Arabia:** Regularly employ it to **combat water scarcity**.

Applications

- Increase rainfall in **drought-prone regions**.
- **Reduce air pollution** by washing out particulates (Delhi experiment).
- **Disperse fog** near airports/highways.
- **Hail suppression** and agricultural weather management.

Limitations in Using Cloud Seeding for Air Pollution

Challenge	Explanation
Lack of Rain-bearing Clouds	Post-monsoon (Oct–Dec) is dry; low humidity and weak vertical motion limit cloud formation.
Dependence on Western Disturbances	Rains come only from occasional Mediterranean systems – unpredictable and sparse.
Short-lived Impact	Temporary washout; pollution returns as emissions persist.
Environmental Concerns	Silver iodide may accumulate in soil/water — long-term impacts uncertain.
Accountability Issues	No clear liability if flooding/extreme rain follows seeding.
Poor Cost-Benefit Ratio	Limited local data and uncertain outcomes divert funds from proven interventions.

A costly chase for rain

Cloud seeding is a weather modification process, dispersing chemicals such as silver iodide into clouds to enhance their ability to produce rain. For the Delhi trial, IIT-Kanpur used a modified Cessna-206H

8 flares with silver iodide and sodium chloride compounds were fired in each of the two phases

Phase 2 flight path — Meerut, Mandaula, Burari, Jahangirpuri, DELHI

Areas affected
Khekra, Burari, north Karol Bagh, Mayur Vihar, Sadakpur, Meerut, and Bhojpur, govt said

What took place today
Delhi government and IIT-Kanpur hold two cloud seeding trials

PHASE-1
1.15pm An aircraft departs from IIT-Kanpur
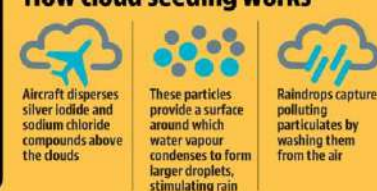2pm Seeding carried out in Burari
3pm Aircraft lands in Meerut

PHASE-2
4pm Aircraft departs and carries out the activity till 5pm in the same area, then departs

How cloud seeding works
Aircraft disperses silver iodide and sodium chloride compounds above the clouds
These particles provide a surface around which water vapour condenses to form larger droplets, stimulating rain
Raindrops capture polluting particulates by washing them from the air

Persistent Causes of Delhi's Air Pollution

- ➢ **Vehicular Emissions**

    - ○ 1.2 crore+ vehicles; high PM, NOx, CO emissions.

- ➢ **Crop Residue Burning**

    - ○ From Punjab & Haryana → seasonal spike in PM2.5 levels.

- ➢ **Industrial & Construction Pollution**

    - ○ Dust from construction/demolition.

    - ○ Unregulated small industries using **coal, biomass, furnace oil**.

- ➢ **Meteorological & Geographical Factors**

    - ○ **Temperature inversion** and **weak winter winds** trap pollutants.

    - ○ **Indo-Gangetic Plain topography** restricts dispersion.

Sustainable Long-term Solutions

Area	Suggested Measures
Emission Control	Strengthen **vehicle norms**, promote **EVs** under **EMPS 2024**, expand charging infra.
Industrial Regulation	Enforce **NCAP**, **Graded Response Action Plan**, phase out coal plants in NCR.
Waste Management	Ban open burning, promote segregation; adopt **Surat** and **Indore** models.
Crop Residue Management	Promote **Happy Seeder**, **CRM machinery**, incentives for sustainable practices.
Green Infrastructure	Expand **urban forests**, green belts, roadside plantations.
Public Participation	Encourage **carpooling, energy conservation**, and citizen awareness drives.

Conclusion

- ➢ **Cloud seeding** is an innovative but **scientifically uncertain** approach.

- ➢ It can offer **temporary relief**, but **not a substitute** for structural emission control.

- ➢ **India's focus** should remain on:

    - ○ Sustainable **air quality management**,

    - ○ **Clean energy transition**, and

o **Long-term policy enforcement** rather than short-term atmospheric manipulation.

