ECONOMY SURVEY 2023-24

- Subject wise segmentation
- User friendly layout
- Infographic aid and interactive elements

Comprehensive Current Affairs Coverage for Mains 2024

ECONOMIC SURVEY 2023-2024

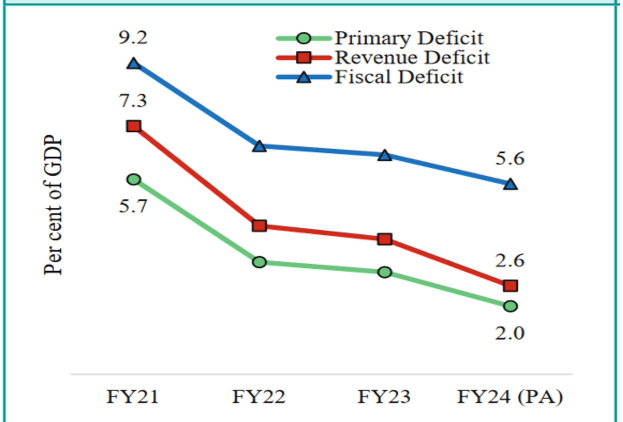
CHAPTER 1: STATE OF THE ECONOMY: STEADY AS SHE GOES

- **Introduction**
- **Global Economic Scenario**
- **A Resilient Domestic Economy**
- **Macroeconomic Stability Safeguards Growth**
- **Inclusive Growth**

Introduction:

- The Economic Survey conservatively projects **a real GDP growth of 6.5–7 per cent, with risks evenly balanced**, cognizant of the fact that the market expectations are on the higher side.
- India's economy carried forward the momentum it built in FY23 into FY24 despite a gamut of external challenges. The focus on maintaining macroeconomic stability ensured that external challenges had minimal impact on India's economy.
- India's real **GDP grew by 8.2 per cent in FY24, exceeding the 8 per cent mark** in three out of four quarters of FY24.
- On supply side, Gross Value Added (GVA) grew by 7.2 per cent in FY24 (at 2011-12 prices) and net taxes at constant prices grew by 19.1 per cent in FY24.
- With debt management of administrative and monetary policies, retail inflation reduced from 6.7 per cent in FY23 to 5.4 per cent in FY24.
- Current Account Deficit (CAD) stood at 0.7 per cent of the GDP during FY24, an improvement from the deficit of 2.0 per cent of GDP in FY23.

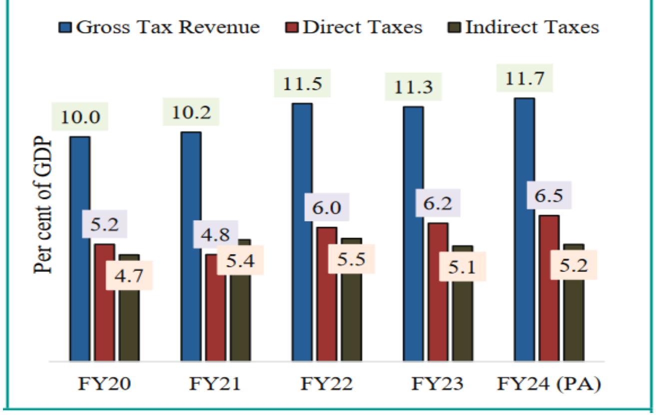
Chart I.33: Steadily declining deficit ratios



Source: Budget At A Glance, Union Budget FY24 (Interim), Union Government Accounts at a Glance – O/o CGA

- **Indian economy has recovered and expanded in an orderly fashion post pandemic.** The real GDP in FY24 was 20 per cent higher than its level in FY20, a feat that only a very few major economies achieved.

Chart I.36: Increase in gross tax revenue to GDP ratio driven by strong direct tax growth



- 55% of tax collected accrued from direct taxes and remaining 45% from indirect taxes.
- Government has been able to ensure free food grains to 81.4 Crore people. Total expenditure allotted to capital spending have progressively enhanced.

Global Economic Scenario

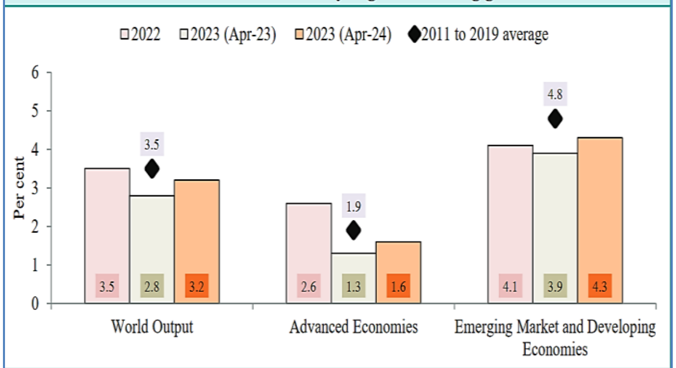
- In 2023, the global economy achieved stability with a **growth rate of 3.2%, higher than the projected 2.8% by the IMF but slightly lower than in 2022**. Despite elevated geopolitical uncertainties, particularly from the Russia-Ukraine conflict and Middle East tensions, the growth was robust.

Chart I.3: All major economies have surpassed pre-pandemic GDP levels

	Year in which crossed pre pandemic GDP (constant prices, national currency)	Ratio of GDP (constant prices, national currency) in 2023 to corresponding level in 2019
Brazil	2021	107
China	2020	120
France	2022	102
Germany	2022	101
India	2021	120
Indonesia	2021	112
Italy	2022	103
Japan	2023	101
Mexico	2022	104
South Africa	2022	101
Thailand	2023	100
United Kingdom	2022	102
United States	2021	108

Source: World Economic Outlook Database, April 2024, IMF, National Accounts Statistics, Ministry of Statistics and Programme implementation; Note: In IMF data, for India 2021 represents 2021-22 (FY22)

Chart I.2: Global economy registers strong growth

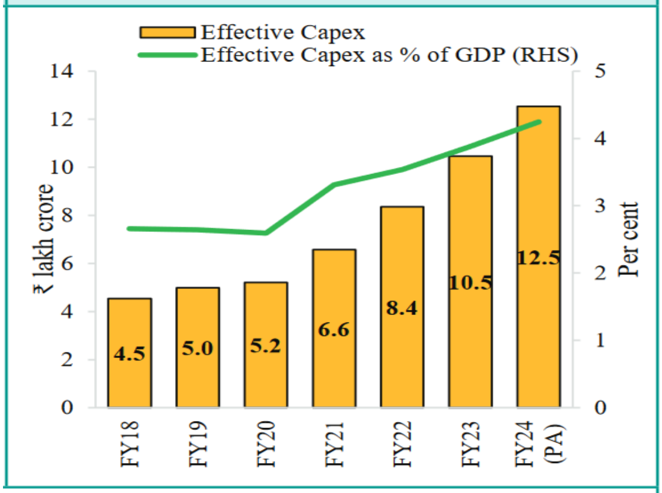


Source: World Economic Outlook Database, April 2024 and April 2023, IMF

Key Highlights

- **Growth Context:** Inflationary pressures were high due to persistent core inflation. Global trade moderated due to geopolitical tensions and slower growth in advanced economies, despite eased supply chain pressures.
- **Economic Performance:** Both emerging market economies (EMEs) and advanced economies (AEs) exceeded growth projections, with many surpassing pre-pandemic GDP levels. India and China saw GDP levels 20% higher than in 2019.
- **Regional Differences:** The US maintained growth momentum, while Europe faced subdued growth, particularly in Germany and France, due to the Russia-Ukraine conflict. Japan is expected to recover in 2024, driven by a weak yen and improved consumer spending.
- **Investment and Trade:** Caution among investors and moderated FDI flows were noted due to geopolitical developments and monetary policy changes.
- **Inflation Trends:** Inflation peaked in 2022 but declined in 2023, though it remained above target in many countries. Goods inflation decreased significantly due to eased supply-chain pressures, while core inflation stayed high due to services inflation and a strong labor market in AEs.
- **Supply Chain and Geopolitical Risks:** The Red Sea crisis in October 2023 briefly disrupted supply chains, increasing transportation costs. However, these pressures were transient. Geopolitical risks remain high and persistent.
- **Economic Indicators**
  - **Purchasing Managers' Index (PMI):** The JP Morgan global composite PMI saw an uptick since October 2023, with improved performance in both manufacturing and services.
  - **Global Economic Activity:** Leading indicators pointed towards an upturn in global economic activity.

