

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 18-08-2025

Table of Content

How 'Honour' Killings in India are Reinforced and Legitimised?

India To Launch Demographic Mission to Tackle Illegal Infiltration

PM Announced Next-gen GST Reforms

Impact of Ethanol Blending

S&P Upgrades India's Sovereign Rating to 'BBB'

New Type of Supernova Triggered by Black Hole-Star Interaction

NEWS IN SHORT

Sri Aurobindo

Alaska

Operation Sadbhavana

PM Viksit Bharat Rojgar Yojana

Bombax ceiba and Lagerstroemia speciosa

India's first sustainable aviation fuel plant

Mission Sudarshan Chakra

SLINEX-25

HOW 'HONOUR' KILLINGS IN INDIA ARE REINFORCED AND LEGITIMISED?

Context

- In India, caste remains a deeply rooted social structure, and 'honour' killings are emerging as a violent yet socially legitimised tool to preserve caste hierarchies, especially against inter-caste unions.

About Honour Killings

- Definition:** Honour killings refer to the murder of individuals (mostly young couples) by family or community members for allegedly bringing "dishonour" through relationships that **defy caste, community, or gender norms**.
- Geographical Pattern:** States like Tamil Nadu, Telangana, Maharashtra, and Kerala, where Dalit empowerment through education and jobs is higher, record both **higher rates of inter-caste marriages** and **higher cases of honour killings**.
 - Paradox:** Violence is most visible where caste hierarchies are being challenged, not where they remain unchallenged.
- According to **NCRB (National Crime Records Bureau)** data, India recorded 25 cases of honor killings in both 2019 and 2020, with a rise to 33 cases in 2021.

Reasons of Honour Killings

- Caste endogamy:** Families act as gatekeepers of caste boundaries and women's choice is policed to preserve lineage, land, and status.
- Khap/community sanctions:** Informal councils/kin networks encourage or legitimise violence or social boycotts.
- Fear of Exclusion:** Families who don't conform to traditional marriage norms face pressure and fear of being ostracized by their communities.
- Anonymity in social media:** Social media glorify caste pride and vigilante narratives, normalising punishment for defiance.

What are the Impacts?

- Constitutional rights:** It violates Articles 14, 15, 19, 21 of Indian Constitution.
- Gendered violence:** Disproportionately targets women asserting choice; also affects men from stigmatised castes/communities.
- Erosion of rule of law:** When communities take law into their own hands, it weakens the state's

authority to use force legally and also scares the police and witnesses from doing their duty.

- Social fragmentation:** It stokes caste/religious polarisation, discourages inter-group mobility and integration—hurting social capital and inclusive growth.

Measures taken against Honour' Killings

- There is no standalone central law** on honour crimes yet; cases are prosecuted as murder/attempt etc. under **Indian Penal Code** (now replaced by BNS) and allied laws, along with **SC/ST Atrocities Act** where applicable.
- Law Commission (Report 242, in 2012)** recommended a specific law to curb unlawful assemblies (Khap interference) in matrimonial choice.
- The Rajasthan government in 2019** enacted a special law prohibiting interference with matrimonial alliances in the name of honour/tradition—notable for criminalising collective/community pressure.

Judicial Pronouncements



Lata Singh Case (2006)

SC protected inter-caste marriages as freedom exercise.



Arumugam Servai Case (2011)

Khap panchayat diktats were termed illegal by SC.



Shakti Vahini Case (2018)

States were directed to protect couples.

Way Ahead

- Dedicated Legislation:** Enact a central law criminalising honour crimes and unlawful community interference, building on Law Commission recommendations and Rajasthan's example.
- Data & Monitoring:** Improve NCRB classification to capture all forms of honour crimes (murder, attempt, abetment, threats) with real-time reporting.
- Protection & Rehabilitation:** Establish district-level safe shelters, legal aid, counselling, and financial support for inter-caste and inter-faith couples.

