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Time: 45 Min

Date: 06-06-2026

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INTERNATIONALISATION OF HIGHER EDUCATION IN INDIA

Context

- The Ministry of Education has granted a **Letter of Approval (LoA)** to **University of Liverpool** to establish its branch campus in **Bengaluru** under the UGC (Setting Up and Operation of Campuses of Foreign Higher Educational Institutions in India) Regulations, 2023.

What is Internationalisation of Higher Education?

- It is the process of **integrating global, international, and intercultural dimensions** into teaching, research, governance, and academic collaboration.
- The process includes **student and faculty mobility, international research partnerships, foreign university campuses,** joint degree programmes, and cross-border educational services.

Need for Internationalisation of Higher Education in India

- **Enhancing Academic Excellence:** Internationalisation promotes the adoption of globally benchmarked curricula, teaching methodologies, and quality assurance standards, thereby improving educational outcomes.
- **Building a Future-Ready Workforce:** Exposure to international perspectives equips students with critical thinking, intercultural competence, and skills required in a globalised economy.
- **Retaining Educational Talent and Resources:** Availability of **world-class educational opportunities** within the country can reduce student migration and associated foreign exchange outflows.
  - India is one of the **world's largest sources of international students**, with more than **1.3 million** Indian students studying abroad
- **Educational Diplomacy:** Academic cooperation deepens bilateral and multilateral relations while enhancing India's **soft power** and global influence.
- **Global Education Hub Vision:** Internationalisation is essential for transforming India into a major centre for **higher learning, research, and knowledge creation.**

Challenges Associated with Internationalisation

- **High costs:** The programmes offered by foreign institutions may remain unaffordable for economically weaker sections.
- **Regional disparities:** Most foreign institutions may prefer metropolitan cities, leaving smaller cities and rural regions behind.
- **Competitive pressures:** Public universities will struggle to compete for talented students, faculty, and research funding.
- **Commercialisation of education:** Excessive focus on profitability may undermine the broader social objectives of higher education.

Initiatives Taken by India

- **The National Education Policy 2020** has placed internationalisation at the centre of higher education reforms. The policy encourages the entry of top global universities into India and promotes international collaborations.
- **The UGC Regulations, 2023** have created a regulatory framework for foreign universities. The regulations **allow highly ranked foreign universities to establish campuses in India** while maintaining global standards.
- **The Study in India (SII) Programme** is a flagship initiative by the Indian Ministry of Education designed to attract international students to India.
- **The Scheme for Promotion of Academic and Research Collaboration (SPARC)** aims to bolster India's research ecosystem by funding joint projects between top Indian institutions and leading global universities.
- **The Global Initiative of Academic Networks (GIAN)** enhances academic cooperation by bringing distinguished international faculty and researchers to teach short-term or semester-long courses and collaborate with Indian higher education institutions.
- **Operational Foreign University Campuses in India:**
  - **Deakin University** in GIFT City, Gujarat (operational since **2024**).
  - **University of Wollongong** in GIFT City, Gujarat (operational since **2024**).
  - **University of Southampton** in Gurugram, Haryana (operational since **2025**).

Global Best Practices

- **Singapore** has positioned itself as a leading global education hub through its **"Global Schoolhouse"** strategy and substantial investments in higher education and research.
- **The United Arab Emirates** hosts more than **40** international branch campuses, making it one of the world's largest hubs for transnational education.

- **Education zones** such as **Dubai International Academic City** accommodate universities from the United Kingdom, Australia, India, and other countries.

- **China** has established several successful joint universities, including **University of Nottingham Ningbo China** and **Xi'an Jiaotong-Liverpool University.**

Way Ahead

- **Strengthen Domestic Institutions:** Internationalisation should complement, not substitute, the development of Indian universities.
- **Prioritise Quality over Quantity:** India should attract high-quality foreign institutions that contribute to academic excellence, research, and innovation.
- **Ensure Inclusive Access:** Scholarships and financial support should be expanded to make global-quality education accessible to all sections of society.