Chart I.40: Increasing union government effective capex[29] to GDP ratio



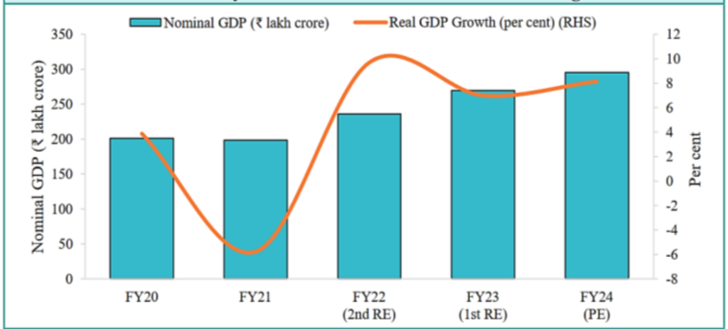
A Resilient Domestic Economy

- **India's economy maintained strong momentum in FY24 despite global challenges.**

Key highlights include:

- **GDP Growth:** Real GDP grew by 8.2%, driven by stable consumption and improving investment demand. Gross Value Added (GVA) grew by 7.2%, with agriculture, industry, and services contributing 17.7%, 27.6%, and 54.7% respectively.

Chart I.16: Carry-forward of momentum in economic growth



Source: Statement 13: Annual and Quarterly Estimates of GDP at Constant Prices, and Annual and Quarterly Estimates of GDP at Current Prices 2011-12 Series, National Accounts Data, MoSPI; Note: RE – Revised Estimates, PE – Provisional Estimates

- **Private Consumption:** Private final consumption expenditure (PFCE) grew by 4.0%, with strong urban demand reflected in passenger vehicle sales and air traffic. Rural consumption also picked up.
- **Investment:** Gross Fixed Capital Formation (GFCF) increased, with private investment growing by 19.8%. Residential real estate sales hit a high, indicating strong housing demand.
- **Banking and Finance:** Banks and financial institutions were well-positioned to meet investment demands, with double-digit credit growth to MSMEs and housing. Corporate bond issuances increased by 70.5%.
- **Trade**: Global trade slowed, affecting merchandise exports. However, reduced imports and a surplus in services trade mitigated the impact on GDP.

Macroeconomic Stability Safeguards Growth

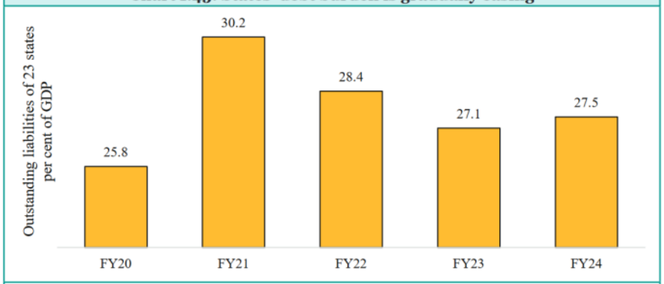
- **Economic Growth and Stability:** India's economy continued its strong momentum into FY24, achieving a real GDP growth of 8.2%, marking over 7% growth for the third consecutive year.
- The economy's resilience was supported by **stable consumption and rising investment demand**, along with a focus on maintaining macroeconomic stability.

Sectoral Performance:

- **Agriculture**: Contributed 17.7% to GVA, with slower growth due to erratic weather, leading to a slight decline in foodgrain output.
- **Industry**: Accounted for 27.6% of GVA, with manufacturing growing by 9.9%, driven by lower input prices and stable domestic demand.

- **Services**: The largest sector with 54.7% of GVA, showed robust growth, particularly in financial services and tech-enabled services post-pandemic.

Chart I.45: States' debt burden is gradually easing

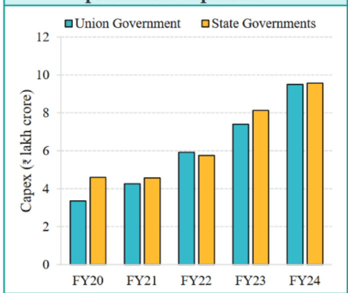


Source: Statement 19: Total Outstanding Liabilities of State Governments, State Finances: A Study of Budgets, RBI

Consumption and Investment:

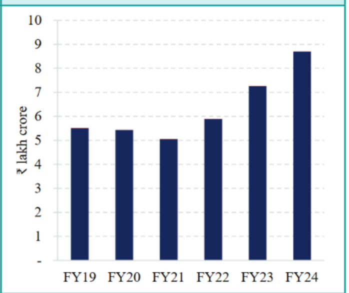
- **Private consumption** grew by 4.0%, supported by strong urban demand and improving rural consumption.
- **Gross Fixed Capital Formation** (GFCF) increased, driven by both private and government investments, indicating a capex upcycle.
- **Public Finances:** Fiscal consolidation continued, reducing the fiscal deficit from 6.4% to 5.6% of GDP.
  - Strong growth in tax revenues and non-tax revenues, alongside rationalized subsidy expenditure, supported fiscal health.
  - Capital expenditure by the government increased, focusing on infrastructure to boost long-term growth.

Chart I.20: Greater general government focus on building productive capacities



Source: Tables no. 95 and 102, Handbook of Statistics on the Indian Economy, RBI, CGA[23]

Chart I.21: Steadily rising private corporate capex

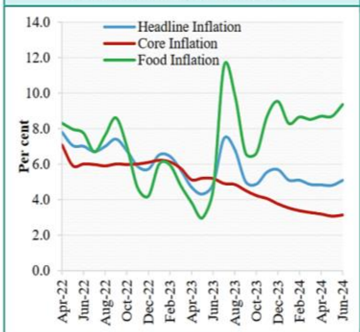


Source: Axis Bank Research

Inflation and Financial System:

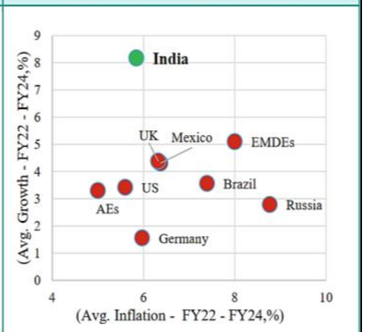
Inflation moderated to 5.4%, aided by government measures and RBI's policy interventions.

Chart I.52: Declining core inflation but volatile food inflation



Source: Consumer Price Indices released by CSO, MoSPI

Chart I.53: India a high-growth and low-inflation economy



Source: IMF WEO database (April 2024), MoSPI

- The banking sector remained resilient with improved asset quality and profitability, ensuring support for growing investment demand.