SOURCE: TH

INDIA TO LAUNCH DEMOGRAPHIC MISSION TO TACKLE ILLEGAL INFILTRATION

In News

- On India's 79th Independence Day, Prime Minister Narendra Modi announced a **high-powered demography mission** to protect the country from the dangers posed by illegal immigrants.

Illegal immigration in India

- It is a multifaceted issue involving unauthorized entry, overstaying of visas, and undocumented migration across porous borders.
- India faces challenges from cross-border migration, especially in northeastern states like Assam and West Bengal, leading to concerns over jobs, social stability, and culture.

Causes of Illegal Migration

- Porous Borders:** India shares unfenced borders with Bangladesh, Myanmar, Nepal, and Bhutan, making clandestine entry easier.
- Political Instability, Ethnic and Religious Persecution:** Rohingya Muslims from Myanmar and minorities from Bangladesh and Pakistan often flee persecution, seeking refuge in India.
- Economic Disparities:** Migrants from neighboring countries seek better employment opportunities and living conditions.
- Lack of Legal Framework:** India is not a signatory to the 1951 UN Refugee Convention, and lacks a national refugee law, making it difficult to distinguish refugees from illegal immigrants.

Impacts of Illegal Migration

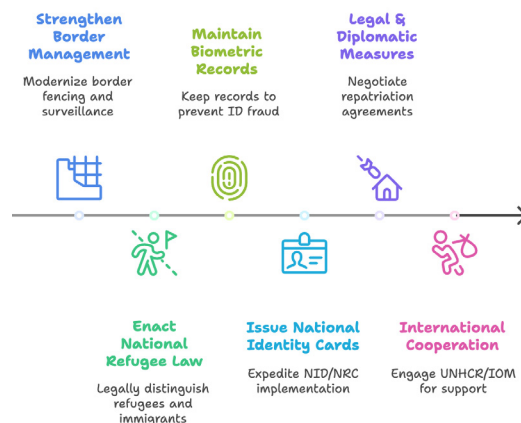
- Demographic & Social Impact:** Alters population composition in border states like Assam, Tripura, West Bengal.
 - Can fuel ethnic tensions (e.g., Assam Movement of the 1980s).
 - Strain on education, housing, healthcare, sanitation in urban centres (Delhi, Mumbai).
- Economic Impact:** Migrants often work for lower wages, affecting local workers.
 - Increase in unregulated jobs, reducing tax revenues.
 - Burden on Welfare Schemes as Free/subsidised rations, healthcare, and education diverted to non-citizens.
- Security Concerns:** Possibility of cross-border infiltration by extremist groups (ULFA, HuJI, ISI-backed outfits).
 - Fake documents (Aadhaar, ration cards, voter ID) used for unlawful activities.

- Smuggling, human trafficking, and narco-terrorism networks exploit porous borders.
- Political Impact:** Illegal immigrants become a vote-bank through forged documents.
 - Leads to polarised politics (CAA-NRC debates).
 - Inter-state disputes over settlement of migrants (e.g., North-east vs Centre).
- Diplomatic & Neighbourhood Relations:** Strains ties with neighbours like Bangladesh & Myanmar, who deny responsibility for outflow.
 - India's pushbacks (e.g., Rohingya deportation) criticised by international agencies on humanitarian grounds.
- Environmental Impact:** Pressure on land, water, and forests due to rising population density.
 - Encroachment into ecologically fragile areas (e.g., wetlands of Assam, forests of Northeast).
 - Contributes to urban slums and unsustainable resource use.

Steps Taken

- India reiterated its commitment to ensuring a crime-free border by effectively addressing the challenges of cross-border criminal activities, smuggling, movement of criminals and trafficking.
- Barbed wire fencing, border lighting, installation of technical devices and cattle fences** are measures for securing the border.
 - India plans to fence entire Myanmar border with anti-cut, anti-climb technology to deter illegal infiltration
- Legal Instruments:** Citizenship (Amendment) Act, 2019 excludes certain religious minorities from the definition of illegal migrants.
- National Register of Citizens (NRC)** used in Assam to identify undocumented migrants.