Source: PIB

MPC RETAINS REPO RATE, LOWERS GROWTH FORECAST

Context

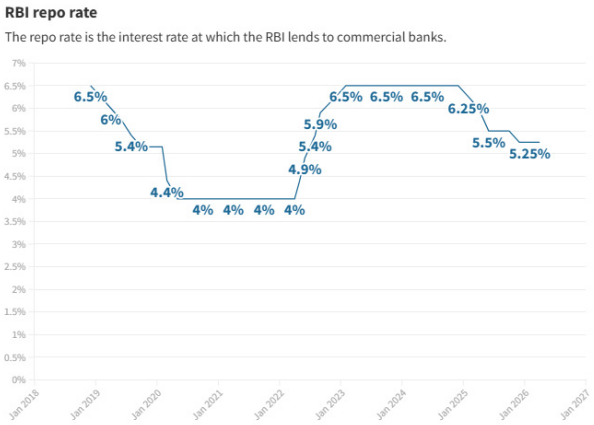
- **The Monetary Policy Committee (MPC)** voted unanimously to keep the policy repo rate under the liquidity adjustment facility (LAF) unchanged **at 5.25%.**

About

- The **standing deposit facility (SDF) rate** remains at 5% and the **marginal standing facility (MSF) rate and the Bank Rate at 5.50%.**
- The **real GDP growth for 2026-27 is projected at 6.6%** down from earlier projection of 6.9% with Q1 at 6.6%; Q2 at 6.3%; Q3 at 6.5%; and Q4 at 6.8%.
- **CPI inflation for 2026-27** is projected to be at 5.1% which is 50 basis points more than the earlier projection with Q1 at 4.2%; Q2 at 5.1%; Q3 at 5.9%; and Q4 at 5.4%.

What is the Repo Rate?

- The repo rate is the **rate at which the RBI lends short-term money** to commercial banks. **It is the key policy tool** used by the RBI to control liquidity, inflation, and economic growth.
- **A lower repo rate** means banks can borrow from the RBI at cheaper rates. This encourages banks to lower lending rates, leading to:
  - Easier access to credit for consumers and businesses
  - Boost in investment, consumption, and economic activity
  - Increased liquidity and money supply
  - This can stimulate growth, especially during economic slowdowns.



What is the Monetary Policy Committee (MPC)?

- The MPC is a **statutory body** established under the **RBI Act, 1934** (amended in 2016).
- It is responsible for **fixing the benchmark interest rate** (repo rate) to maintain price stability while keeping growth in mind.
- **It consists of 6 members:**
  - 3 from the RBI (including the Governor as Chairperson),
  - 3 external members appointed by the Government.
- **Functioning:** It meets **at least four times** a year (usually bi-monthly) and the decisions are made by majority, and each member has one vote. In case of a tie, the **RBI Governor has the casting vote.**

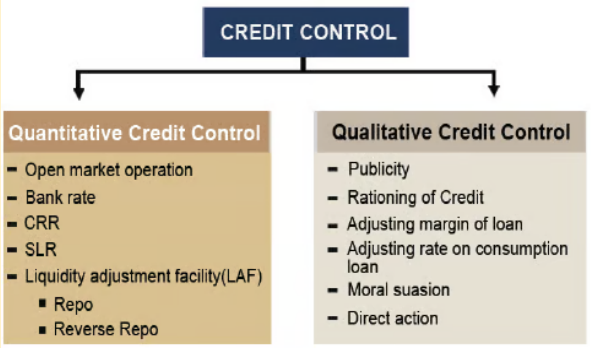
Flexible Inflation Targeting Framework (FITF)

- India adopted a Flexible Inflation Targeting Framework (FITF) in **2016.** Under this, the government, in consultation with the RBI, **sets an inflation target every five years.**
- Under this framework, the Government sets the inflation **target every five years** in consultation with the RBI. The current mandate, effective until **March 31, 2026,** specifies a CPI inflation target of **4%**, with a tolerance band of **±2%**, i.e. between 2% and 6%.

Monetary Policy Tools in India

Various instruments used by the RBI to control the money supply can be categorized into two categories:

- **Quantitative Tools:** Quantitative tools of monetary policy are aimed at controlling the cost and quantity of credit.
- **Qualitative Tools:** Qualitative tools of monetary policy are aimed at controlling the use and direction of credit.