Model Youth Gram Sabha Initiative

Syllabus: GS-2: Indian Polity – Local Self Government.

Context:

➢ Launched by **Ministry of Panchayati Raj** in collaboration with the **Department of School Education & Literacy** and **Ministry of Tribal Affairs**.

➢ Announced on **30 October 2025** (PIB).

➢ Aims to provide **hands-on experience of grassroots democracy** to students through **mock Gram Sabhas**.

Introduction

➢ India's **Gram Sabhas** under **Article 243** of the Constitution embody **direct democracy** at the village level.

➢ Despite being a cornerstone of the **Panchayati Raj system**, **youth participation remains low** due to lack of awareness and exposure.

➢ India's **youth majority** (world's largest) makes their involvement vital for **"Viksit Bharat" (Developed India)**.

Objective of the Initiative

To **educate, engage, and empower youth** in democratic governance and local development through **experiential learning**.

Key Objectives:

- ➢ **Educate students** about the **three-tier Panchayati Raj system** (73rd Constitutional Amendment).

- ➢ **Encourage participation** in Gram Sabhas and local governance.

- ➢ **Develop leadership skills** such as communication, decision-making, and teamwork.

- ➢ **Promote awareness** about local governance issues and participatory planning.

Vision

"To nurture empowered, responsible, and empathetic young citizens who actively participate in democratic processes and contribute to sustainable and inclusive national development."

Core Aims:

- ➢ Foster **active, informed, and empathetic citizenship** rooted in **constitutional values**.

- ➢ Promote **inclusivity, justice, equity, and consensus-building**.

- ➢ Build life skills: **leadership, critical thinking, communication, teamwork**.

- ➢ Create awareness of **Localized Sustainable Development Goals (LSDGs)**.

Target Institutions

- ➢ **Jawahar Navodaya Vidyalayas (JNVs)** – established under NPE 1986 to nurture rural talent through quality residential education.

- ➢ **Eklavya Model Residential Schools (EMRSs)** – for **Scheduled Tribe (ST)** students in remote areas, ensuring equal access to quality education.

Implementation Approach

Pilot Phase (March–April 2025):

- ➢ Conducted in selected JNVs and EMRSs.

- ➢ Schools held **Model Gram Panchayat** (20%) and **Model Gram Sabha** (80%) simulations.

- ➢ Feedback gathered → SOP refined for scaling up.

Rollout Timeline:

- ➢ **July 2025:** Schools identified.

- ➢ **July–Aug 2025:** Orientation for **200 master trainers & teachers**.

- ➢ **Aug–Sept 2025:** Mock Gram Sabha sessions (e.g., Baghpat, Alwar).

- ➢ **Oct–Nov 2025:** Regional competitions (5 regions).

➢ **Dec 2025:National competition** → Top 3 teams felicitated.

Structure of Model Youth Gram Sabha

Roles Simulated:

➢ **Sarpanch, Ward Members, Panchayat Secretary, PDO, AWW, ASHA**, etc.

➢ **Students represent** different community groups and **line departments** (Health, Rural Development, WCD).

Process:

➢ **Preparation:** Circulation of agenda, meeting notices (10 days prior).

➢ **Meeting:**

   o Opening by Sarpanch.

   o Review of past decisions, new agenda items.

   o Discussion on budgets, fund gaps, and innovations for local revenue.

➢ **Decision-making:** Voting on proposals.

➢ **Documentation:** Minutes recorded and resolutions summarized.

Model Youth Gram Sabha Module

Framework: MLJP – Meaning, Learning, Joy, Pride

Components:

➢ **National Level Master Trainer (NLMT) Guide** – process overview, facilitator roles, MLJP principles.

➢ **Facilitation Training Module for Teachers** – pictorial, easy-to-use guide for experiential learning and event preparation.

➢ **Evaluation Framework** – pre-, during-, and post-event assessment with indicators and school performance recognition.

Funding & Recognition

➢ ₹**20,000 per school** as one-time assistance for conducting mock Sabha.