Managing Illegal Immigration



Source :TH

PM ANNOUNCED NEXT-GEN GST REFORMS

Context

- Recently, the Prime Minister of India has unveiled a **new vision for India's Goods and Services Tax (GST) regime** aimed at simplifying tax structures benefiting the poor, middle class, entrepreneurs, traders, and business owners.

Proposed Reforms in India's Goods and Services Tax (GST) Regime

- Simplified Tax Structure & Rate Rationalization:**
 - Two Main Slabs:** 5% (merit rate) and 18% (standard rate);
 - 99% of items in the 12% slab to move to 5%;
 - 90% of items in the 28% slab to shift to 18%;
 - Special 40% Slab:** For 'sin goods' like tobacco, pan masala, and online gaming;
- Structural and Process Reforms:**
 - Correction of inverted duty structures (especially in textiles and MSMEs);
 - Resolution of classification disputes to reduce litigation;
 - Pre-filled returns to ease compliance and reduce manual errors;
 - Automated refunds for exporters and businesses with inverted duty structures;
- End of Compensation Cess:**
 - Compensation cess (previously levied on luxury/sin goods) to be phased out by November–December 2025;
 - Fiscal space created will allow for smoother rate alignment.

Economic and Social Impact

- Simplification in GST regime is expected to:
 - Reduce compliance burdens;
 - Encourage consumption;
 - Improve tax collection through better compliance.
- The reforms will be consumer-centric, with reduced taxes on essential goods and services consumed by the poor, middle class, and MSMEs.
- The proposed reforms are seen as a step toward fiscal sustainability, aligning with India's long-term growth goals and inclusive development agenda.
 - It is expected any short-term revenue dip to be offset by increased economic buoyancy and improved compliance.

Suggestions for Future Improvements

- Settle classification disputes to reduce litigation;
- Correct inverted duty structures, especially in

textiles and MSMEs;

- Establish GST Appellate Tribunals for faster resolution of disputes;
- Enhance digital infrastructure for smoother filing and reconciliation;
- Ensure anti-profiteering compliance so tax cuts benefit consumers.

About Goods and Services Tax (GST)

- It was launched on July 1, 2017, designed to unify the country's fragmented tax system, GST replaced multiple central and state levies with a single, destination-based tax regime.
- It continues to evolve through reforms aimed at simplification, compliance, and inclusive growth.

Background: One Nation, One Tax

- Before GST, India's indirect tax system was riddled with overlapping taxes such as Value Added Tax (VAT), Central Excise Duty, Service Tax, and Entry Tax etc.
- GST merged these into a unified structure comprising Central GST (CGST), State GST (SGST), & Integrated GST for inter-state transactions (IGST).
- Its objectives included:
 - Eliminating the cascading effect of taxes;
 - Creating a common national market;
 - Enhancing ease of doing business;
 - Increasing transparency and compliance.

Suggested reading: *8 Years of Goods and Services Tax (GST)*

Source: TH

IMPACT OF ETHANOL BLENDING

In News

- India achieved 20% ethanol blending in petrol (E20) in 2025, five years earlier than the 2030 target set under the National Policy on Biofuels (2018).
 - The government highlights significant benefits including reduced oil imports, enhanced farmer incomes, and lower carbon dioxide emissions. However, concerns remain over consumer dissatisfaction regarding mileage drop, agricultural sustainability issues etc.

About EBP

- Launched:** Pilot in 2003; expanded under the National Policy on Biofuels (2018).