Quantitative Tools

- **Repo Rate:** Rate at which RBI lends short-term funds to banks against collateral.
- **Reverse Repo Rate**: Rate at which RBI absorbs liquidity from banks.
- **Cash Reserve Ratio (CRR)**: Portion of deposits banks must keep with RBI in cash.
- **Statutory Liquidity Ratio (SLR):** Portion of deposits kept in liquid assets (gold, cash, securities).
- **Open Market Operations (OMO):** Buying/selling of government securities to control liquidity.
- **Marginal Standing Facility (MSF):** Emergency borrowing by banks at a penal rate.
- **Liquidity Adjustment Facility (LAF):** Framework for repo/reverse repo operations.
- **Market Stabilisation Scheme (MSS):** Bonds issued to absorb excess liquidity.

Qualitative Tools

- **Margin Requirement:** Controls loan-to-value ratio.
- **Consumer Credit Regulation:** Regulates credit terms.
- **Rationing of Credit:** Limits sectoral lending.
- **Moral Suasion:** Persuasive guidance by RBI.
- **Direct Action:** Penal action against non-compliant banks.

Reasons Behind the recent Policy Decision

- **Geopolitical Uncertainty:** The MPC decided to maintain the repo rate due to heightened geopolitical tensions in West Asia, which have worsened global economic uncertainty.
- **Supply-Side Shock:** The MPC highlighted that the Indian economy is facing a supply-side shock, primarily due to **disruptions in energy and commodity markets**.
- **Inflation Within the Target Range:** Retail inflation remains within the **2–6% target band**, and core inflation is contained limiting the need for immediate policy action.
- **Impact of Trade Agreements:** India recently signed trade agreements with the United States, the European Union, Oman and New Zealand.
  - These agreements are expected to boost exports and investments, reduce external vulnerabilities, and support medium-term growth.

Impact on the Indian Economy

- **Impact on Borrowers and Households:** Stable interest rates reduce financial uncertainty for middle-class households and housing loan borrowers.
- **Impact on Investment and Credit Growth:** Stable interest rates, strong demand conditions, and trade agreements create a predictable environment for private investment.
- **Macroeconomic Stability:** The decision reinforces the credibility of India's Flexible Inflation Targeting framework and demonstrates institutional stability in monetary policymaking.

Way Ahead

- **Safeguard External Sector Stability:** Active liquidity management, prudent forex reserve deployment, and monitoring of global financial conditions are necessary to cushion against external shocks.
- **Enhance Fiscal-Monetary Coordination:** Continued fiscal consolidation alongside targeted public spending will complement monetary policy and sustain long-term growth without triggering inflationary pressures.

Source: TH

BUILDING A FARMER-CENTRIC AGRICULTURAL ECOSYSTEM

Context

- Over the last decade, India has shifted from a **welfare-centric approach to a farmer-centric**

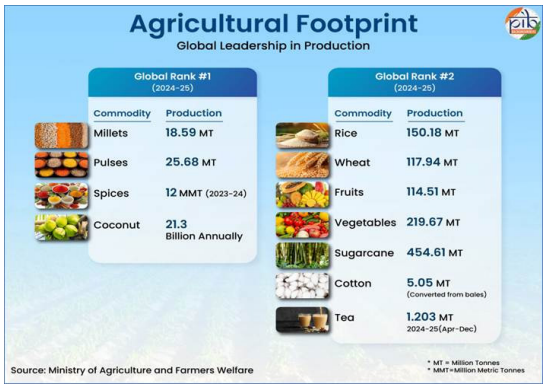
model focused on productivity, sustainability, and technological modernization, fostering a resilient and diversified agricultural ecosystem.

Agriculture Sector in India

- **Workforce Share:** Agriculture and allied activities employ **46.1%** of India's workforce.
- **Livelihood Reliance:** The sector continues to support close to **55%** of the total population, providing critical rural income security.
- **Economic Contribution:** Agriculture accounts for approximately **one-fifth (~19-20%)** of India's Gross Value Added (GVA).
- **Growth Rate:** Agriculture and allied sectors recorded **4.6%** growth in 2024–25 (real GVA growth), driven largely by livestock and fisheries.

