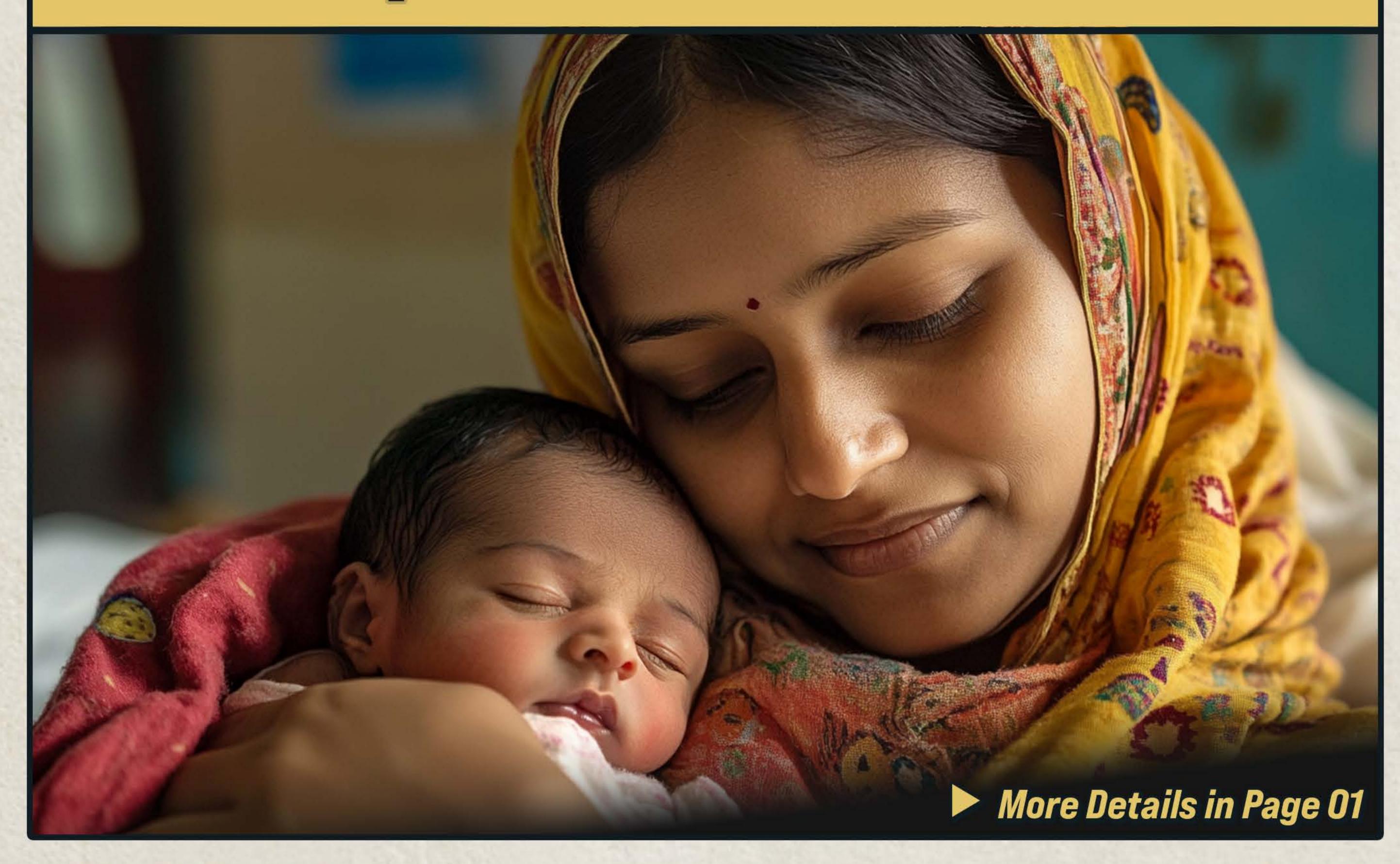
WHELT STATES

May 11-17, 2025

SRS Report 2021





HIGHLIGHTS

- World Bank Land
 Conference 2025
- Solar Flare Event
 Potential Impact
 on Earth

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SRS Report 2021

Why in News?

- Sample Registration System (SRS) Report 2021 released by the Office of the Registrar General of India.
- Provides critical data on fertility, mortality, life expectancy, and other population indicators.

About SRS

- An annual demographic survey conducted across all States and Union Territories.
- Monitors vital statistics such as birth rate, death rate, and fertility indicators.

