UPSC Daily Current Affairs| Prelim Bits 11-06-2025

Foreigners Identification Portal (FIP)

Prelims: *Current events of National and International Importance*

Why is news?

The Ministry of Home Affairs (MHA) has revised the method of collecting and uploading biometric data of illegal migrants due to technical challenges in the earlier process.

- **Foreigners Identification Portal (FIP) –** It was the portal to **collect biometric and biographic details** of **illegally** staying foreigners.
- **Launch** – 2018
- **Nodal authority for FIP implementation** – Bureau of Immigration through FRROs

FRROs (Foreigners Regional Registration Offices) are the field offices of the Bureau of Immigration under Ministry of Home Affairs and are responsible for registration, visa services, monitoring, and immigration-related matters of foreign nationals residing in India.

Recent updation

- **Data collection and management –** Scanners, computers, and webcams will be installed in police stations, detention centres, and border outposts to record and upload migrant biometrics directly to FIP.
- Manual scanning caused data mismatches as states/UTs faced difficulties digitizing fingerprints taken on paper, creating gaps between manual records and digital data on the FIP.
- **Shift from NAFIS to IVFRT's district modules –** Instead of using NAFIS devices, fingerprint scanners under the District Police Module (DPM) of the Immigration, Visa, Foreigners Registration & Tracking (IVFRT) system will now be used.
- Earlier, FIP planned to use NAFIS machines for inter-operable biometric data across agencies.

NAFIS (National Automated Fingerprint Identification System) a centralized biometric database launched by the National Crime Records Bureau to modernize criminal identification in India.

- The Bureau of Immigration will oversee data migration from FIP to IVFRT, ensuring no transfer of migrant data to the NAFIS criminal repository.

- **Nationality verification post biometric capture –** Once data is uploaded to the FIP, the Ministry if External Affairs will process cases for nationality verification to enable deportation.
- **Significance –** To streamline and fast-track deportation by digitizing and standardizing data collection,
- It also aims to effectively identify, document, and deport illegal migrants with minimal errors and delays.

Reference

The Indian Express| Centre's revised procedure for foreigners ID portal

International Year of the Woman Farmer

Prelims – *Sustainable development| Current event of national and international importance*

Why in news?

UN Declares 2026 as International Year of the Woman Farmer.

- The **UN General Assembly** has declared **2026** as the *International Year of the Woman Farmer*, with **over 100 countries co-sponsoring** the resolution.
- **Aim** – To recognize women's essential role in agriculture and highlight the challenges they face such as land ownership, market access, and financial inclusion.
- The **2026 International Year of the Woman Farmer** offers a historic chance to:
  - Champion **resilient and inclusive agriculture**.
  - Strengthen **women's role in food systems**.
  - Align agricultural development with **gender equality and sustainability goals**.

National Food Security Mission: Allocates 30% of its budget specifically for women farmers in several states.

Key Contributions of Women in Agriculture

- Women contribute to **60–80%** of food production in developing countries.
- They are responsible for **nearly 50% of the global food supply**.
- In South Asia, women account for 39% of agricultural labour.
- In India, about 80% of economically active women work in agriculture, yet:
  - **Only 14%** own land; **NFHS data** shows an even lower rate of **8.3%**.
  - This lack of ownership **limits access to credit**, technologies, and formal institutions.

Mahila Kisan Sashaktikaran Pariyojana (MKSP) focuses on skill development and

resource access for women farmers.

Sub-Mission on Agricultural Mechanisation provides 50–80% subsidies on machinery for women.

Quick Facts
• **ENACT** – Enhancing Climate Adaptation of Vulnerable Communities through Nature-based Solutions and Gender Transformative Approaches. • Implemented in **Nagaon, Assam** by **WFP and Government of Assam**; • **Funded by** – **Norway**. • **Features**: - Weekly **climate advisories via phone** to **300+ farmers** in **17 villages**. - **Climate Adaptation Information Centres** enable video training, meetings, and tech-based knowledge dissemination. - Promotes **flood-tolerant seeds**, **smart seed production**, **diversified livelihoods**, and **market linkages**. • Agricultural departments, rural missions, meteorological departments, and agriculture universities.