Major Achievements in India's Agricultural Transformation

- **Agricultural Output and Economic Contribution:**
  - **Agricultural and allied sector GVA** increased from ₹20.9 lakh crore in 2014-15 to **₹48.7 lakh crore in 2023-24.**
  - **Foodgrain production** increased to **357.73 million tonnes in 2024-25.**
- **Enhanced Public Investment:** Budget allocation for the Department of Agriculture and Farmers Welfare increased to **Rs.1,40,528.78 crore for 2026-27.**
- **Agricultural exports** rose to **USD 51.1 billion (FY 24-25),** with processed food share increasing to **20.4%**, signalling value-added growth.



Major Challenges Faced by the Agricultural Sector

- **Water scarcity & irrigation:** India's agriculture is heavily dependent on monsoon rain, making it vulnerable to droughts and inconsistent rainfall patterns.
  - Access to irrigation facilities and water management are crucial challenges, particularly in regions with limited water resources.
- **Lack of access to credit & finance:** Small and marginal farmers often face difficulties in accessing credit and financial services.
- **Small landholdings:** Average farmers are small landholders, leading to fragmented and uneconomical farming practices.
  - This makes it challenging for them to adopt modern agricultural methods and technologies, resulting in lower productivity.
- **Outdated farming practices:** A significant portion of Indian farmers still rely on traditional and outdated farming methods.
- **Market volatility & price fluctuations:** Farmers in India often face price volatility due to lack of effective market linkages, intermediaries and price information.
- **Soil Degradation:** Nearly 30% of India's total land suffers from soil degradation due to intensive chemical-based practices.
  - **Overuse of urea and pesticides,** alongside declining organic matter, has led to nutrient imbalance, affecting soil fertility and ecosystem services.
- **Rising Input Costs:** The Green Revolution model has reached diminishing returns, with input costs rising faster than returns, driving indebtedness and farmer suicides.
- **Climate Change Impacts:** Rising temperatures, erratic rainfall, floods, droughts, and extreme weather events threaten agricultural productivity and food security.

Initiatives for Agricultural development

Shift from a Welfare-Centric to a Farmer-Centric Model

- **From Subsidy-Based Support to Income Security:** Earlier policies primarily emphasized input subsidies on fertilizers, electricity, irrigation, and food procurement.
  - The introduction of **PM-KISAN provided direct income** support through Direct Benefit Transfer (DBT), giving farmers greater financial autonomy and reducing leakages.
- **From Relief Measures to Risk Management:** Traditional approaches focused on post-disaster compensation after crop losses.
  - Initiatives such as **Pradhan Mantri Fasal Bima Yojana (PMFBY)** and weather-based advisories have strengthened pre-emptive risk mitigation and climate resilience.
- **From Being a Beneficiaries to Recognising as Stakeholders:** Earlier policies viewed farmers primarily as recipients of government assistance.
  - Contemporary reforms emphasize farmer empowerment through **FPOs, cooperatives, digital platforms, entrepreneurship,** and participation in value chains.
- **From Production-Centric Policies to Income-Centric Policies:** Earlier strategies emphasized **maximizing foodgrain production** to achieve food security.
  - Recent policies focus on **doubling farmers income,** diversification into horticulture, livestock, fisheries, beekeeping, and value addition

Way Ahead

- **Diversification:** Encourage a shift from **cereal-centric cultivation to horticulture, dairy, livestock, fisheries, sericulture, beekeeping, and agro-forestry** to enhance farm incomes and reduce dependence on a few crops.
- **Expand micro-irrigation systems** under drip and sprinkler technologies to improve water-use efficiency.
- **Strengthen Farmer Producer Organizations (FPOs)**, cooperatives, and Self-Help Groups (SHGs) to improve aggregation, bargaining power, access to credit, and market linkages.
- **Promote food processing, cold-chain networks**, warehousing, and logistics to reduce post-harvest losses and increase farmers' share in consumer prices.
- **Encourage start-ups,** agri-tech innovations, and data-driven farming solutions to improve productivity, efficiency, and market access.