Key Findings

Maternal and Child Mortality

Maternal Mortality Ratio (MMR):

Dropped from 130 (2014-16) to 93 (2019-21).

SDG 2030 Target: ≤70.

Neonatal Mortality Rate (NMR):

Reduced from 26 (2014) to 19 (2021).

SDG 2030 Target: ≤12.

Infant Mortality Rate (IMR): Declined from 39 (2014) to 27 (2021).

Under-5 Mortality Rate (U5MR):

Fell from 45 (2014) to 31 (2021).

SDG 2030 Target: ≤25.

Fertility Trends

Total Fertility Rate (TFR):

Declined from 2.3 (2014) to 2.0 (2021).

Bihar reported highest TFR at 3.0.

Sex Ratio at Birth

Improved from 899 (2014) to 913 (2021).



Key Findings

Life Expectancy

Overall: 69.8 years (2017-21), down by 0.2 years from 2016-20.

Male: 68.2 years Female: 71.6 years

Demographic Dividend

Working-age population (15-59 years): Now constitutes 66.2% of total population.

Definitions of Key Indicators

MMR: Maternal deaths per 1,00,000 live births.

NMR: Neonatal deaths (birth to 29 days) per 1,000 live births.

IMR: Infant deaths (birth to 1 year) per 1,000 live births.

U5MR: Deaths under age 5 per 1,000 live births.

TFR: Average number of children born per woman during reproductive years.

- Intensify maternal and child health interventions to meet SDG targets.
- Tackle high fertility states like Bihar through awareness and healthcare access.
- Invest in adolescent and women's health to sustain TFR decline.
- Utilize demographic dividend through skill development and employment generation.
- Enhance life expectancy via preventive healthcare and improved nutrition.

Psychological Warfare & Disinformation After Operation Sindoor

Why in News?

- Following Operation Sindoor, India's Press Information Bureau (PIB) has intensified efforts to counter misinformation and disinformation on social media.
- Rise in psychological warfare (PSYWAR) tactics observed in digital space targeting national morale and public trust.

Key Definitions

Disinformation vs. Misinformation

Disinformation: Deliberate creation and spread of false or misleading content.

Misinformation: Unintentional spread of inaccurate or false content.

Psychological Warfare (PSYWAR)

Tactical use of propaganda, fear, threats, and manipulation to weaken enemy morale and unity without physical combat.

Objectives of PSYWAR

- Undermine public trust and confidence.
- Reduce enemy morale and willingness to fight.
- Encourage surrender or compliance.
- Influence national and international opinion.

Types of PSYWAR Propaganda

- White Propaganda: Truthful, with minimal bias.
- Grey Propaganda: Mostly truthful, hard to disprove.
- Black Propaganda: Deliberately false, attributed to fake sources.

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Tactics Used in PSYWAR

- Propaganda Dissemination: Flyers, videos, or posts aimed to demoralize.
- Threats & Intimidation: Psychological pressure to induce panic or hesitation.
- Exploiting Social Divisions: Amplifying ethnic, political, or cultural tensions.
- Cyber PSYWAR: Digital manipulation through bots, fake news, deepfakes, and misinformation campaigns.

Impacts of Psychological Warfare

- Public Distrust: Discredits official communication channels.
- National Polarization: Fuels societal divides and weakens unity.
- Military Success: Helps achieve objectives with minimal physical confrontation.
- Panic and Chaos: Creates confusion, especially during crises.

- Strengthen official communication channels like PIB Fact Check.
- Raise public awareness about media literacy and source verification.
- Deploy cyber-PSYWAR countermeasures using Al and digital forensics.
- Promote inter-agency coordination to track and contain hostile information campaigns.

Brahlos Aerospace Testing Facility Inaugurated in Lucknow

Why in News?

- Defence Minister inaugurated the BrahMos Aerospace Testing Facility in Lucknow, Uttar Pradesh.
- The facility is a significant addition to the Uttar Pradesh Defence Industrial Corridor (UP) DIC).

About BrahMos Missile

Development and Naming

Jointly developed by DRDO (India) and NPOM (Russia).

Named after the Brahmaputra (India) and Moskva (Russia) rivers.

Type and Features

A long-range supersonic cruise missile.

Operates on the "Fire and Forget" principle with variable flight paths.

Two-stage propulsion:

Stage 1: Solid propellant booster.

Stage 2: Liquid ramjet engine for cruise phase.

Speed: Up to Mach 3 (3 times the speed of sound).

Range: Approximately 290 km.