➢ **Certificates of appreciation** for participating students.

➢ **Regional level awards** – token cash prize for school development.

➢ **National level awards** – substantial cash prizes for top 3 teams.

➢ Ministry to support **logistics for national finalists**.

Alignment with NEP 2020

- ➢ NEP 2020 stresses **civic consciousness, constitutional values, and national pride**.

- ➢ Encourages **experiential, participatory education** to build responsible global citizens.

- ➢ MYGS embodies NEP's vision of **education for citizenship, sustainability, and ethics**.

Expected Outcomes

- ➢ **Active civic engagement:** Students learn real-world governance participation.

- ➢ **Leadership development:** Strengthens communication, teamwork, and decision-making skills.

- ➢ **Empowered youth voices:** Encourages students to express and deliberate on local issues.

- ➢ **Democratic mindset:** Promotes values of **transparency, inclusion, and accountability**.

- ➢ **Bridging the gap:** Between classroom learning and practical democratic governance.

Conclusion

- ➢ The **Model Youth Gram Sabha** acts as a **"Loktantra Ki Pathshala" (School of Democracy)** for India's youth.

- ➢ It **bridges the gap** between education and governance by instilling **democratic values and civic responsibility**.

- ➢ By empowering young citizens at the grassroots, MYGS strengthens the **foundation of India's democracy** and prepares youth for a **participatory, inclusive, and accountable future**.

Skilling for AI Readiness (SOAR) Programme

Syllabus: GS-2; Government Policies and Interventions

Context

- ➢ India is witnessing rapid **digital transformation** across sectors, with AI becoming central to industry, governance, and innovation.

About SOAR Programme:

- Launched by the **Ministry of Skill Development and Entrepreneurship (MSDE)**.
- Seeks to **integrate AI learning into school education** and **teacher training**, building foundational skills for AI-driven careers and entrepreneurship.
- Long-term vision: **Position India as a global AI leader**.

Target Groups & Modules:

- **Students (Classes 6–12):** 3 modules of 15 hours each.
- **Teachers:** 1 module of 45 hours.
- **Focus Areas:**
    - AI and Machine Learning fundamentals
    - Data literacy
    - Ethical and responsible use of technology

Budgetary Support & Infrastructure:

- **Union Budget 2025–26** allocated **₹500 crore** to establish a **Centre of Excellence in AI for Education**.
- Functions of the centre:
    - Develop **AI-based learning tools** and **multilingual AI resources** for Indian languages
    - Promote **innovative classroom practices**
    - Support **curriculum development** in technical and higher education institutions
- Complements ongoing AI initiatives by **IITs, AICTE-approved colleges**, and other research institutions.

Broader Significance:

- Strengthens **India's human capital** for the AI economy.
- Encourages **ethical AI practices** among students.
- Supports **entrepreneurial ventures** and innovation in AI technologies.
- Contributes to India's **global competitiveness in AI** across sectors like healthcare, agriculture, education, and governance.

Chabahar Port

Syllabus: GS-2: International Relations – India – USA – Iran.

Context:

➤ Recently, the U.S. issued a **six-month exemption** to India, allowing continued operations without penalty.

Introduction

➤ Chabahar Port is located in Iran's Sistan-Baluchestan province, along the Gulf of Oman.

➤ It is India's first overseas port project and serves as a vital gateway to Afghanistan and Central Asia.

➤ Recently, the United States granted India a **six-month waiver** from sanctions on operations related to the port.

Background & Timeline

➤ India and Iran signed an agreement in 2016 to develop and operate Chabahar Port.

➤ In May 2024, India signed a **10-year agreement** to operate part of the port through India Ports Global Limited (IPGL).

➤ The U.S. sanctions on Iran have repeatedly slowed the port's development and operations.

Strategic Importance for India

Connectivity & Bypassing Pakistan

➤ Provides India direct access to Afghanistan and Central Asia, bypassing Pakistan.

➤ Reduces dependence on land routes through Pakistan for trade with Afghanistan.