- **Target:** Achieve 20% ethanol blending (E20) by 2030, achieved in 2025.
- **Ministry:** Ministry of Petroleum and Natural Gas
- **Objectives:**
 - ♦ Reduce India's heavy reliance (~85%) on crude oil imports.
 - ♦ Provide assured markets and improve farmer incomes.
 - ♦ Lower greenhouse gas emissions by substituting fossil fuels.
- **Feedstock:** Sugarcane (molasses and juice), rice, maize/corn, damaged food grains.

Key Concerns

- **Consumer Issues:**
 - ♦ **Drop in Mileage:** LocalCircles survey found 67% of petrol vehicle owners opposed E20, citing lower fuel efficiency and increased maintenance costs.
 - ♦ **Limited Price Benefit:** Despite a 65% fall in global crude oil prices since 2022-23, petrol prices have been cut by only about 2%, raising doubts about cost savings passed to consumers.
- **Agricultural Sustainability:**
 - ♦ **Water-Intensive Crop:** Sugarcane consumes 60–70 tonnes of water per tonne, contributing to groundwater depletion, particularly in Maharashtra and Uttar Pradesh.
 - ♦ **Land Degradation:** Nearly 30% of India's land area is degraded, partly due to unsustainable agricultural practices.
 - ♦ **Food vs Fuel Dilemma:** Diverting rice and corn for ethanol (34% of corn output used for ethanol in 2024–25, along with record rice allocation) has led to increased corn imports, affecting food security.

Way Forward

- **Diversify Feedstock:** Shift away from sugarcane to alternative sources such as maize, bamboo, and agricultural residues to reduce environmental impact.
- **Consumer Protection:** Implement tax incentives or compensation as recommended by NITI Aayog to address concerns over fuel efficiency drop.
- **Balanced Energy Strategy:** Use ethanol as a transitional or bridge fuel while aggressively scaling up EV adoption backed by renewable energy-supported charging infrastructure.

Source: TH

S&P UPGRADES INDIA'S SOVEREIGN RATING TO 'BBB'

In News

- S&P Global Ratings has upgraded India's long-term sovereign credit rating from 'BBB-' to 'BBB' with a Stable Outlook.

More about the News

- This is the first upgrade of India's sovereign rating by S&P in 18 years.
- S&P's decision reflects India's sustained high economic growth, successful fiscal consolidation, and improved policy predictability.
- India's projected GDP growth remains strong at 6.5% for FY26, and the country's external position is considered robust.

About Sovereign Credit Ratings (SCR)

- Sovereign Credit Ratings are independent assessments provided by credit rating agencies (like S&P, Moody's, Fitch) of a country's ability to meet its financial obligations.
- They indicate the creditworthiness of a government and the risk associated with lending to it.
- Ratings range from 'AAA' (highest safety) with 'BBB' and above considered 'investment grade', below that 'speculative' or 'junk'.
- They affect a country's ability to access international financial markets, its cost of borrowing, and overall investor sentiment.

Significance

- **Reduces Borrowing Costs:** An upgraded rating lowers government and corporate bond yields, making borrowing cheaper abroad.
- **Boosts Investments:** The 'BBB' rating enhances India's attractiveness to global funds, potentially bringing more FPI/FII inflows and strengthening market stability.
- **Reflects Fundamental Strength:** The upgrade is an endorsement of India's economic policies, fiscal discipline, and resilience against global shocks.
- **Encourages Institutional Confidence:** Immediately after the sovereign upgrade, ratings for key Indian banks and financial institutions improved, reflecting system-wide credibility.
- **Policy Implications:** Affirms India's path of prudent macroeconomic management, ongoing reforms, and stable inflation management by RBI.
- **Global Perception:** Counters earlier criticism about ratings not reflecting India's fundamentals and elevates India's stature in emerging markets.

- **Enables Growth Push:** Easier overseas funding will support India's developmental ambitions, infrastructure push, and plans for a \$5 trillion economy vision.

Source: PIB

NEW TYPE OF SUPERNOVA TRIGGERED BY BLACK HOLE-STAR INTERACTION

Context

- Astronomers have recently observed a previously unknown type of supernova, in which a massive star exploded under the gravitational influence of a black hole companion.