Stealth technology makes it difficult to detect via radar.

Offers pinpoint accuracy and quicker engagement times.

Versions

BrahMos NG (Next Gen): A smaller, lighter, and more lethal version.

Strategic Advantages

- Universal Launch Capability: Can be launched from land, sea, and air.
- Export Potential: India delivered BrahMos to the Philippines in 2024.
- Ensures lower dispersion of targets and faster response times.



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Defence Industrial Corridors (DICs)

Objective

Promote indigenous production of defence and aerospace equipment.

Strengthen India's defence manufacturing ecosystem.

Uttar Pradesh DIC

Nodal Points: Agra, Aligarh, Chitrakoot, Jhansi, Kanpur, Lucknow.

The BrahMos facility in Lucknow is a key part of this corridor.

Tamil Nadu DIC

Nodal Points: Chennai, Coimbatore, Hosur, Salem, Tiruchirappalli.

- Strengthen public-private collaboration in defence manufacturing.
- Enhance export competitiveness of Indian defence technologies.
- Leverage DICs to attract foreign investment and R&D.
- Expand testing, production, and training infrastructure under 'Atmanirbhar Bharat' in defence.

World Bank Land Conference 2025

Why in News?

- India assumed the role of a Country Champion at the World Bank Land Conference 2025.
- India showcased key land governance initiatives like SVAMITVA and Gram Manchitra, gaining global recognition.

Flagship Initiatives Highlighted

SVAMITVA Scheme

Aim: To establish **clear ownership of rural property** by mapping land parcels using **drone technology**.

Achievements:

Surveyed over 68,000 sq. km.

Land worth ₹1.16 trillion monetized.

Significance: Recognized as a scalable model for inclusive economic transformation.

Gram Manchitra Platform

A geospatial planning platform for Gram Panchayats.

Empowers local bodies to create data-driven, climate-resilient development plans.

Promotes **convergence of government schemes** and improved infrastructure planning. Gained praise for its applicability to the **Global South**.

Broader Significance of Efficient Land Management

Economic Growth and Jobs

Clear property rights enable entrepreneurship, wealth reinvestment, and diversified livelihoods.

Supports private capital formation by allowing landowners to use property as collateral.

Infrastructure and Public Finance

Generates stable government revenue for essential public services.

Comparison:

Land/property taxes = **0.6% of GDP** in low-income countries vs **2.2%** in industrialized countries.

Broader Significance of Efficient Land Management

Urban Management

Helps in **urban growth planning, public space protection**, and **disaster risk management**. Supports **identification of development zones**.

Food Security and Gender Empowerment

Improved access to land for women can raise agricultural output by up to 4%.

Land rights strengthen food systems and climate adaptation.

- Replicate and scale successful land governance models across India and the Global South.
- Promote technology-driven, community-led planning tools like Gram Manchitra.
- Strengthen property rights, particularly for marginalized groups, including women.
- Increase land tax contribution to GDP to support infrastructure investment.
- Foster international collaboration to share learnings on rural land transformation.

E-Methanol: A Green Fuel Breakthrough

Why in News?

- Denmark inaugurated the world's first commercial-scale e-methanol plant, marking a major milestone in clean fuel development.
- E-methanol offers emission reduction solutions in hard-to-abate sectors like shipping and chemicals.

What is E-Methanol?

- Definition: A low-carbon fuel made by combining green hydrogen (from water electrolysis) and captured CO₂.
- **Key Steps in Production:**

Green Hydrogen Generation: Electrolysis powered by renewable energy.

CO2 Capture: Captured from industrial flue gases or directly from the air.

Methanol Synthesis: CO2 and hydrogen are reacted in a catalytic reactor under pressure.

Key Benefits

- Infrastructure Compatibility: Can be used in existing systems without major upgrades.
- Storage & Stability: Can be stored at room temperature and ambient pressure.
- Versatility: Can be converted to gasoline, kerosene; used in shipping, road and air transport.

Challenges

High Cost: More expensive than fossil-based methanol due to high renewable energy and production inefficiencies.

India's 'Methanol Economy' Programme (NITI Aayog)

Objectives

Reduce oil import bill

Lower GHG emissions

Utilize domestic coal reserves and waste to produce methanol



India's 'Methanol Economy' Programme (NITI Aayog)

Production Sources

High-ash coal

Agricultural residue

CO₂ from thermal power plants

Natural gas

Benefits

Job Creation: Nearly 5 million jobs expected in production, application, and distribution.