Strengthening the Statistical System

- A sound and dynamic statistical system is the cornerstone for an informed citizenry, data-driven policies and decision-making. Official statistics play a pivotal role in addressing societal challenges and promoting inclusive growth. The government is taking many steps aimed at strengthening administrative and survey statistics, building capacities and improving data quality and timeliness.

MoSPI, the cornerstone

- MoSPI is the nodal ministry for the planned and integrated development of the Indian statistical system. MoSPI anchors the core statistics by publishing GDP, price and volume indices and countrywide surveys of macroeconomic and sectoral importance. The Ministry has initiated various new surveys, namely, the annual survey of unincorporated sector enterprises, a time-use survey and started a pilot for an annual survey of service sector enterprises. MoSPI is also working towards increasing the frequency of PLFS data and extending the generation of quarterly estimates for rural areas. Modern IT tools are being adopted for improved data capturing and processing. To encourage greater use of administrative data, a National Metadata Structure is also being developed. The Unified Data Portal project has been envisaged by MoSPI with the objective of creating a centralised database and storage system. Ministries are also taking initiatives to enhance the frequency of various surveys to make more informed policy decisions. Given India's 2047 goals, it is important for development policy that (a) MoSPI is capacitated fully to produce and integrate all required statistics with the desired quality, regularity and timeliness and (b) the quality and timeliness of administrative and transactional data of the line Ministries are brought to levels that fully facilitate timely course corrections.

Further steps to strengthen the statistical database:

- a) An extensive exercise for base revision of important economic statistics is being taken up at MoSPI. The exercise to change the base year of CPI from 2012 to 2024 has been initiated. An Advisory Committee on National Accounts Statistics has been set up to decide on the base year for GDP. It is important that the base year of critical data series like the GDP, different price indices and volume indices like Index of Industrial Production (IIP) are updated to the most recent feasible year at the earliest. The ongoing efforts to construct the producer price index for goods and services may be expedited to have a greater grasp of episodes of cost-push inflation. State-level variants of indices like IIP will help understand the emerging geographical patterns. Survey data to help understand private sector capital formation at regular intervals will also help policy formulation.

- b) The high-frequency price monitoring data for essential food items collected by different departments may be linked in such a way that the build-up of prices at each stage from the farm gate to the final consumer is quantifiable and monitorable. This will help improve the effectiveness of administrative action by the Government to stabilise prices of essential food items.
- c) More than 1.3 crore entities are registered under GST and file returns. The granular GST data, if made available, has great potential to analyse the health of businesses, screening of loan applications, provide support for cash flow-based lending, and understand the economies of different geographies deeply.
- d) The XV Finance Commission observes, "The CAG, which is mandated to carry out the role of accounts compilation and finalisation for almost all the States, as well as being the auditor of both the Union and the States, is already in the process of establishing common fiscal data standards. This would eventually ensure the availability of standardised data through a public web portal for granular level fiscal statistics of the Union and the States, both for historic audited fiscal data and high-frequency fiscal data for the current year in downloadable database formats." 39 Granular time series, in database formats, of audited accounts of the Union and the States will make fiscal analysis and policy much easier.
- e) Regular indicators of the dynamics of production and employment in MSMEs are essential, considering their potential for growth and job creation.
- f) Information may be published on industry-wise gross disbursement of bank credit (as opposed to the data on outstanding credit currently available), industry-wise monthly gross financial flows through domestic and external equity and debt routes, and other financing sources.
- g) There is also a need to have a regular mechanism to aggregate the financial flows to infrastructure and physical progress- sectorally and geographically differentiated-achieved in different infrastructure sectors, at least on an annual basis.
- h) The large volume of data generated by schemes such as Pradhan Mantri Jan Arogya Yojana and Ayushman Bharat Digital Mission, which capture details such as hospital admissions, patients' medical history or demographic details. These can be used for disease surveillance, preventive medication, etc.
- i) The Labour Bureau is also tasked with conducting five surveys relating to workers and employment. Ensuring rigour, timeliness and user-friendliness of data and making it available in database formats will help analysis and policy.
- The thrust on evidence also necessitates that the process and impact evaluation capacities in the Union and State Governments and universities are nurtured and driven towards maturity in a time-bound manner.

External Sector:

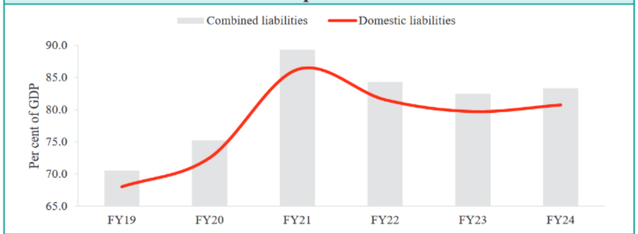
- Trade faced global challenges, but service exports reached new highs, and the current account deficit improved to 0.7% of GDP.
  - Robust foreign portfolio inflows supported the external sector, despite a moderation in FDI.
- **Overall Outlook:** India maintained macroeconomic stability amidst global challenges, with a commitment to fiscal consolidation and economic reforms.
  - The country's fiscal and external positions remain strong, supporting a sustainable growth trajectory.

Inclusive Growth

Shift in the approach to welfare

- India's social welfare approach **has shifted from input-based to outcome-based empowerment**, aiming for saturation of basic necessities through flagship initiatives. Programs like **PM Ujjwala Yojana (free gas connections), Swachh Bharat Mission (toilets), Jan Dhan Yojana (bank accounts), and PM-AWAS Yojana (pucca houses**) have improved capabilities and opportunities for the underprivileged.

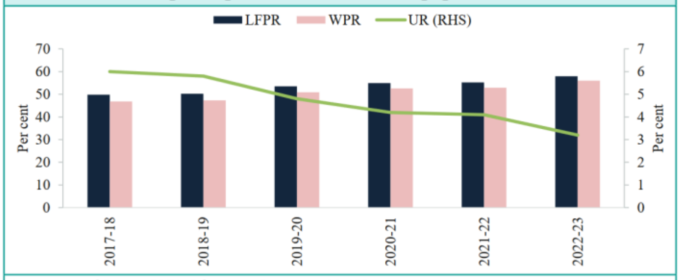
Chart I.50: General Government liabilities to GDP ratio come off their peak in FY21



Source: Table 112, Combined Liabilities of Central and State Governments, Handbook of Statistics on Indian Economy, RBI. Notes[34]

- Targeted reforms for last-mile service delivery include the **Aspirational Districts Programme (2018), Aspirational Blocks Programme (2023), and Vibrant Villages Programme**, along with the recent Viksit Bharat Sankalp Yatra involving 15 crore participants. Digitisation in healthcare, education, and governance, along with **Direct Benefit Transfer (DBT) and the Jan Dhan-Aadhaar-Mobile trinity, have enhanced fiscal efficiency**, with ₹36.9 lakh crore transferred via DBT since 2013.
- Employment metrics show **improvement**, with declining unemployment rates, rising labour force participation, and increasing female participation from 23.3% in 2017-18 to 37% in 2022-23. Poverty has significantly declined, as indicated by **NITI Aayog's multidimensional poverty discussion paper**. The latest Household Consumption Expenditure Survey (HCES) 2022-23 reveals increased monthly per capita consumption expenditure (MPCE) in both rural and urban areas since 2011-12, indicating inclusive growth and reduced disparity between rural and urban MPCE.