What is Supernova?

- **Hydrostatic Equilibrium in a Star:** A star survives because of a balance between;
 - ♦ **Gravity** which is pulling matter inward and
 - ♦ **Nuclear Fusion**, releasing energy outward by fusing hydrogen into helium, and later heavier elements.
- **A supernova** is a powerful and luminous stellar explosion, occurring when a star reaches the end

of its life. This happens when a massive **star's core collapses under gravity after it runs out of nuclear fuel.**

- ♦ This **collapse triggers a shockwave** that blasts the star's outer layers into space, creating a supernova.

Types of Supernovae

- **Core-Collapse Supernova (Type II, Ib, Ic):** These supernovae occur in massive stars that are at least eight times the mass of the Sun. When nuclear fusion stops, the core collapses and outer layers blast outward. It leaves behind;
 - ♦ **A neutron star** (if mass is at least eight times as massive as the sun), or
 - ♦ **A black hole** (if mass is at least 20 times that of the sun).
- **Thermonuclear Supernova (Type Ia):** It occurs in binary star systems where a white dwarf star accumulates matter from its companion.
 - ♦ When the white dwarf exceeds the **Chandrasekhar Limit** of approximately **1.4 solar masses** it leads to core compression and runaway nuclear fusion, resulting in a Type Ia supernova with **no core remnant**.

Black holes

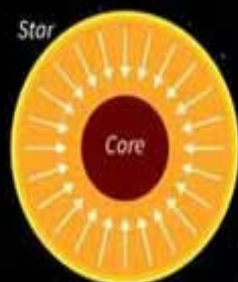
Black holes are created when giant stars, at least around 20 times the mass of the Sun, die.

HOW BLACK HOLES FORM

Nuclear reaction in core of a star produces energy and pressure. The pressure pushing out is countered by the gravitational forces created by the mass of the core to produce a stable star.

Dying star

As nuclear energy starts running out, gravity starts to overcome pressure, increasing core density and gravitational force



Supernova

Nuclear reaction stops and the star explodes as a supernova, expelling outer parts of the star into space.



Collapse

The core collapses under its own weight into a single point of infinite density



Black hole

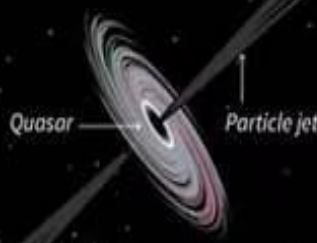
Gravitational forces at this stage are so strong light cannot escape from its pull

Central singularity



Quasar

Gas and space matter that are sucked into a black hole become rapidly heated and give off detectable radiation



Stargazing

Scientists also look for orbit of stars or gas discs affected by the gravitational pull of black holes

Sources: NASA; Hubble Site; Space Telescope Science Institute (STScI)

What is a Black Hole?

- A black hole is an **extremely dense object** whose gravity is so strong that nothing, not even light, can escape it.
- **Characteristics:** A black hole **does not have a surface**, like a planet or star. Instead, it is a region of space where matter has collapsed in on itself, resulting in a huge amount of mass being concentrated in an incredibly small area.
 - ♦ The center of a black hole is a **gravitational singularity**, a point where the general theory of relativity breaks down. A black hole's great **gravitational pull emerges** as if from the singularity.
 - ♦ **Event horizon** is the boundary around a black hole. It marks the point beyond which nothing can return.
- The concept of black holes was theorized by **Albert Einstein in 1915** through his **General Theory of Relativity**.
 - ♦ The term "black hole" was later coined by **John Archibald Wheeler** in the 1960s.