Cost Savings: Annual savings of ₹6000 crore by blending 20% DME (Di-methyl Ether, a methanol derivative) in LPG.

- Scaling Production: Improve efficiency and reduce costs in e-methanol production.
- International Collaboration: Leverage learnings from Denmark's plant for Indian adaptation.
- Policy Support: Strengthen incentives under Methanol Economy to accelerate domestic manufacturing.
- Infrastructure Development: Upgrade refineries and distribution networks for methanol-based fuels.



Justice BR Gavai to Become 52nd CJI

Why in News?

- Justice BR Gavai will take oath as the 52nd Chief Justice of India (CJI).
- The Chief Justice is appointed under the provisions of Article 124 of the Constitution.
- First CJI: Harilal J. Kania (1947)

Constitutional Provisions

- Article 124(1): Establishes the Supreme Court, consisting of the CJI and up to 33 other judges.
- Article 124(2): CJI is appointed by the President after consultation with outgoing CJI.
- Tenure: Serves until the age of 65 years.
- Oath: Administered by the President of India.
- RTI Coverage: The Office of the CJI falls under the Right to Information Act, 2005.

Appointment Process

- Follows the convention of seniority and consultation with the outgoing CJI.
- As per the Memorandum of Procedure:

Union Law Minister seeks the outgoing CJI's recommendation.

Recommendation forwarded to the Prime Minister.

PM advises the President for appointment.

Key Roles and Powers of the CJI

Administrative: Appoints Officers and Servants of the SC under Article 146.

Statutory

Chairs the Search-cum-Selection Committee for statutory bodies like:

National Company Law Appellate Tribunal (NCLAT)

National Consumer Disputes Redressal Commission (NCDRC)

Judicial

Master of Roster: Allocates cases to benches as per the 2017 Handbook of Practice and Procedure.



Key Roles and Powers of the CJI

Other Powers

Administers oath to the President.

Can appoint ad hoc judges.

Requests retired judges to rejoin benches.

Decides on the seat/location of the SC.

- Upholding transparency and independence of the judiciary.
- Ensuring speedy justice and balanced administrative functioning of the SC.

Ethanol from Foodgrain

Why in News?

- Government has allocated an additional 2.8 million tonnes of rice from FCI buffer stock for ethanol production under the Ethanol Blended Petrol (EBP) Programme.
- The move aims to reduce excess FCI stockpile and promote energy security.

Significance of the Move

Energy Security

Ethanol is a **renewable and sustainable fuel,** reducing **dependence on imported fossil fuels**.

Buffer Stock Management

FCI holds 61 million tonnes of rice against a required buffer of 13.58 million tonnes.

The **economic cost** of rice (including MSP, storage, etc.) projected at **Rs. 4173/quintal** for 2025–26.

Economic Impact

Supports Make in India, doubles farmers' income, and generates employment.

Concerns and Challenges

Food Security vs. Energy Security

Using staple food grains like rice, maize, and sugarcane for ethanol risks diverting essential food/feed supply.

Livestock feed systems and poor consumers may be adversely impacted.

Inflation

Increased ethanol-linked demand can raise food prices and reduce availability for consumers.

About Ethanol

A biofuel produced via fermentation of sugars or petrochemical processes.

Uses: Fuel blending, industrial solvent, antiseptic.





Ethanol Blended Petrol (EBP) Programme

- Objective: Ethanol blending in petrol to cut import bills and save foreign exchange.
- Target: Achieve 20% ethanol blending by 2025-26.
- Progress: Blending increased from 1.53% in 2014 to 15% in 2024.

- Need to balance food security and energy security while scaling ethanol production.
- Promote non-food-based feedstocks like agricultural waste or algae.
- Establish regulatory safeguards to prevent over-diversion of food grains.
- Ensure transparent buffer stock policies to manage inflation risks.

PLFS Revamped: Monthly Labour Data from 2025

Why in News?

- The National Statistics Office (NSO) under the Ministry of Statistics & Programme Implementation (MOSPI) has announced key changes to the Periodic Labour Force Survey (PLFS) starting January 2025.
- Aimed at enhancing labour market responsiveness and aligning with global standards.

Key Changes in PLFS from 2025

Monthly Labour Indicators (All-India Level)

First-ever release of monthly data on:

Labour Force Participation Rate (LFPR)

Worker Population Ratio (WPR)

Unemployment Rate (UR)

Based on Current Weekly Status (CWS).

Quarterly Estimates: Urban + Rural

Expansion of quarterly employment-unemployment estimates to include **rural areas** (earlier only urban).