Concluding remarks

- India's agricultural transformation must now move beyond productivity enhancement towards creating a **competitive, climate-resilient, technology-driven, and sustainable agri-food system** that ensures higher farmer incomes, food security, environmental sustainability, and rural prosperity while contributing to the vision of a **Viksit Bharat by 2047.**

Source: PIB

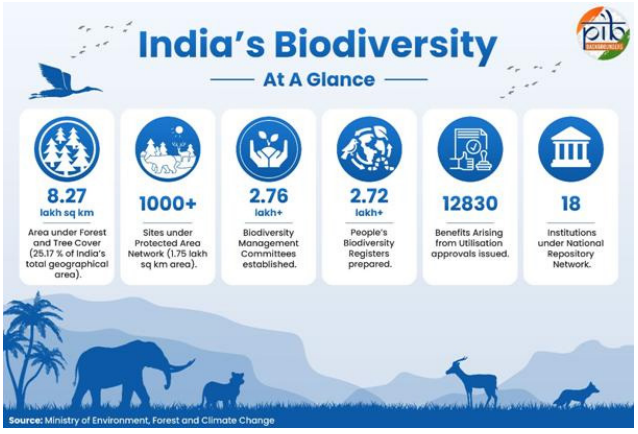
INDIA'S APPROACH TO BIODIVERSITY CONSERVATION

Context

- Over the past decade, India has adopted an **integrated approach to biodiversity conservation** that combines scientific management, habitat restoration, species recovery programmes, and community participation.

What is Biodiversity?

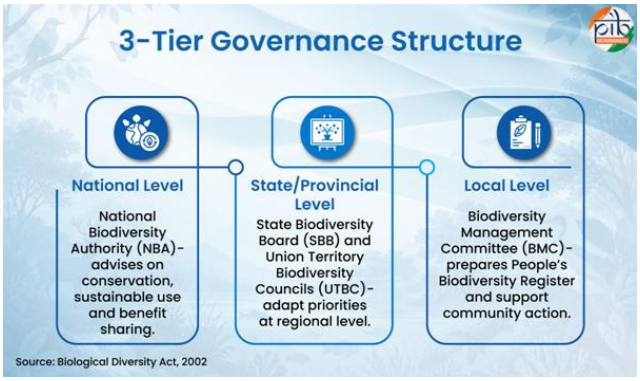
- Biodiversity refers to the **variety of life on earth,** including plants, animals, microorganisms and the ecosystems they form.
- **It underpins ecological balance and supports key ecosystem services** such as pollination, soil formation, nutrient cycling, water purification and climate regulation.



India's Biodiversity Framework

- **The Biological Diversity Act ,2002 (Amended in 2023):** It provides the statutory basis for biodiversity governance through institutions at the **national, state, and local levels.**

- The law also supports the documentation and protection of biological resources and associated traditional knowledge.
- The 2023 amendment further strengthened this framework by making implementation more facilitative and aligned with current needs.



- **Section 39 of Biological Diversity Act, 2002:** It empowers the Central Government to designate institutions as repositories for different categories of biological resources.
  - Any person discovering a new taxon is required to notify the designated repository and deposit the corresponding voucher specimens.
- **Scientific and technical support:** The Zoological Survey of India (ZSI) and the Botanical Survey of India (BSI) document animal and plant diversity.
  - The Forest Survey of India (FSI) maps forest and tree cover in periodic State of Forest Reports.
  - The National Tiger Conservation Authority (NTCA) and state forest departments support the conservation of tigers and their habitat.
- **National Biodiversity Authority Fund (NBAF) :** It is a statutory fund that supports biodiversity governance by providing a mechanism for benefit sharing and conservation related use.
- **People's Biodiversity Register (PBR):** It is a local biodiversity database prepared with community participation, the Biodiversity Management Committee prepares it in consultation with local people.
  - PBR is an important tool for documentation, conservation, and benefit sharing.
- **National Biodiversity Strategy and Action Plan (NBSAP 2024-2030):** It provides India with a long term policy direction for conserving biodiversity and using it sustainably.
  - The updated plan for 2024 to 2030 is aligned with the Kunming Montreal Global Biodiversity Framework (KMGBF), which gives it strong international relevance.
- **National Red List Roadmap (2025-2030):** It is led by Zoological Survey of India (ZSI) and Botanical Survey of India (BSI), with support from IUCN-India and the Centre for Species Survival, India, the roadmap will establish a nationally coordinated, science-based threatened-species assessment system.
- **Biodiversity Finance India** was launched in 2015 as a finance planning initiative to identify biodiversity funding needs and mobilise resources for conservation.
  - It focuses on identifying and mobilising finance, while the NBAF channels resources through a statutory mechanism for conservation and benefit sharing.