Reference

The Hindu| Empowering women in agriculture for food security

Stratospheric Aerosol Injection (SAI)

Prelims – General issues on Environmental ecology, Bio-diversity and Climate Change.

Mains – General Studies-III (Conservation, environmental pollution and degradation, environmental impact assessment)

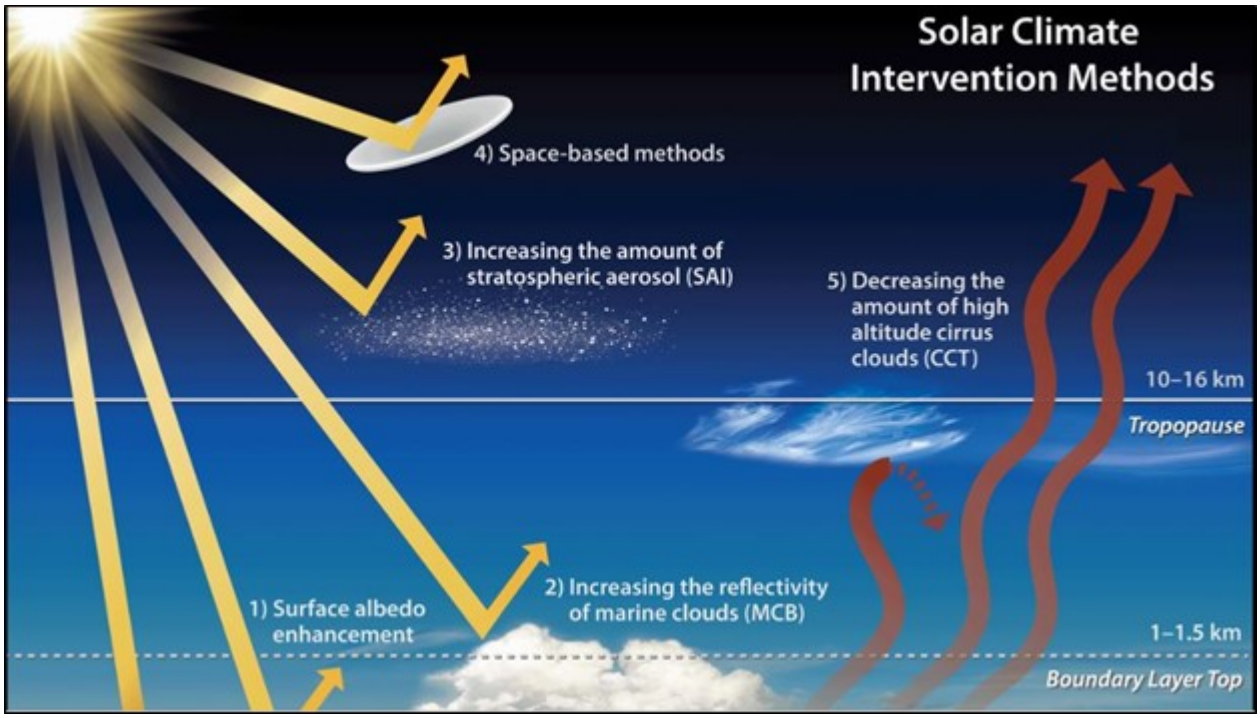
Why in news?

A recent study published in the journal Earth's Future has explored an innovative approach to SAI, specifically by investigating low-altitude aerosol delivery, aiming to reduce costs and potentially bring it closer to implementation despite opposition.

- **Stratospheric Aerosol Injection (SAI)** – It involves injecting aerosols (tiny particles) into Earth's stratosphere.
- These aerosols then reflect a portion of incoming sunlight back into space, thereby reducing the amount of solar radiation reaching the Earth's surface and leading to a cooling effect.
- **Low-Altitude SAI** – Traditionally, SAI envisioned injections at very high altitudes (above 20 km).
- However, the new study investigates the feasibility of spraying particles at lower heights (e.g., 13 km).