About the recent phenomenon

- A binary star system, about **700 million light-years away**, initially composed of two massive stars, was observed.
- One of the stars reached the end of its life, going supernova and collapsing into a black hole.
- The surviving companion star, at least **10 times** as massive as the Sun, gradually spiraled closer to the black hole.
 - ♦ The **black hole distorted the star** and pulled away its material. Eventually, the star exploded in a supernova-like event.
- **Significance of the event:**
- **Triggered by a Black Hole:** Unlike typical supernovae caused by internal instabilities, this explosion was likely induced by the tidal pull of a companion black hole.
- **Pre-Explosion Signatures:** Astronomers noticed bright emissions years before the explosion, likely due to the black hole stripping the star's hydrogen layer.

Source: DD News

NEWS IN SHORT

SRI AUROBINDO

In News

- The Prime Minister paid homage to Sri Aurobindo, on the occasion of his birth anniversary.

Early Life and Education

- He was born in Calcutta on August 15, **1872**, into a Brahmo Samaj-influenced family.
- His **Father Krishna Dhun Ghose** was an anglophile; sent Aurobindo and his brothers to England in **1879** to prepare for the **ICS**.
- He Educated in Manchester, London, and King's College, Cambridge.
- He Cleared the ICS exam but was disqualified for missing the riding test.

Political Awakening and Activism

- He returned to India in 1893; joined the Baroda Service for 13 years, writing poetry and learning Indian languages.
- His political journey began around 1902 and intensified after the 1905 Partition of Bengal, leading to his active role in the nationalist faction of the Indian National Congress.
- He became Principal of Bengal National College in 1906.
- He Joined the "extremist" faction of the INC; prosecuted for sedition in 1907 but acquitted.
- He was arrested in 1908 for the Alipur Conspiracy Case; spiritual transformation during imprisonment.
 - ♦ Post-release (1909), launched Karmayogin (English) and Dharma (Bengali) weeklies.
- He moved to Pondicherry in 1910; withdrew from active politics but remained ideologically committed.

Do you know?

- Sri Aurobindo championed passive resistance, distinct from Gandhi's Satyagraha.
- While Gandhi saw it as moral suffering rooted in soul-force, Aurobindo viewed passive resistance as an organized refusal to cooperate with colonial rule, justifiable by any means necessary for national survival — including violent ones if needed.
- He criticized the Congress moderates and emphasized self-reliance and self-preservation.

Philosophy

- In a 1908 Bombay speech, he called nationalism a "work of god" and nationalists "instruments of god".
- He advocated passive resistance as a strategy for national survival and liberty.
- He Criticized INC moderates for their conciliatory politics.

- In New Thought (1907), emphasized self-development through self-help, even via non-peaceful means.
- He defined passive resistance as refusal to aid colonial administration, not necessarily non-violent.
- He believed any action—violent or non-violent—was justified if the nation's survival was at stake.
- He launched an English weekly, Karmayogin, and a Bengali weekly, Dharma.

Legacy

- His legacy calls for a nuanced and critical engagement with his ideas on Swaraj, dharma, nationalism, and resistance, blending spiritual vision with political conviction.

Source :IE

ALASKA

In News

- The Presidents of the United States and Russia met at **Joint Base Elmendorf-Richardson in Anchorage, Alaska**, to discuss the ongoing Russia-Ukraine war.

About Alaska

- Alaska is the **largest and one of the most northern states in the United States**.
- Alaska used to be known as **"Seward's Folly,"** named after Secretary of State William H. Seward, who negotiated the purchase of Alaska from Russia in 1867 for 7.2 million dollars as per **Alaska Treaty 1867**.
- It is separated from the United States by Canada and is bordered by the Arctic Ocean (north), Pacific Ocean (south), Bering Strait (west), and Canada (east).
- The **Aleutian Range**, a volcanic mountain range, runs along the peninsula, and the region contains numerous active and dormant volcanoes.
- It is part of the **Pacific Ring of Fire** and is seismically active, with frequent earthquakes and volcanoes.
- Alaska's population density is the lowest among U.S. states.