Chart I.60: Declining unemployment rate and improvement in labour force participation rate and worker population ratio



Source: Annual Report, PLFS, July 2022 - June 2023, MoSPI

Glossary:

TERMS	MEANINGS
Gross domestic product (GDP)	Gross domestic product is the monetary value of all finished goods and services made within a country during a specific period.
Current Account Deficit (CAD)	CAD measures the difference between a country's total exports and its total imports of goods, services, and transfers over a specific period. Deficit indicates that country is importing more goods and services than it is exporting.
Core Inflation	Core inflation is the change in the costs of goods and services, but it does not include those from the food and energy sectors.
Private Final Consumption Expenditure (PFCE)	PFCE is defined as the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services, whether made within or outside the economic territory.
Gross Fixed Capital Formation (GFCF)	GFCF refers to the aggregate of gross additions to fixed assets (i.e., fixed capital formation), increase in stocks of inventories and net acquisition of valuables.
Labour Force Participation Rate (LFPR)	LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population.

CHAPTER 2: MONETARY MANAGEMENT AND FINANCIAL INTERMEDIATION

- **Introduction**
- **Monetary Developments**
- **Financial Intermediation**
- **Performance of the Banking Sector and Credit Availability**
- **Trends in Indian Capital Markets**
- **Developments in the Insurance Sector**
- **Developments in the Pension Sector**
- **Assessment and Outlook**

Introduction

- India's banking and financial sectors have displayed a stellar performance in FY24.

Chart II.5: Double-digit growth in credit disbursal by SCBs

Source: Deployment of Bank Credit by Major Sectors, Handbook of Statistics on Indian Economy, Table No. 170, RBI
Note: Data includes the impact of merger of a non-bank with a bank

- RBI maintained a **steady policy rate** throughout the year with overall inflation rate under control.
- **Monetary Policy committee (MPC)** maintained the status quo on the policy repo rate at 6.5 per cent in FY24. Inflation made to gradually align with its target while supporting growth.
- Credit disbursal by Scheduled Commercial Banks (SCBs) stood at ₹164.3 lakh crore, growing by 20.2 per cent at the end of March 2024.
- Growth in broad money (M3), excluding the impact of merger of HDFC with HDFC Bank, was 11.2 per cent (YoY) as on 22 March 2024, compared to 9 per cent a year ago.
- Double-digit and broad-based growth in bank credit, gross and net non-performing assets at multi-year lows, and improvement in bank asset quality highlight the government's commitment to a healthy and stable banking sector.
- Credit growth remains robust mainly driven by the lending to services and personal loans.
- Agriculture and allied activities witnessed double digits growth in credit during FY24.
- Industrial credit growth was 8.5 per cent compared to 5.2 per cent a year ago.
- **Insolvency and Bankruptcy Code (IBC)** has been recognized as an effective solution for the twin balance sheet problem, in the last 8 years, 31,394 corporate debtors involving a value of Rs 13.9 Lakh Crore have been disposed off as of March 2024.
- Primary capital markets facilitated capital formation of ₹10.9 lakh crore during FY24 (approximately 29 per cent of the gross fixed capital formation of private and public corporates during FY23).
- The market capitalisation of the Indian stock market has seen a remarkable surge, with the market capitalisation to GDP ratio being the fifth largest in the world.
- **Financial inclusion is not just a goal but also an enabler for sustainable economic growth**, reduction of inequality and elimination of poverty. The next big challenge is Digital Financial Inclusion (DFI).
- Dominance of banking support to credit is steadily being reduced and the role of capital markets is rising. As India's

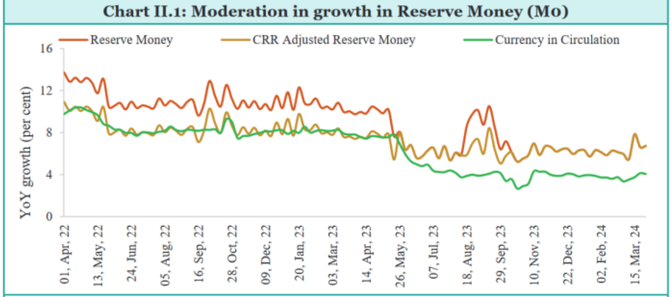
financial sector undergoes critical transformation, it must brace for likely vulnerabilities.

- India poised to emerge as one of the fastest-growing insurance markets in the coming decade.
- The Indian microfinance sector emerges as the second largest in the world after China.

Monetary Developments:

- Monetary policy in India **aims to maintain price stability and support growth**. Instruments like the **cash reserve ratio (CRR), statutory liquidity ratio (SLR), and open market operations (OMO)** are employed by the central bank to achieve these objectives.
- **Monetary and Credit Conditions**
- In FY24, the Monetary Policy Committee (MPC) maintained the policy repo rate at 6.5%, focusing on controlling inflation while supporting economic growth. **Key developments included:**
  - Withdrawal of ₹2,000 banknotes (May 2023)
  - Merger of HDFC with HDFC Bank (July 2023)
  - Temporary imposition of incremental CRR (I-CRR) (August 2023)
  - By June 2024, 97.87% of ₹2,000 notes had returned to the banking system, moderating the growth in reserve money (M0) and currency in circulation (CiC).
- **Reserve and Broad Money**
  - Reserve Money (M0): Grew 6.7% YoY as of March 2024, driven by net foreign assets.
  - Broad Money (M3): Grew 11.2% YoY as of March 2024, excluding the HDFC merger impact, with aggregate deposits being a major contributor.

Chart II.1: Moderation in growth in Reserve Money (M0)



Source: Reserve Money: Components and Sources, Publications, Weekly Statistical Supplement, RBI

- **Liquidity Conditions and Policy Rates**
  - RBI conducted various operations to manage liquidity, including Variable Rate Reverse Repo (VRRR) and Variable Rate Repo (VRR) auctions. The temporary I-CRR introduced in August 2023 impounded ₹1.1 lakh crore but was discontinued by October 2023 to release funds ahead of the festival season.
- **Monetary Policy Transmission**
  - Lending and deposit rates of scheduled commercial banks (SCBs) increased during FY24 due to earlier policy rate hikes. From May 2022 to May 2024, the external benchmark-based lending rate and one-year median marginal-cost-of-funds-based lending rate increased by 250 bps and 175 bps, respectively.

Financial Intermediation

- **Financial development and economic growth are closely connected**, with financial intermediation playing a crucial role in this relationship.
- Joseph Schumpeter emphasized that **financial intermediaries mobilize savings, extend credit, manage risk, and facilitate transactions,** all of which are vital for technological innovation and economic development.
- Efficient financial markets **enhance economic growth** by optimizing the allocation and utilization of savings and providing access to finance for all societal segments, including vulnerable groups and small and medium-sized enterprises.
- Key indicators of financial development and stability include the **Capital to Risk (Weighted) Assets Ratio (CRAR), liquid assets to deposits ratio, and the management of short-term credit**. Robust policies for regulation and supervision of financial entities and instruments are essential, necessitating coordination among regulators to maintain overall financial stability.