Advantages of Low-Altitude Injection

- **Technical Feasibility** – It is technically less challenging.
- **Aircraft Requirements** – It does not require specially designed high-altitude aircraft.
- **Accessibility and Cost-Effectiveness** – This makes the approach potentially more accessible and cost-effective, as existing aircraft (e.g., Boeing 777F) could be modified, though modifications like insulated double-walled pressurized tanks would still be necessary for safe aerosol transport.
- **Faster Implementation** – Designing and building specialized high-altitude aircraft takes nearly a decade and billions of dollars.
- Modifying existing aircraft is a faster and cheaper alternative.



Risks and Side Effects

- **Increased Aerosol Use** – Using three times the usual amount of aerosols (as suggested for 1°C cooling at lower altitudes) carries greater risks.
- **Direct Side Effects** – These include delayed recovery of the ozone layer and acid rain.
- **Uneven Cooling** – The cooling effect is projected to be more pronounced in Polar Regions than in the tropics, where warming is more severe.
- **Masking Climate Change** – A significant concern is that the cooling effect could mask the true extent of global warming, potentially leading to complacency among nations regarding the urgency of curtailing greenhouse gas emissions.
- **No Reversal of Climate Change** – It is crucial to understand that SAI would not reverse climate change; it would only provide a temporary cooling effect. It also would not address other ecological effects of climate change.
- **Social and Geopolitical Risks** – The global nature of SAI's effects presents immense challenges regarding governance, fairness, and democratic control. The lack of a clear international framework for its implementation and regulation is a major point of contention.
- **International Debate** – In 2021, the US National Academies of Sciences,

Engineering, and Medicine recommended funding solar geoengineering research with a focus on transparency.
- However, in 2022, an international coalition of scholars called for a moratorium on solar geoengineering R&D, arguing that the technology is "ungovernable in a fair, democratic and effective manner."

Reference

The Hindu | Stratospheric Aerosol Injection (SAI)

Chenab Bridge

Why in News?

Prime Minister recently inaugurated the world's highest railway bridge over the Chenab.

- It is the ***world's highest rail and arch bridge*** with a dock height of 359 meters from the river bed, 35 meters taller than Paris's iconic Eiffel Tower.
- It has been built between Bakkal and Kauri in Reasi district.
- **Designed & constructed by -** Joint venture consisting of Afcons Infrastructure, South Korea-based Ultra Construction & Engineering Company, and VSL India.
- **Geography** - It falls in ***zone-V,*** a major seismic zone with a fractured geology.
- It was proposed in one of the most complicated and isolated terrains in India.
- **Features -** It has a steel arch and concrete structure.
- Its deck is located on a transition curve (the part between straight and circular sections of roads) with a changing radius.
- **Life span -** It is designed to have a lifespan of 120 years and handle train speeds upto 100 km per hour.
- It can withstand earthquakes ***up to a magnitude of 8*** on the Richter Scale, besides high-intensity explosions equivalent to 40 tonnes of TNT.
- Its steel structure can withstand temperatures up to -20 degree C and wind speeds up to 266 km per hour.
- Even after the removal of one pier, it will remain in operation at a restricted speed of 30 km per hour.
- **Challenge** - To build the bridge without obstructing the flow of the Chenab River.

Reference

The Indian Express | Chenab Bridge

Sustainable Production of Nickel

Prelims – General issues on Environmental ecology, Bio-diversity and Climate Change.

Mains – *General Studies-III* (Conservation, environmental pollution and degradation, environmental impact assessment)

Why in news?

A recent study by researchers at the Max Planck Institute for Sustainable Materials, Germany, has introduced a new, carbon-free method of extracting nickel using hydrogen plasma, offering a cleaner and faster alternative to traditional methods.

- **Nickel** – Nickel (Ni) is a silvery-white metal used in various industries.
- It is the fifth most common element on earth and occurs extensively in the earth's crust and core.
- Nickel, along with iron, is also a common element in meteorites.
- Nickel occurs naturally in soil and water.
- It is also an essential nutrient for plants.

Significance of Nickel

- **Electric Vehicles (EVs)** – Nickel is a key component in lithium-ion batteries, which power EVs.
- As the world transitions to cleaner transportation, the demand for nickel in this sector is skyrocketing.
- **Renewable Energy** – It is used in various renewable energy technologies, including solar panels and wind turbines.
- **Stainless Steel and Alloys** – Nickel is a primary alloying element in stainless steel, providing enhanced durability and corrosion resistance.
- It is also used in other specialized alloys.
- **Gadgets and Electronics** – From smartphones to laptops, nickel finds its way into numerous electronic devices.