International Frameworks for Biodiversity Conservation

- **Convention on Biological Diversity (CBD), 1992:** It was adopted at the Earth Summit in Rio de Janeiro. It is a Legally binding international treaty with near-universal membership. India is a party to CBD
- **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES):** It was established in 2012 and often called the "IPCC for Biodiversity."
  - It provides scientific assessments on biodiversity and ecosystem services which supports evidence-based policymaking.
- **Ramsar Convention (1971):** It is an international treaty for the conservation and wise use of wetlands.
  - Promotes designation and management of wetlands of international importance.
- **Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention):** It was signed in 1979 and conserves migratory terrestrial, marine, and avian species. It also encourages international cooperation along migratory routes.
- **International Union for Conservation of Nature Initiatives:** It maintains the globally recognized IUCN Red List of Threatened Species.
  - It develops protected area categories and conservation guidelines.

- **Nagoya Protocol:** It is a legally binding supplementary agreement adopted during COP-10 of the Convention on Biological Diversity in Nagoya, Japan.
  - It ensures the fair and equitable sharing of benefits arising from the utilization of genetic resources, as well as associated traditional knowledge held by indigenous and local communities.
- **Kunming Montreal Global Biodiversity Framework (KMGBF):** It was adopted during COP15 of the CBD in Montreal, Canada.
  - It is an international agreement adopted in 2022 by 196 nations to halt and reverse biodiversity loss by 2030 and achieve a vision of "living in harmony with nature" by 2050.
  - Includes the 30×30 Target: conserving at least 30% of the world's land and oceans by 2030.
  - Recently, MoEFCC has submitted India's Seventh National Report (NR-7) to CBD, reaffirming its commitment to the objectives of the Convention.

Conclusion

- India's biodiversity efforts are now rooted in a strong blend of laws, institutions and community-led action, aligned with global frameworks under the CBD.
- India is strengthening forest and tree cover, expanding protected areas, improving species conservation and deepening local stewardship in a coordinated manner.
- Looking ahead, updated strategies, dedicated financing and transparent national reporting place biodiversity at the heart of sustainable and inclusive development.

Source: PIB

NEWS IN SHORT

SURHA TAL: INDIA'S 100TH RAMSAR SITE

Context

- Jai Prakash Narayan Bird Sanctuary (Surha Tal) in Ballia, Uttar Pradesh, has been designated as **India's 100th Ramsar Site**.

About

- Established in **1991**, the sanctuary is centred around **Surha Tal**, a natural perennial **oxbow lake** formed by the shifting course of the **Ganga River**.
- It is located in the **Indo-Gangetic Plain**, near the confluence of the **Ganga and Ghaghara** rivers.
- It hosts several migratory birds from **Siberia and Central Asia**, including the **Greylag Goose, Pintail, Common Teal, and Bar-headed Goose**.
- Local species include **Sarus crane, Heron, and Cormorant**.

Ramsar Convention

- The **Ramsar Convention on Wetlands** was signed in **Ramsar, Iran, in 1971** and came into force in **1975**.
- India became a signatory on **1 February 1982**.
- There are **over 2,500 Ramsar Sites** worldwide.

Source: AIR

ISOBUTANOL

Context

- As India expands its biofuel strategy beyond ethanol, the government is evaluating the use of diesel blended with up to 15% isobutanol to reduce dependence on crude oil imports.

About

- **Isobutanol** is an alcohol-based biofuel that can be blended with diesel as an alternative fuel.
- It has a **higher energy content** and combustion characteristics closer to conventional hydrocarbon fuels, resulting in better fuel efficiency and a smaller impact on vehicle mileage than ethanol.
- It absorbs less moisture from the atmosphere, reducing storage and fuel-system challenges.
- It is less corrosive to fuel-system components, pipelines, and storage infrastructure.
- It can be used with relatively fewer modifications to existing engines and fuel distribution networks.

Source: India Today

JAN SAMARTH PORTAL

Context

- The Jan Samarth Portal has completed four years of promoting digital financial inclusion and seamless credit delivery.