Source: TH

OPERATION SADBHAVANA

In News

- In Arunachal Pradesh, under Indian Army's Operation Sadbhavana initiative, an 'Arogyam Health and Wellness Centre' was inaugurated at DahJhong in Tawang district.

About Operation Sadbhavana

- **Operation Sadbhavana (Goodwill)** is a welfare initiative launched by the Indian Army in 1998 to win the **"hearts and minds"** of people affected by terrorism, insurgency, and slow development primarily in Jammu & Kashmir, Ladakh, and select parts of Northeast India.
- The programme aims to address aspirations of local people through holistic **societal development**: education (Army Goodwill Schools), health camps, women's empowerment, employment generation, and infrastructure development.

Source: AIR

PM VIKSIT BHARAT ROZGAR YOJANA

In News

- Recently, Prime Minister Shri Narendra Modi announced the Pradhan Mantri Viksit Bharat Rozgar Yojana on Independence Day with an outlay of ₹1 lakh crore.

PM Viksit Bharat Rozgar Yojana

- It will provide incentive of up to **₹15,000 in two instalments to newly employed youth** and upto 3000 per month per new employee to employers for creating new job opportunities.
 - ♦ Payments will be made via DBT and PAN-linked accounts

Features

- **The scheme has two parts:**
 - ♦ **Part A (Support to First-Time Employees):** Targets 1.92 crore new employees registered with EPFO, offering up to ₹15,000 in two installments (after 6 and 12 months), with a portion kept in a savings account.
 - Employees with salaries up to Rs 1 lakh will be eligible for the incentives.
 - ♦ **Part B (Incentives for Employers):** It will encourage generation of additional employment in all sectors, with a special focus on the manufacturing sector.
 - The employers will get incentives in respect of new employees with salaries up to Rs 1 lakh.
 - The Government will incentivize employers, up to Rs 3000 per month, for two years, for each additional employment, sustained for at least six months.
 - For the manufacturing sector, incentives will be extended to the 3rd and 4th years as well.

- It is expected to incentivize employers for the creation of additional employment of nearly 2.60 crore persons.
- **All payments** to the First Time Employees under Part A of the Scheme will be made through DBT (Direct Benefit Transfer) mode using Aadhar Bridge Payment System (ABPS).
- ♦ Payments to the Employers under Part B will be made directly into their PAN-linked Accounts.

Source :PIB

BOMBAX CEIBA AND LAGERSTROEMIA SPECIOSA

Context

- A new study has found that two native plant species, **Bombax ceiba (Simalu)** and **Lagerstroemia speciosa (Ajar)**, have emerged as “grassland invaders” in Assam’s Dibru-Saikhowa National Park (DSNP).

The Native Grassland Invaders

- **Bombax ceiba:** A deciduous tree with **large, red, cup-shaped flowers** that are rich in nectar.
 - ♦ It is **native to India and tropical Asia**. The tree is known for its large size and the silky floss produced from its seeds.
 - ♦ Traditionally native to Assam’s forests but now colonising grasslands.
- **Lagerstroemia speciosa:** A tree known for its beautiful, showy flowers that can be **pink, purple, or white**. It is also known as the “**Queen Crape Myrtle**”.



Other Invasive Species in Dibru-Saikhowa National Park

- **Shrubs:** Chromolaena odorata, Ageratum conyzoides
- **Herb:** Parthenium hysterophorus
- **Climber:** Mikania micrantha

Dibru-Saikhowa National Park

- **Location:** Dibrugarh and Tinsukia districts, Assam
- **Geography:** The park is bounded by the **Brahmaputra and Lohit Rivers** in the north and **Dibru River** in the south.
- **Flora:** The forest consists of **semi-evergreen forests, deciduous, littoral and swamp forests** and patches of **wet evergreen forests**.
- **Fauna:** Bengal florican, Hog deer, Hoolock gibbon, Swamp grass babbler etc.
 - ♦ Only habitat of **feral horses** in India, descendants of WWII military horses.
- **Status:** UNESCO Biosphere Reserve (1997), National Park (1999).