Conventional Extraction Process of Nickel

- **Calcination** – Heating the ore to remove moisture and other impurities.
- **Smelting** – Melting the ore at high temperatures, often using carbon as a reducing agent.
- **Reduction** – Further reactions with carbon to separate nickel from its oxides.
- **Refining** – Purifying the nickel to achieve the desired grade.

New Hydrogen Plasma Method

- This new approach offers a one-step, carbon-free process.
- **Replacing Carbon with Hydrogen** – Instead of using carbon as a reducing agent, this method utilizes hydrogen (H2) gas.
- **Hydrogen Plasma** – The key innovation lies in using hydrogen plasma. When hydrogen gas is subjected to high-energy electrons in an electric arc, it transforms into a plasma state, an extremely hot and reactive "fourth state of matter."
- **Rapid Reduction** – This highly reactive hydrogen plasma rapidly reduces metal oxides in the ore.
- **Carbon-Free Process** – The reaction of hydrogen with oxygen in the ore produces

water (H_2O) as a byproduct, rather than carbon dioxide.

- **Energy and Time Efficient** – The proposed method is significantly more energy-efficient (up to 18% savings) and faster than traditional methods, while cutting direct CO_2emissions by up to 84%.
- **Utilizing Low-Grade Ores** – Crucially, this technology efficiently extracts nickel from laterite ores, which are abundant but difficult to process with conventional methods.
- Laterite ores are formed in hot, tropical regions and are becoming increasingly important as higher-grade sulphide ores deplete.

Reference

The Hindu | Sustainable Production of Nickel

One Liners 11-06-2025

History, Art and Culture

Bhagwan Birsa Munda

Recently, PM paid tributes to great hero of the freedom struggle, Bhagwan Birsa Munda on the occasion of his Martyr's Day today.

• **Birsa Munda** (1875-1900) - was a revered tribal leader from Jharkhand, pivotal in India's independence movement against British rule and exploitation.

• **The Munda Rebellion -** He led the **"Ulgulan"** (Great Tumult) rebellion (1899-1900), mobilizing tribals against oppressive British land policies and forced labor.

• **Religious Reformer -** Birsa Munda founded **"Birsait,"** a faith promoting tribal customs, cleanliness, and monotheism, opposing external influences. His followers called him "Bhagwan" and "Dharti Aaba."

• **Advocate for Tribal Rights -** His rebellion highlighted tribal grievances, influencing the **Chotanagpur Tenancy Act of 1908**, which protected tribal land rights.

• **Symbol of Resistance -** Birsa Munda remains an enduring symbol of tribal resistance, advocating self-governance with his slogan: "Abua raj seter jana, maharani raj tundu jana."

• **Legacy and Remembrance -** Captured in 1900, he died at 25. His birth anniversary, November 15, is celebrated as Janjatiya Gaurav Diwas (Tribal Pride Day) in India.

Geography

Chenab Rail Bridge: An Engineering Marvel

The Chenab Rail Bridge in Jammu and Kashmir, the world's highest railway arch bridge, took over 20 years to build due to challenging terrain and weather. Opened in 2025, it's a testament to collaborative engineering.

• **Aim**- Is to connect the Kashmir Valley with the rest of India by rail, providing all-weather connectivity that was previously lacking due to challenging terrain and weather conditions.
• This includes linking major destinations like Katra (near Shri Mata Vaishno Devi) and Srinagar.
• **Located in** - The bridge is located between Kauri and Bakkal rail stations in the Reasi district of Jammu and Kashmir.
• **Bridge Connecting -** The Chenab Rail Bridge is a crucial part of the Udhampur-Srinagar-Baramulla Rail Link (USBRL) project.
• **Construction Timeline -** Approved in 2003, the bridge's construction spanned over two decades due to the region's rough terrain and security concerns.
• **Special Features -** Designed for a 120-year lifespan, the bridge can withstand 260 km/h winds, earthquakes, extreme temperatures, and rising water, allowing trains up to 100 km/h, with a unique safety feature enabling slow movement even if a pillar is damaged.