Enhancing the flow of bank credit to MSMEs through formalisation

- **Improving credit flow to the MSME sector at low cost has been a policy priority of the Government and RBI. Various initiatives have been undertaken in this regard. These are elaborated below:-**
- **Introduction of Trade Receivables Discounting System (TReDS):** TReDS is a digital platform that facilitates the discounting of MSMEs' trade receivables through multiple financiers- Banks and NBFCs- to meet liquidity and working capital requirements. Cumulatively, 98.9 lakh invoices amounting to ₹2.9 lakh crore have been discounted on TReDS platforms, as of 31 March, 2024 supporting MSMEs for better liquidity and working capital management.
- **Change in definition of MSMEs**: From 1 July 2020, MSMEs are defined as per a composite criterion of turnover and investment in plant and machinery/equipment. This is envisaged to bring a large number of entrepreneurs under the ambit of the formal banking sector, which will facilitate the flow of credit to the industry at subsidised rates.
- **Registration of MSMEs on Udyam Portal:** The Ministry of MSMEs launched the Udyam Registration Portal (URP) on 1 July 2020 and since then has established itself as an essential enabler for ease of doing business, as it is free of cost, simple and online. This was done to bring entrepreneurs under the ambit of the formal banking sector, which will facilitate the flow of credit to MSMEs at subsidised rates. However, one challenge with URP is the registration of Informal Micro Enterprises (IMEs) which are sizeable in number. As per the 73rd National Sample Survey, 6.3 crore unincorporated non-agricultural

entities existed in FY16, primarily micro-enterprises. Since IMEs do not have a PAN/GST, they cannot register on URP and avail themselves of the benefits of Government programmes. To formalise such enterprises, the Ministry of MSME, in collaboration with the Small Industries and Development Bank of India (SIDBI), launched the Udyam Assist Platform (UAP) on 11 January 2023. Through formalisation, informal micro enterprises will be linked to various facilities such as access to markets and credit etc. As of June 2024, 1.86 crore IMEs have been onboarded on UAP. More than 4.5 crore enterprises have been registered on URP and UAP as of 3 June 2024.

- **Revamp of Credit Guarantee Scheme (CGS) for MSEs:** In the Union Budget FY23, the revamp of the CGS for Micro and Small Enterprises (MSEs) was announced with a required infusion of funds to facilitate an additional credit of ₹2 lakh crore for MSEs. Accordingly, the CGS was revamped with an infusion of ₹9,000 crore in the corpus of Credit Guarantee Fund Trust for MSEs. Subsequently, the credit limit under the said scheme was enhanced from ₹2 crore to ₹ 5 crore, with a minimum annual guarantee fee of as low as 0.37 per cent per annum. Consequently, credit guarantees worth ₹3 lakh crore were approved during FY23 and FY24 against the target of ₹2 lakh crore in four years. During FY23, out of the guarantees of ₹1.04 lakh crore, ₹16,373 crore and ₹2,750 crore were extended to women and SC/ST-owned enterprises, respectively. Guarantees worth ₹2.02 lakh crore were extended in FY24, out of which ₹32,223 crore and ₹5,393 crore were extended to women & SC/ST-owned enterprises, respectively.

Performance of the Banking Sector and Credit Availability

- India's banking **sector has shown resilience with improvements in asset quality**, increased provisioning for bad loans, sustained capital adequacy, and rising profitability. Credit growth remains robust, primarily driven by lending to services and personal loans.
- **Non-banking financial companies (NBFCs)** have also seen accelerated lending, particularly in personal and industrial loans, with improved asset quality.
- **Credit Growth**
  - **Overall Credit Growth:** Bank credit growth reached ₹164.3 lakh crore, growing by 20.2% at the end of March 2024, continuing its momentum into FY25.
  - **Agricultural Credit:** Increased by 1.5 times from ₹13.3 lakh crore in FY21 to ₹20.7 lakh crore in FY24, supported by the Kisan Credit Card (KCC) scheme.
  - **Industrial Credit:** Picked up in H2 FY24, registering 8.5% growth, with significant support to MSMEs through schemes like the Emergency Credit Linked Guarantee Scheme (ECLGS).
  - **Services Sector Credit:** Remained resilient with improvements in commercial real estate and trade sub-sectors.
  - **Personal Loans:** Credit disbursal increased, particularly in housing loans, from ₹19.9 lakh crore in March 2023 to ₹27.2 lakh crore in March 2024.
- **Asset Quality and Profitability**
  - **GNPA Ratio:** Reached a 12-year low of 2.8% at the end of March 2024, down from a peak of 11.2% in FY18.
  - **Capital Adequacy:** CRAR increased to 16.8%, with all banks meeting regulatory requirements.
  - **Profitability:** Net interest margin (NIM) remained robust at 3.6%, with return on equity (RoE) and return on assets (RoA) reaching decadal highs.
- **Dealing with Distressed Assets**
  - Efforts to resolve **distressed assets** include strengthening regulatory frameworks, amending recovery laws, and establishing a public sector asset reconstruction company.
  - The GNPA ratio has reduced significantly to 2.8% in March 2024. Measures such as the **SARFAESI Act and the role of Asset Reconstruction Companies (ARCs)** have contributed to this improvement.
  - The establishment of the **National Asset Reconstruction Company Ltd. (NARCL) and India Debt Resolution Company Ltd. (IDRCL)** aims to enhance the distressed asset market, improve liquidity, and increase competition.
- **Key Takeaways**
  - **Robust Credit Growth:** Across sectors with significant support for agriculture, industry, and personal loans.
  - **Improved Asset Quality:** Reflecting better borrower selection and effective debt recovery.
  - **Increased Profitability:** Supported by higher net interest income and reduced provisions.
  - **Efficient Distressed Asset Management:** Through regulatory frameworks and the establishment of NARCL and IDRCL, improving market liquidity and competition.
- **Overview of the Insolvency and Bankruptcy Code (IBC)**
  - **Solution for Twin Balance Sheet Problem:** IBC addresses stressed NPAs in banks and overleveraged corporates.
  - **Process**: Insolvency professionals manage operations, while the committee of creditors steers the resolution, balancing stakeholder needs.
  - **Outcomes**: Reduced GNPAs and aided corporate debtors in debt resolution, promoting business ease and entrepreneurship.
- **Performance and Impact**
  - **Case Disposals:** 31,394 corporate debtors involving ₹13.9 lakh crore disposed of as of March 2024.

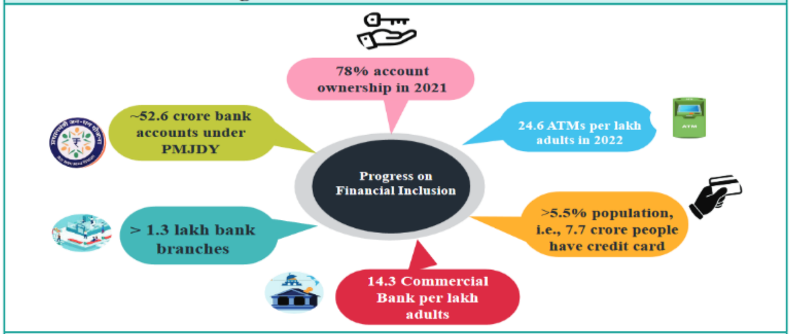
- **Pre-Admission Settlements:** ₹10.2 lakh crore of defaults settled before tribunal admission.
- **Corporate Insolvency Resolution Processes (CIRPs):** 4,131 completed, rescuing 3,171 debtors. Creditors recovered 32% of claims, achieving 85% of fair value and 162% of liquidation value.

- **Market Influence**
  - **Dominant Recovery Route:** IBC accounted for 43% of total SCB recoveries in FY23, enabling over ₹3 lakh crore recovery since FY18.
    - **Business Continuity:** 3,000 businesses continued operations post-resolution, enhancing resource productivity.
- **Enhancements in Corporate Sector**
  - **Performance Improvement:** Resolved firms saw significant gains in tangible assets, market valuation, and employment post-resolution.
  - **Resolution of Large Accounts**: 9 out of 12 large accounts resolved, yielding 54% of claims admitted, significantly reviving the steel sector.
- **Liquidation Process**
  - **Outcomes**: 2,476 CIRPs ended in liquidation, with 77% of debtors defunct initially, valued at 7% of outstanding debt. Around 50 businesses revived, and 586 firms dissolved, reallocating resources efficiently.
- **Financial Service Providers**
  - **Resolution**: Dewan Housing, Srei Equipment Finance, and Srei Infrastructure Finance resolved under IBC framework, recovering around 42% of claims.
- **Government Measures**
  - **Improvements**: Strengthened NCLT infrastructure, filled vacancies, and proposed an integrated IT platform.
  - **Amendments**: Updated regulations to align with market needs and judicial pronouncements.