Source: TH

INDIA'S FIRST SUSTAINABLE AVIATION FUEL PLANT

In News

- Indian Oil Corporation (IOC) is going to begin commercial-scale production of Sustainable Aviation Fuel (SAF) at its Panipat refinery by December 2025, after recently receiving ISCC CORSIA certification to produce SAF using used cooking oil.

Sustainable Aviation Fuel (SAF)

- It is a biofuel made from **sustainable feedstocks** and shares a similar chemical composition with conventional aviation turbine fuel (ATF), which is derived from crude oil.
 - ♦ As a result, current aircraft engines can operate on a SAF-ATF blend without modification.

Benefits

- It offers a **cleaner alternative to traditional jet fuel** and plays a vital role in the global aviation sector’s push toward decarbonisation.
- Indian Oil Corporation’s production of SAF may attract interest from European airlines, especially due to existing blending mandates in the region.
- Industry and energy experts estimate that SAF alone will contribute over 60% to the aviation sector’s global decarbonisation targets.

Targets for Future

- India's National Biofuel Coordination Committee (NBCC) has set initial SAF blending targets for international flights under the CORSIA framework: 1% in 2027 and 2% in 2028.
- SAF mandates for domestic flights are expected later, after international blending begins.
- The year 2027 marks a key global milestone, as the mandatory phase of CORSIA takes effect.

Do you know?

- The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)** is the first global market-based initiative targeting a specific sector. It supports other efforts to reduce aviation emissions—such as technological advancements, operational efficiencies, and sustainable aviation fuel use—to help achieve the International Civil Aviation Organization's (ICAO) goal of carbon-neutral growth.
 - CORSIA applies to international flights and mandates that airlines offset any increase in carbon dioxide emissions above 2020 levels.
- ISCC CORSIA is a certification system** for compliance with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) criteria for SAF.
 - It is a prerequisite for commercial SAF production.**
 - The certification also sets a benchmark for other domestic refiners and industry players to scale up SAF production.

Source :IE

MISSION SUDARSHAN CHAKRA

Context

- PM Modi announced the launch of Mission Sudarshan Chakra, an ambitious **indigenous air defence system** to be fully developed by 2035.

About

- The mission, named after Lord Krishna's mythological weapon, is a **comprehensive air**

defence initiative to build a robust **indigenous shield** against aerial threats.

- It seeks to ensure that all public places in India are protected under a nationwide security shield by **2035**.

Key Air-Defence Systems of other countries

Country/Region	Key Systems
Russia	S-400 Triumph, S-300VM, S-350 Vityaz, S-500 Prometheus
USA	THAAD, Patriot (PAC-3 MSE), Golden Dome (in development)
Israel	Iron Dome, David's Sling, Iron Beam
China	HQ-9, HQ-22, HQ-16
European Sky Shield Initiative (ESSI)	Skyranger, IRIS-T SLM

Source: TH

SLINEX-25

Context

- The 12th edition of the Sri Lanka-India Naval Exercise, **SLINEX-25**, saw the arrival of Indian Naval ships **INS Rana** (Guided Missile Destroyer) and **INS Jyoti** (Fleet Tanker) at Colombo.

About the Exercise

- SLINEX is a **bilateral naval exercise** conceptualised in **2005** to strengthen maritime cooperation between India and Sri Lanka.
 - The previous edition of SLINEX was conducted at **Visakhapatnam, India** from 17 to 20 Dec 2024.
- Structure of SLINEX-25:**
 - Harbour Phase:** Conducted in Colombo
 - Sea Phase:** Joint operations at sea
- Strategic Significance:** SLINEX aligns with India's policy of **MAHASAGAR** — *Mutual and Holistic Advancement for Security and Growth Across Regions*.

Source: PIB