Stratospheric Aerosol Injection (SAI).

Innovation Unveiled A recent study in *Earth's Future* proposes a novel approach to Stratospheric Aerosol Injection (SAI).
• **Objective** - This innovation could significantly reduce costs and potentially advance SAI's implementation, despite ongoing opposition.

• **SAI** - Is a climate intervention method designed to cool the Earth. It involves introducing a layer of small, reflective particles into the upper atmosphere to reflect sunlight back into space.

• **Volcanic Inspiration** - The concept for SAI is inspired by volcanic eruptions, which are known to cause temporary global cooling by releasing aerosols into the atmosphere.
• **How SAI Works** – It aims to replicate this natural cooling effect by directly injecting sulfur dioxide (SO_2) into the stratosphere. There, it forms sunlight-reflecting sulfate aerosols.
• **Aerosols** - Are tiny solid or liquid particles suspended in air or gas. They can be natural (e.g., fog, volcanic gas) or artificial (e.g., fossil fuel smoke). They are either directly emitted (primary) or formed from precursor gases (secondary).
• **Aerosol Characteristics** - These numerous particles, often a mix of inorganic and organic substances, typically range from a few millimicrometers to about 1 micrometer in diameter. Visible atmospheric aerosol plumes include smoke, smog, haze, and dust.

Polity & Governance

Rohini Gram Panchayat Wins Gold

Rohini Gram Panchayat (RGP) in Dhule, Maharashtra, a 100% tribal village, has secured the Gold Award at the National e-Governance Awards 2025.

• **Highlights its** - Success in digital rural governance.
• **National Recognition -** Selected from over 1.45 lakh entries, Rohini was honored in the "Grassroots Level Initiatives" category by DARPG and the Ministry of Panchayati Raj.
• **Award -** Includes a trophy, certificate, and a ₹10 lakh cash prize, acknowledging best practices in e-governance.
• **Digital Transformation –** RGP has implemented over 956 digital services, including online birth/death certificates via WhatsApp/email, adhering to the Maharashtra Right to Public Services Act.
• **Wide Range of Services -** Digital services span education, women and child welfare, health, agriculture, and automated certificate issuance, ensuring comprehensive community support.
• **Example of Digital India -** This achievement sets a significant precedent for Digital India, empowering tribal communities and bridging rural-urban service gaps through transparent, efficient, technology-driven governance.

NAFIS Foreigners Portal Update

The Centre has revised the Foreigners Identification Portal (FIP) of the National Automated Fingerprint Identification System (NAFIS).

• **States and Union Territories** - Are now instructed to use existing fingerprint scanners within the District Police Module (DPM) of the IVFRT system.
• **NAFIS is** - A pan-India searchable database designed to centralize fingerprints of criminals across all states and UTs.
• **Real-time Access Law enforcement** - Agencies can upload, trace, and retrieve information from the NAFIS database 24/7 in real-time.
• **NCRB Manages NAFIS** - The National Crime Records Bureau (NCRB) oversees NAFIS operations from its Central Fingerprint Bureau in New Delhi.
• **Unique Criminal ID** - NAFIS assigns a unique 10-digit National Fingerprint Number (NFN) to each criminal, which remains valid for their lifetime, linking all their registered crimes.
• **NFN Structure** - The NFN's first two digits represent the state code of registration, followed by a sequence number, creating a state-partitioned system for digital fingerprint matching.

International Relations and Issues

Ejiao

Pakistan Donkey Prices Surge Recent reports indicate a sharp increase in donkey prices across Pakistan. This sudden surge is directly linked to the escalating demand from China for ejiao.

• **What is Ejiao -** Is a traditional Chinese medicine. It's a gelatinous substance produced by stewing and concentrating donkey skin.
• **Medicinal Uses** - Ejiao is prized in clinics for its purported health benefits, including anti-fatigue, immunity improvement, tumor suppression, and anti-anemia effects.
• **Production Process** - The core ingredient of ejiao is collagen extracted from donkey skin. This collagen is then combined with various herbs and other ingredients to form consumable bars, pills, liquids, or even beauty products.
• **Booming Industry** - Between 2013 and 2016, annual ejiao production jumped from 3,200 to 5,600 tonnes. China's ejiao industry has seen a remarkable 160% growth in the last five years, driving the need for millions of donkey hides annually.
• **Pakistan's Role** - Pakistan is a significant source, holding the third-largest donkey population globally, after Ethiopia and Sudan.