Financial Inclusion and Digital Financial Inclusion

- **Progress and Goals**
  - **Remarkable Growth:** Adult account ownership increased from 35% in 2011 to 77% in 2021.
  - **Financial Inclusion Strategy:** Shifted focus from households to every adult, promoting account usage through direct benefit transfers (DBTs) and digital payments.
- **Innovations in Digital Payments**
  - **UPI123Pay**: Launched for UPI payments on feature phones.
  - **UPI Lite**: Introduced for low-value transactions up to ₹200 via the BHIM app.
- **Cross-Border Payment Collaborations**
  - **Project Nexus:** RBI's initiative to link India's UPI with FPSs of ASEAN countries and beyond, aiming for live operations by 2026, enhancing retail cross-border payments.

Progress on financial inclusion in India



Source: Pradhan Mantri Jan Dhan Yojana (PMJDY) website, PIB and RBI
Note: Data as of July 2024

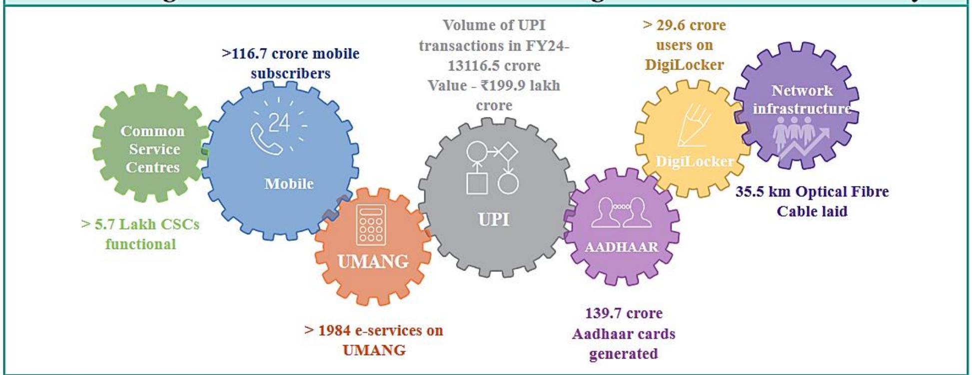
RBI's Financial Inclusion Strategy

- **Components**: Target-based approach, market development, infrastructure strengthening, innovation, technology, last-mile delivery, consumer protection, financial literacy, and awareness.

Digital Financial Inclusion (DFI)

- **Key Enablers and Infrastructure**
  - **Digitalisation of Financial Services:** Essential for reaching excluded and underserved citizens.
  - **Components**: Digital transactional platforms, devices, and retail agents with digital capabilities.

India's Digital Public Infrastructure: Churning the wheels of the economy



Note: Figures as of July 2024,
Source: Dashboard of respective schemes/programmes

  - **Government Initiatives:** Digital India Mission, Make-in-India, and **Digital Public Infrastructure (DPI)** like Aadhaar, e-KYC, UPI, Bharat QR, DigiLocker, e-sign, and Account Aggregator.
- **Impact and Advancements**
  - **COVID-19 Boost:** Accelerated digitisation efforts, resulting in an inclusive, cost-efficient, and responsible DPI.

- **India Stack:** Comprehensive system with three layers—Identity (Aadhaar), Payment (UPI), and Data Governance—facilitating digital transactions and financial inclusion.
- **UPI Growth:** Transaction value increased from ₹0.07 lakh crore in FY17 to ₹200 lakh crore in FY24.
- **Economic Impact:** IMF research shows a 2.2% rise in average economic growth due to increased digital financial inclusion in payments.

Table II.2: India's performance across indicators of financial inclusion and financial education

S.No.	Indicators of Financial Inclusion	2011	2021
1.	Adults with an account at a formal financial institution (%, age 15+)	35	77
2.	Made or received a digital payment (% age 15+)	22*	35
3.	Borrowed from a formal financial institution, older (% age 15+)	8	12
4.	Account, poorest 40% (% age 15+)	27	78
5.	Account, richest 60% (% age 15+)	41	77
6.	Account, female (% age 15+)	26	78
7.	Account, male (% age 15+)	44	78
8.	Youth (age 15-24 years) made or received digital payment	19*	30

Source: World Bank's Global Financial Inclusion Database
Note: *data is for 2014, as data for 2011 is not available

Table II.3: A cross-country comparison of financial inclusion and financial education parameters

	Adults with an account at a formal financial institution (%, age 15+)	Adults saving at a financial institution (% ages 25+)	Borrowed from a formal financial institution, older (% age 25+)
World	**76**	**29**	**32**
South Asia	68	11	12
Brazil	84	23	42
China	89	45	42
India	**78**	**13**	**13**
Indonesia	52	20	15
South Africa	85	37	20

Source: World Bank's Global Financial Inclusion Database, Data for 2021 (latest available)

Microfinance Institutions (MFIs)

- **Role and Reach**
  - **Purpose**: Provide financial services to households, small businesses, and entrepreneurs lacking formal banking access.
  - **Coverage**: Operate in 28 states, five UTs, and 646+ districts. 213 MFIs serve over 532 lakh clients with ₹1.8 lakh crore in outstanding loans as of FY23.
  - **Clientele and Impact**
    - **Focus on Rural and Women**: 74% of clients are rural; 98% are women.
    - **Credit Needs**: Meet the credit needs of low-income households, extend financial services like insurance, and promote financial literacy.
- **Regulatory Support and Performance**
  - **Regulatory Framework:** RBI's New Regulatory Framework (2022) ensures a level playing field and borrower protection.
  - **Sector Health:** Total assets at ₹1.5 lakh crore (FY23), with strong RoA (2.5%) and RoE (12.2%). Median CAR at 26.5%, well above the prescribed 15%.
  - **Recovery and Growth:** Post-pandemic recovery with improved portfolio quality and reduced defaults. SHG-Bank Linkage Programme disbursed ₹1.5 lakh crore in FY23, growing 45.6%.
  - **Financial Inclusion Index:** Improvement from 60.1 in March 2023 to 64.2 in March 2024, indicating progress in access, usage, and quality of financial services in India.