Link with International Corridors

➢ Integrates with the **International North-South Transport Corridor (INSTC)**.

➢ Offers India access to Eastern Europe, Russia, and Central Asia via Iran.

Counterbalance to Gwadar Port

➢ Serves as a counterweight to Pakistan's **Gwadar Port**, developed by China under the Belt and Road Initiative (BRI).

➢ Enhances India's influence in the Indian Ocean region.

Economic & Developmental Significance

➢ Facilitates trade and transit of goods between India, Iran, Afghanistan, and Central Asia.

➢ Promotes regional connectivity, economic growth, and market access for landlocked countries.

➢ Enhances India's role in regional infrastructure development.

Geopolitical & Diplomatic Significance

➢ Strengthens India-Iran-Afghanistan trilateral cooperation.

➢ Demonstrates India's **strategic autonomy**—balancing ties with both the U.S. and Iran.

➢ The U.S. waiver reflects recognition of India's regional stabilizing role.

Implications of the U.S. Waiver

➢ Ensures continuity of India's port operations and developmental work.

➢ Provides diplomatic breathing space for India to implement its long-term commitments.

➢ Signals trust and strategic understanding between India and the U.S. on regional connectivity issues.

➢ Encourages regional partners to engage with Chabahar without fear of sanctions.

Challenges & Constraints

➢ **Temporary Nature of Waiver:** The exemption lasts only six months; future extensions are uncertain.

➢ **Geopolitical Uncertainty:** Volatile U.S.-Iran relations could disrupt operations.

➢ **Competition:** China-Pakistan axis (via Gwadar Port) could limit strategic gains.

➢ **Infrastructure Gaps:** Need for efficient rail and road links to Afghanistan and Central Asia.

➢ **Security Concerns:** The region is prone to instability and militancy.

Case Study: India–Iran 10-Year Agreement (2024)

➢ India Ports Global Limited (IPGL) took over operation of a terminal in Chabahar for 10 years.

➢ The agreement aims to increase cargo handling capacity and expand trade routes.

➢ Despite sanctions, India remains committed to the project, emphasizing long-term regional connectivity.

Hygrocybe pellucida

Syllabus: GS-3; Biodiversity

Context

➢ A rare fungi species, **Hygrocybe pellucida**, was recently sighted **for the first time in Telangana** within the **Kawal Tiger Reserve**.

About Hygrocybe pellucida

➢ **Classification:** Belongs to the **Hygrophoraceae** family.
➢ **Characteristics:** Known for **bright, waxy, and vividly coloured fruiting bodies**—hence commonly called **wax caps** or **wax cups**.
➢ **Habitat:** Typically occurs in **unimproved grasslands, mossy forest floors**, and **nutrient-poor habitats**.
➢ **Discovery:** First described as a **new species in Kerala (2024)**.
➢ **Genus Facts:**
  o *Hygrocybe* is a **large genus of agarics**, with around **350 known species** worldwide.
  o Distributed across **temperate and tropical regions**.

About Kawal Tiger Reserve

➢ **Location:** Telangana State, along the **banks of River Godavari**; part of the **Deccan Peninsula–Central Highlands** biogeographic zone.

➢ **Topography:** Lies in the **Sahyadri mountain ranges**.

➢ **History:** Declared a **Tiger Reserve in 2012**, upgraded from Kawal Wildlife Sanctuary.

➢ **Rivers:** Catchment area for **Godavari** and **Kadam** rivers (flow southwards).

➢ **Landscape Linkages:**
   o Forms the **southernmost tip** of the **Central Indian Tiger Landscape**.
   o Connected with **Tadoba–Andhari (Maharashtra)** and **Indravati (Chhattisgarh)** Tiger Reserves.

➢ **Vegetation: Southern Tropical Dry Deciduous Forest**.

➢ **Flora:** Dominated by **Teak**, **Bamboo**, *Anogeissus latifolia, Mitragyna parviflora*, etc.

➢ **Fauna:** Includes **nilgai, chousinga (four-horned antelope), chinkara, blackbuck, sambar, and spotted deer**.