Environment

Tamhini Wild life Sanctuary

The Maharashtra Forest Department has recently collaborated with Microsoft and Pune's Centre for Youth Development and Activities (CYDA).

• **This partnership aims** - To tackle pressing socio-ecological issues within the Tamhini Wildlife Sanctuary.
• **Sanctuary Location** - The Tamhini Wildlife Sanctuary is a protected forest situated within the Western Ghats, in close proximity to Pune, Maharashtra.
• **Area and Formation Spanning** - 49.62 sq.km, the sanctuary was established by incorporating reserved forest compartments from both the Pune and Roha (Thane) forest divisions.
• **Diverse Vegetation** - The sanctuary boasts a rich variety of vegetation, including evergreen, semi-evergreen, and moist deciduous forests.
• **Notable Flora Key tree species** - Found here include teak, bamboo, Ain, Shisham, mango, and Jamun.

New Bat Species Discovered

Researchers recently identified a new bat species: the Himalayan long-tailed Myotis (*Myotis himalaicus*).

• **Myotis frater complex** - This new species belongs to the Myotis frater complex, a group of similar bats distributed across Asia, including China, Siberia, and Japan.
• **Habitat and Rarity** - The Himalayan long-tailed Myotis prefers Deodar, Pine, and Cedar forests on the southern slopes of the Himalayas, appearing to be a rare species.
• **Geographic Distribution Specimens** - Of these bats have been found in Uttarakhand, India, and Khyber Pakhtunkhwa, Pakistan.
• **Distinctive Features -** Considered “Medium-sized," these bats are about 3.5 inches long, weigh under an ounce, and have delicate feet, long thumbs, short ears, and delicate teeth.
• **Ecological Importance of Bats** - Bats are vital for ecosystem health. They are significant insect predators, controlling agricultural pests and mosquitoes. Their guano is a rich fertilizer, and some species act as crucial pollinators and seed dispersers.

Security

Ibex Tarana 88.4 FM

Chief of Army Staff (CAS) General Upendra Dwivedi visited Uttarakhand's Garhwal region to review troops' operational readiness, emphasizing vigilance in border areas.

• **Ibex Tarana 88.4 FM Inaugurated** - In Jyotirmath by CAS a unique Indian Army-backed community radio station in a border region.

• **Fostering Community** - The radio aims to promote local voices, traditional knowledge, and regional culture, bridging national security with community empowerment.

• **Diverse Programming** – It will feature programs on education, employment, disaster preparedness, weather, environment, tourism, health, entertainment, and local arts.

• **Youth Empowerment** - Gen. Dwivedi, in his inaugural podcast, called it a "platform to amplify youth voices," symbolizing unity and cultural pride.

• **Rich Fauna Tamhini** - Is home to diverse wildlife, such as Indian giant squirrels, barking deer, Indian pangolins, Indian civets, and wild boars. Bird species like the Malabar whistling thrush and crested serpent eagle are also prevalent.

Miscellaneous

Daji Panshikar Passes Away at 92

A very Renowned scholar Daji Panshikar, also known as Narahari Vishnu Shastri, passed away at 92 in Thane, Maharashtra, after a brief illness. His demise marks a significant loss to Marathi literature and cultural discourse.

• **Authority on Indian Epics -** Including Mahabharata, Eknaathi Bhagwat, and Bhavarth Ramayan. His interpretations enriched public understanding of these foundational texts.

• **Guiding Light in Theatre -** He played a vital role in Maharashtra's theatre community through Natyasampada Natya Sanstha, supporting script development and artist mentorship.

• **Legacy in Literature -** Panshikar was celebrated for blending literary scholarship with philosophical clarity, popularizing epic literature beyond academic circles and upholding the guru-shishya parampara.

• **Cultural Education -** He was deeply involved in cultural education, delivering intellectually rich and spiritually enlightening public lectures.