Trends in Indian Capital Markets:

- Despite geopolitical risks, rising interest rates, and volatile commodity prices, Indian capital markets have performed exceptionally well among emerging markets in FY24, highlighting India's strong economic position. This performance is driven by advancements in technology, innovation, and digitisation.
  - **Primary Markets**
  - Primary markets facilitated capital formation of ₹10.9 lakh crore in FY24, a rise from ₹9.3 lakh crore in FY23. Debt issuances contributed 78.8% of this amount.
  - Fund mobilisation through equity, debt, and hybrid modes increased by 24.9%, 12.1%, and 513.6%, respectively. IPOs increased by 66%, raising ₹67,995 crore, with SME IPOs witnessing significant growth. **Qualified Institutional Placements (QIPs)** and rights issues also saw substantial increases.
- **Public Debt Issuances**
  - The corporate debt market grew, with corporate bond issuances reaching ₹8.6 lakh crore.
  - Public issues in the corporate bond market hit a four-year high at ₹19,167 crore.
  - Private placements remained dominant, accounting for 97.8% of total resources mobilised. Outstanding corporate bonds rose by 5.5% YoY to ₹45 lakh crore.
- **REITs and InvITs**
  - REITs and InvITs raised ₹39,024 crore in FY24, more than five times the amount in FY23, driven by government support for infrastructure development.
- **Secondary Markets**
  - The Indian stock market was one of the best-performing markets, with the Nifty 50 index rising by 26.8%. The market capitalisation of Indian stocks surged, positioning India fifth globally by market capitalisation. Retail participation grew, with demat accounts increasing to 1,514 lakh. Mutual funds (MFs) saw a significant rise in assets, with SIP accounts contributing to increased ownership in Indian equities.
- **Retail Participation**
  - Retail activity surged, with individual investors holding 35.9% of equity cash segment turnover. The number of mutual fund folios increased, and SIP accounts doubled net annual flows in three years. Retail investors' participation in derivatives trading rose, reflecting a higher risk appetite.
- **GIFT IFSC**

- GIFT City in Gujarat emerged as a key international financial centre, attracting global capital inflows. It offers a non-resident zone, a unified financial regulator, and a competitive tax regime.
- The banking sector in GIFT IFSC reached a total asset size of USD 60 billion. The funds industry and aircraft and ship leasing sectors also saw substantial growth.

Key Highlights

- **Primary Markets:** Raised ₹10.9 lakh crore; significant IPO and SME platform activities.
- **Corporate Debt:** Issuances reached ₹8.6 lakh crore.
- **REITs and InvITs:** Raised ₹39,024 crore.
- **Stock Market:** Nifty 50 rose by 26.8%; retail participation surged.
- **GIFT IFSC:** Attracted global financial services; significant growth in banking and funds industry.

Developments in the Insurance Sector

- **Global Insurance Market Trends:**
  - **Economic and Inflation Pressures:** The global insurance sector faced challenges due to economic slowdowns and high inflation, leading to increased costs and slower reserve releases. The global insurance market contracted by 1.1% in 2022, with life insurance premiums dropping by 3.1% and non-life premiums rising slightly by 0.5%.
  - **Future Outlook:** Profitability is expected to improve with lower claims post-disinflation and higher returns on interest-sensitive investments.
- **India's Insurance Market Growth:**
  - **Current Status:** India's insurance market is growing rapidly due to economic expansion, an increasing middle class, and regulatory support. Despite a slight moderation in premium growth to 4% in FY23, the market shows promise for substantial growth.
  - **Life Insurance:** Premium growth slowed to 4.1% in FY23, impacted by reduced risk awareness and changes in tax norms. New business premiums contracted, reflecting the pandemic's diminishing effects.
  - **Non-Life Insurance:** Premium growth in the non-life segment moderated to 7.7% in FY23, with health insurance leading at an 11% increase. Agriculture insurance saw flat growth due to lower premium rates but is expected to rise from 2024 onward.
- **Regulatory and Policy Developments:**
  - **Supportive Measures:** The Indian government and the Insurance Regulatory and Development Authority of India (IRDAI) have introduced measures like the "Insurance for All by 2047" mission, reforms in reinsurance regulations, and the simplification of insurance product approvals.
  - **Reforms:** Significant regulatory changes include transitioning to a principle-based approach, reducing approval requirements, and implementing new technology for crop insurance. A focus is on improving customer service and expanding insurance accessibility.
- **Future Projections:**
  - **Growth Estimates:** India's insurance premiums are projected to grow at 7.1% annually over the next five years, outpacing global averages. Life insurance premiums are expected to grow by 6.7% from 2024-28, while non-life premiums may rise by 8.3% annually. Overall, insurance penetration is anticipated to increase from 3.8% in FY23 to 4.5% by 2034.
  - **Challenges:** To achieve these projections, the industry must address customer satisfaction issues, with a significant number of complaints related to mis-selling and claims delays.

Developments in the Pension Sector

- **Global Trends:**
  - **Demographic Shifts:** Falling birth rates are straining pay-as-you-go pension systems, which rely on future taxpayers to support current retirees. Inflation has further eroded confidence in these systems' long-term viability.
  - **Shift in Pension Types:** There is a global transition from defined benefit (DB) to defined contribution (DC) pension schemes, shifting the risk of investment returns and longevity to individuals. Few systems effectively transition from DC accumulation to secure post-retirement income.
- **India's Pension Sector Performance:**
  - **Index Improvement:** India's global pension index value rose from 44.5 in 2022 to 45.9 in 2023 due to better adequacy and sustainability.
  - **Pension Schemes:** India's pension system includes the Employee Provident Fund (EPF) and National Pension Scheme (NPS). Subscriber numbers grew significantly, with APY subscribers increasing from 501.2 lakh in March 2023 to 588.4 lakh in March 2024. APY dominates with 80% of the subscriber base, though most receive a modest ₹1,000 per month.
  - **Coverage and Growth:** Pension coverage as a share of the population rose from 1.2% in FY17 to 5.3% in FY24. Assets under management (AuM) as a percentage of GDP grew from 1.1% to 4% during the same period.
- **Outlook for India's Pension Sector:**
  - **Expansion Potential:** The NPS is expected to expand with more corporate employees and higher-income individuals joining. As India's income and urbanization increase, the need for a steady retirement income will grow.
  - **Financial Literacy:** Promoting pension literacy and financial inclusion is crucial. Encouraging young adults and women to participate in pension schemes will support long-term financial stability.

Regulatory and Financial Stability:

- **Coordination:** The Financial Sector Development Council (FSDC) facilitates regulatory coordination in India, focusing on financial stability, development, and macro-prudential supervision.
- **FSAP and Basel III:** India's compliance with Basel III reforms enhances financial sector resilience. The Financial Sector Assessment Program (FSAP) evaluates financial stability, with the third exercise for India underway for 2023-24.
- **Stress Indicators:** The RBI's Financial System Stress Indicator (FSSI) shows a gradual easing of stress, though some segments like non-bank financial companies (NBFCs) and money markets still face challenges.

Assessment and Outlook

- **Progress and Current State:**
  - **Credit Growth:** Domestic credit to the private sector increased from 50.6% of GDP in 2010 to 54.7% in 2021.
  - **Asset Quality:** Gross and net NPAs of Scheduled Commercial Banks (SCBs) have declined, with improvements in Capital to Risk (Weighted) Assets Ratio (CRAR), Return on Assets (RoA), and Return on Equity (RoE).
  - **Stock Market Stability:** Despite global uncertainties, India's stock markets remain stable.
- **Challenges and Areas for Improvement:**
  - **Balance Sheet Issues:** Banks, non-banks, and corporates have struggled with excesses from the credit boom and subsequent downturn.
  - **Financial Intermediation Costs**: Lowering these costs is crucial for global competitiveness. India has made progress but needs further improvement to lead globally.
- **Future Outlook:**
  - **Vision 2047:** The goal of becoming a developed country by 2047 includes advancing financial services to be highly competitive, widely accessible, and efficient, with low intermediation costs and effective credit and equity funding.
  - **Insurance and Pension Sector:** India's insurance and pension fund assets in GDP are lower compared to the USA and UK, indicating room for growth.
  - **Technological Innovations:** AI, Machine Learning, Decentralized Finance, and the Internet of Things (IoT) are expected to revolutionize the financial sector. India aims to become a fintech hub with high adoption rates and improved digital infrastructure.
  - **Data and Lending:** Emphasis on data-based lending for small businesses, and a unified approach to user data (e.g., KYC) across regulators, is needed.
- **Transformation and Risks:**
  - **Capital Market Role:** The shift from banking to capital markets is growing, bringing new challenges and opportunities. As India's financial sector evolves, it must manage potential vulnerabilities and prepare regulatory and policy responses to support its transformation.