Annual Reports on Calendar Year Basis

Change in reporting cycle to January-December from the earlier July-June.

Better alignment with international statistical systems.

Enhanced Sample Size

Household sample size increased by 2.65 times.

Aims to improve precision and reliability of data.

Improved Geographical Representation

Districts made the primary geographical unit.

Rural stratification now based on:

Village distance from district HQ.

Proximity to towns/cities with over 5 lakh population.





Key Labour Market Terms

- Labour Force Participation Rate (LFPR): % of population either employed or actively seeking work.
- Worker Population Ratio (WPR): % of employed persons in the total population.
- Unemployment Rate (UR): % of unemployed among the labour force.
- Current Weekly Status (CWS): Status based on activity in the last 7 days before the survey date.

- The reform ensures real-time, high-frequency labour data to guide policymaking.
- Aids in targeted employment schemes and better economic planning across regions.

Presidential Reference on Bill Assent Timelines

Why in News?

- President Droupadi Murmu has invoked Article 143 to seek the Supreme Court's opinion on whether the judiciary can impose timelines on the President and Governors for assenting to state legislation.
- This follows a recent SC ruling in the State of Tamil Nadu vs Governor of Tamil Nadu case where time limits were suggested under Article 142.

Background

- Article 143 empowers the President to refer questions of legal/public importance to the Supreme Court for its advisory opinion.
- The reference comes amid tensions over perceived judicial overreach and executive discretion in legislative processes.

Key Supreme Court Observations (Earlier Case)

Court set time limits for:

Governors under Article 200 – to act on bills passed by the state legislature.

President under Article 201 – to decide on bills reserved by the Governor.

What the Presidential Reference Seeks

- Clarification on the legality of a **three-month timeline** imposed for Presidential assent under Article 201.
- Whether Governors are constitutionally bound to act as per the aid and advice of the Council of Ministers under Article 200.
- Reaffirmation of the roles and limitations under the Constitution for the Executive and Judiciary.

Constitutional Provisions Invoked

- Article 143: Presidential reference to SC on legal/public issues.
- Article 200: Powers of Governor on bills passed by State Legislature.
- Article 201: Powers of President on bills reserved by Governor.
- Article 361: Immunity of President and Governors from judicial scrutiny in performance of their duties.
- Article 142: SC's power to pass orders for "complete justice".
- Article 145(3): Constitution Bench (minimum 5 judges) for interpreting constitutional questions.
- Article 131: SC's original jurisdiction in disputes between Centre and States.

Way Forward

Await the Supreme Court's advisory opinion under Article 143.

Potential review of roles of constitutional authorities in law-making process.

May lead to establishment of **clear constitutional norms** on timelines and accountability of President and Governors in the legislative process.

Samudrayaan Mission and India's Deep Ocean Push

Why in News?

- The Samudrayaan Mission, India's first manned deep-ocean exploration initiative, will be launched by end of 2026, as announced by the National Institute of Ocean Technology (NIOT).
- The mission will deploy 'Matsya-6000', a human-rated submersible, to explore ocean depths up to 6,000 metres.

About Samudrayaan Mission

- Component of: Deep Ocean Mission (DOM).
- Objective:

Enable human deep-sea exploration.

Facilitate assessment of marine biodiversity and oceanic resources.

Promote ocean observations and potential deep-sea tourism.

Global Context: Only USA, Russia, China, France, and Japan have achieved similar crewed missions.

Matsya-6000: India's Deep-Sea Submersible

- Type: 4th Generation, self-propelled manned submersible.
- Developer: National Institute of Ocean Technology (NIOT), Chennai.
- Testing: Successfully completed Wet Testing.
- Endurance:

12 hours of operation.

96 hours of survival in emergencies.



About Deep Ocean Mission (DOM)

- Nodal Ministry: Ministry of Earth Sciences.
- Launch Year: 2021.
- Duration: 5 years.
- Aim: Develop technologies for sustainable deep-sea resource utilization and support the Blue Economy.
- Blue Economy: Sustainable use of ocean resources for economic growth and improved livelihoods; contributes ~4% of India's GDP.

Key Components of DOM

- Development of technologies for deep-sea mining and manned submersibles.
- Climate advisory services linked to ocean changes.
- Exploration and conservation of deep-sea biodiversity.
- Deep ocean survey and exploration missions.
- Harnessing energy and freshwater from ocean.
- Establishment of Advanced Marine Station for Ocean Biology.