About

- Launched in **2022**, Jan Samarth is a **single-window digital platform** for availing benefits under **16 credit-linked government schemes**.
- It facilitates access to institutional credit across sectors such as **agriculture, business, housing, renewable energy, and livelihoods**.
- Available in **8 languages**, the portal has onboarded **269 lending institutions**, including banks, NBFCs, and cooperative banks.
- It enables end-to-end digital loan processing with real-time verification through databases such as **UIDAI, UDYAM, AgriStack, GST, and Central Board of Direct Taxes**.

Source: PIB

TAX-FREE GOVERNMENT BONDS FOR FOREIGN INVESTORS

Context

- The Government of India has abolished capital gains tax and withholding tax on Foreign Institutional Investors' (FIIs)/Foreign Portfolio Investors' (FPIs) investments in government securities with effect from **April 1, 2026.**

Key Provisions

- Foreign investors will no longer be required to pay;
  - **A 12.5% long-term capital gains tax** on government bond investments.
  - **A 30% short-term capital gains tax** on government bond investments.
  - **Withholding tax** on interest income earned from government securities.
- The tax exemptions will apply to both **foreign institutional investors** and the **Bank for International Settlements (BIS).**

Reasons Behind the Decision

- The measure aims to **attract larger foreign capital inflows** and strengthen India's debt market.
- The measure aims to **support the rupee, bridge the projected Balance of Payments (BoP) deficit, and enhance external sector stability** amid weak foreign investment inflows.

Key Economic Terms

- **Long-Term Capital Gains (LTCG) Tax:** A tax levied on profits earned from the sale of government securities **held for more than 12 months.**
- **Short-Term Capital Gains (STCG) Tax:** A tax imposed on profits earned from the sale of government securities **held for 12 months or less.**
- **Withholding Tax on Interest Income:** A tax deducted at source on interest earned by non-resident investors from government bonds.

Source: IE

INDIA'S GDP GROWTH AT 7.7% IN FY 2025–26

Context

- The **Ministry of Statistics and Programme Implementation (MoSPI)** has released the Provisional Estimates of GDP for **FY 2025–26**, showing that India's economy expanded by **7.7%,** higher than the earlier estimate of 7.6% and significantly above the 7.1% growth recorded in FY 2024–25.

Key Highlights

- **Manufacturing-led Expansion:** The manufacturing sector recorded a robust growth of **10.7%** in FY 2025–26.
- **Strong Performance of Services Sector:** The sector comprising trade, repair, hotels, transport, communication, broadcasting, and storage grew by **11%** in FY 2025–26.
- **Consumption-led Growth:** Private Final Consumption Expenditure (PFCE), a key measure of household spending, grew by **7.7%.**
- **Rise in Investment Activity:** Gross Fixed Capital Formation (GFCF), an indicator of investment and asset creation, grew by **8.2%.**

Factors Supporting Growth

- **Structural Reforms:** Continued implementation of economic reforms improved productivity and business efficiency.
- **Strong Domestic Demand:** Rising consumption expenditure boosted demand for goods and services. Growth remained largely driven by **domestic economic fundamentals** rather than external demand.
- **Capital Expenditure Push:** Government-led infrastructure spending strengthened investment momentum. Capital expenditure generated **multiplier effects** across manufacturing, construction, and services sectors.

About Gross Domestic Product (GDP)

- GDP is the **total monetary value of all final goods and services** produced within a **country's domestic territory** during a specific period (usually a quarter or a year).
- **Released By:** National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI).
- **Base Year:** 2022–23.
- **Calculation of GDP:** GDP is calculated using three main methods;
  - **The Expenditure Approach:** This method sums up all spending on final goods and services in the economy.
  - **The Income Approach:** This method sums all incomes earned by factors of production (labor, capital).
  - **The Production/Value-Added Approach:** This method adds up the value added by each industry at every stage of production.

Source: AIR

DISTRICT DOMESTIC PRODUCT (DDP) ESTIMATES WITH BASE YEAR 2022-23

Context

- The National Statistics Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI) has uploaded the **Draft Guideline for Compilation of District Domestic Product (DDP) Estimates with Base Year 2022-23.**

About

- The guideline provides a **comprehensive and uniform framework for compilation of District Domestic Product** estimates across States and Union Territories.
- **Objective:** To ensure consistency, comparability and methodological standardization in district level economic estimates under the revised base year framework.