Significance for India

- Strengthens India's scientific capabilities in oceanography.
- Expands resource base through deep-sea mining and bioprospecting.
- Supports strategic interests and enhances global presence in maritime domains.
- Encourages growth in marine innovation, research, and potential tourism sector.

- Timely deployment of Matsya-6000 and other tech under DOM.
- Build global collaborations for capacity building and knowledge sharing.
- Integrate ocean initiatives with India's Blue Economy roadmap.
- Ensure environmental safeguards during exploration and mining activities.



Solar Flare Event and Its Potential Impact on Earth

Why in News?

- NASA satellites have detected a massive solar flare, ejecting superheated plasma in a dramatic "bird-wing" shape.
- This solar eruption may potentially impact Earth, triggering geomagnetic effects.

What are Solar Flares?

- Definition: Sudden, intense bursts of radiation from the Sun, caused by the release of magnetic energy.
- Accompanied by: Coronal Mass Ejections (CMEs) large expulsions of plasma and magnetic fields from the solar corona.

Classification of Solar Flares

Based on intensity of X-ray emissions:

A-Class: Weakest (near background levels)

B, C, M-Class: Moderate strength
X-Class: Strongest solar flares

Solar Activity Cycle

- Solar flares are more frequent during Solar Maximum, the peak of the Sun's 11-year magnetic cycle.
- During this period, the Sun's magnetic poles reverse polarity, increasing solar activity.

Spectrum of Emissions

Solar flares emit radiation across the entire electromagnetic spectrum:

X-rays, gamma rays, UV light, visible light, radio waves, etc.





Implications of Solar Flare Events

Geomagnetic Disturbances

Geomagnetic storms can disrupt Earth's magnetic field.

May lead to:

Radio communication blackouts

Power grid failures

Bright auroras at lower latitudes

Satellite and Communication Impact

High-energy particles can:

Damage satellite electronics

Affect GPS accuracy

Disrupt telecommunication networks

Human Safety

Earth's magnetic field and atmosphere protect humans on the ground.

However, astronauts and space missions face potential radiation hazards.

Way Forward

- Enhanced monitoring of solar activity via satellites and observatories.
- Early-warning systems for satellite operators and power grid companies.
- Strengthen resilience of space infrastructure to solar radiation.
- Collaborate globally for space weather preparedness.

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India's Five-Point Global Action Plan to Safeguard Mountain Ecosystems

Why in News?

- India outlined a Five-Point Call for Global Action to protect mountain ecosystems.
- Announced during the first Sagarmatha Sambaad in Kathmandu, Nepal.
- Theme of the Sambaad: "Climate Change, Mountains, and the Future of Humanity".
- The dialogue is named after Sagarmatha (Mount Everest), the world's tallest mountain.

Significance of Mountain Ecosystems

- Himalayas support livelihoods of 1.3 billion people.
- Provide forest cover, glacial water, perennial rivers, and biodiversity conservation.
- Wey to climate regulation and sustainable development across South Asia.

Five-Point Global Call to Action

Enhanced Scientific Cooperation

Promote research collaboration on Cryospheric changes, Hydrological cycles, Biodiversity and ecosystem dynamics

Building Climate Resilience

Invest in:

Early warning systems for Glacial Lake Outburst Floods (GLOFs)

Climate-resilient infrastructure in fragile mountain zones

Empowering Mountain Communities

Integrate welfare, aspirations, and participation of locals in policies

Promote green livelihoods and sustainable tourism

Providing Green Finance

Ensure climate finance flows per UNFCCC and Paris Agreement

Support mountain nations in adaptation and mitigation strategies

Recognizing Mountain Perspectives Globally

Include mountain-specific challenges and contributions in:

Global climate negotiations

Sustainable development agendas







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India's Existing Mountain Protection Initiatives

National Mission on Sustaining Himalayan Ecosystem (NMSHE)

Part of India's National Action Plan on Climate Change (NAPCC)

Focuses on understanding climate impacts and developing adaptive strategies for the Himalayan region

SECURE Himalaya Project

Under the Global Wildlife Program

Aims at wildlife conservation, crime prevention, and sustainable development

ICIMOD (International Centre for Integrated Mountain Development)

Regional intergovernmental centre

Works for sustainable development across the Hindu Kush Himalayan region

- Mainstream mountain issues in global climate discourse
- Strengthen transboundary cooperation for Himalayan protection
- Mobilize scientific, financial, and institutional support
- Foster community-led, ecosystem-based climate solutions.





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