District Domestic Product (DDP)

- DDP estimates are statistical measures used to calculate the **total value of goods and services produced within a district over a specific period.**
- They serve as a disaggregated counterpart to the Gross State Domestic Product (GSDP) at State level and the Gross Domestic Product (GDP) at the national level, **providing granular insights into the local economic structure and performance of districts**
- They are useful for **comparing economic performance between districts, identifying backward regions and planning local development programs.**

Source: PIB

100 YEARS OF SOLAR DATA TRACES NEW CLUES ON HOW THE SUN'S SURFACE TRACKS ITS 11-YEAR ACTIVITY CYCLE

Context

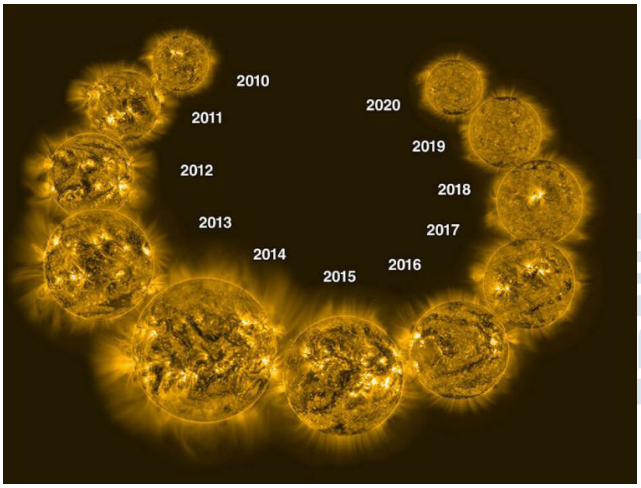
- The Kodaikanal solar observatory, known for the oldest continuous series of solar data collected in India, **provided insights for future solar cycle prediction.**

About

- The energy generated within the Sun is **transported through its outer layers via convection.**
  - **Convective cells** lead to the formation of **small-scale granulations** and **large scale supergranulations** as a network structure on the solar surface.
  - **The network cells** have an average lifetime o**f 24 hr,** and a size of about 30,000 km., The width of the cooler intergranular lanes is about 6000 km.
  - The origin of these supergranulations, their size, and what is their relation with the 11-year solar cycle **is not known.**
  - A recent study from the Indian Institute of Astrophysics based on more than 100 years of data from the Kodaikanal Solar Observatory **sheds some light on these questions.**
- **The findings suggest** that **supergranular properties,** such as lane width and intensity, are **influenced by local magnetic flux and solar activity levels.**
  - The analysis confirms that **while no single latitude follows the solar cycle exactly, significant correlations exist at specific latitudes** for different quantities.
  - It highlights the **importance of understanding these correlations for predicting solar activity**.

Solar Cycle

- The solar cycle is the cycle that the **Sun's magnetic field goes through approximately every 11 years.**
- The Sun is a huge ball of electrically-charged hot gas. This charged gas moves, **generating a powerful magnetic field.**
  - Every 11 years or so, the Sun's **magnetic field completely flips.** This means that the **Sun's north and south poles switch places.**
  - Then it takes about **another 11 years for the Sun's north and south poles to flip back again.**
- The solar cycle affects activity on the surface of the Sun, such as **sunspots which are caused by the Sun's magnetic fields.**
  - As the magnetic fields change, so does the amount of activity on the Sun's surface.



- **Tracking of Solar Cycle:** One way to track the solar cycle is by **counting the number of sunspots.**
  - The beginning of a solar cycle is a **solar minimum,** or when the Sun has the least sunspots.
  - Over time, solar activity and the number of sunspots increases.
  - The middle of the solar cycle is the **solar maximum**, or when the Sun has the most sunspots.
  - As the cycle ends, it fades back to the solar minimum and then a new cycle begins.
- **Forecasting:** Astronomers use many different ways to forecast the strength of the next solar cycle.
  - This includes theoretical calculations based on dynamo models, extrapolations, precursor methods, etc.
  - The precursor method uses the value of some measure of solar activity at a specified time to predict the strength of the following solar maximum.

Source: PIB

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