GLOSSARY:

TERMS	MEANINGS
Monetary Policy	Monetary policy refers to central bank activities that are directed toward influencing the quantity of money and credit in an economy.
Cash Reserve Ratio (CRR)	Under CRR, the commercial banks have to hold a certain minimum amount of deposit as reserves with the central bank.
Statutory Liquidity Ratio (SLR)	SLR is a minimum percentage of deposits that a commercial bank has to maintain in the form of liquid cash, gold or other securities
Open Market Operations (OMOs)	OMOs involve purchase and sale of government securities by the Central Bank Authority.
Repo Rate	It is the interest rate at which the central bank of a country lends money to commercial banks. Repo is a money market instrument, which enables collateralised short-term borrowing and lending through sale/purchase operations in debt instruments.
Non-Performing Asset (NPA)	NPA is a loan or advance where interest and/or instalment of principal remain overdue for more than 90 days or two crop seasons for short duration crops or one crop season for long duration crops.

CHAPTER 3: PRICES AND INFLATION: UNDER CONTROL

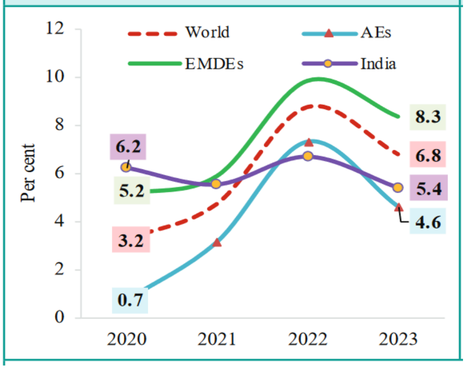
- **Introduction**
- **Domestic Retail Inflation**
- **Core Inflation Dynamics in the Post-pandemic World**
- **Food Inflation**
- **Interstate Variations in Retail Inflation**
- **Outlook and Way Forward**

Introduction:

- Central Government's timely policy interventions and the Reserve Bank of India's price stability measures helped **maintain retail inflation at 5.4 per cent -** the lowest level since the pandemic.
- Central Government **announced price cuts for LPG, petrol, and diesel**. As a result, retail fuel inflation stayed low in FY24.
- In August 2023, the price of domestic LPG cylinders was reduced by ₹200 per cylinder across all markets in India. Since then, **LPG inflation has been in the deflationary zone.**

- Further, Centre lowered the prices of petrol and diesel by ₹2 per litre. Consequently, **retail inflation in petrol and diesel used in vehicles also moved to the deflationary zone.**
- India's policy adeptly steered through challenges, ensuring price stability despite global uncertainties
- **Core services inflation eased to a nine-year low** in FY24; at the same time, core goods inflation also declined to a four-year low.

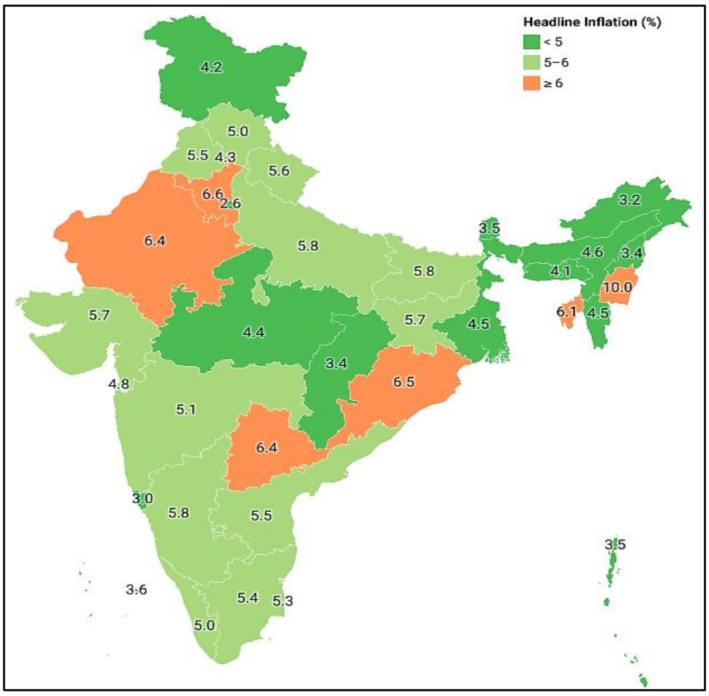
Chart III.1: India's inflation lower than EMDEs in 2023



- In FY24, **core consumer durables inflation declined** due to an improved supply of key input materials to industries.
- Agriculture sector faced challenges due to extreme weather events, depleted reservoirs, and crop damage, which impacted farm output and food prices. Food inflation stood at 6.6 per cent in FY23 and increased to 7.5 per cent in FY24.
- Government took appropriate administrative actions, including **dynamic stock management, open market operations, subsidized provision of essential food items and trade policy measures**, which helping to mitigate food inflation.
- 29 States and Union Territories recorded inflation below 6 per cent in FY24.
- Besides, States experiencing higher overall inflation tend to have a wider **rural-to-urban inflation gap**, with rural inflation surpassing urban inflation.
- Going forward, the RBI projects inflation to fall to 4.5 per cent in FY25 and 4.1 per cent in FY26, assuming normal monsoon and no external or policy shocks.
- IMF forecasts inflation of 4.6 per cent in 2024 and 4.2 per cent in 2025 for India.

Domestic Retail Inflation

- **Moderation in Inflation:**
  - **General Trends:** Retail inflation gradually moderated throughout FY24. In FY23, higher food inflation was the primary driver of Consumer Price Index (CPI) inflation, influenced by the Russia-Ukraine war, domestic heat waves, and uneven rainfall.
  - **Monetary Policy Actions:** The policy repo rate increased from 4% in May 2022 to 6.5% in February 2023, aiming to control inflation while fostering growth. This led to a decline in core inflation from its persistent levels in FY23 to 3.1% in June 2024.
- **Fuel and Energy Prices:**
  - **Global Influence:** A sharp decline in the global energy price index in FY24 kept retail fuel inflation low.
- **Government Measures:**
  - **LPG Price Cuts:** Domestic LPG prices were reduced by ₹200 per cylinder in August 2023 and by an additional ₹100 in March 2024, pushing LPG inflation into the deflationary zone.
  - **Petrol and Diesel:** Prices were reduced by ₹2 per litre in March 2024, resulting in deflationary retail inflation for these fuels.
- **Commodity Prices:**
  - Global Decline: Lower global commodity prices in 2023 helped reduce inflation pressures through the imported inflation channel.
- **Overall Impact:**
  - **Headline Inflation:** The combined effect of low fuel and core inflation, along with government measures and monetary policy, ensured a downward trajectory for headline inflation, despite food price volatility.

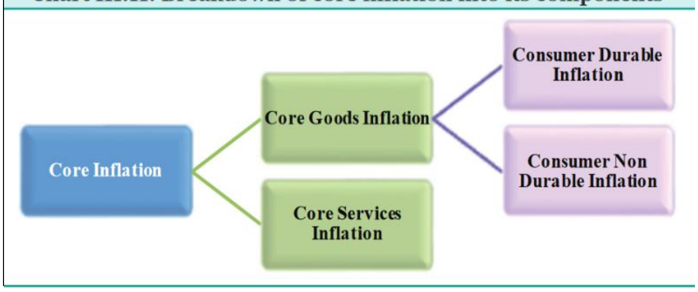


  - **Current Rate:** The retail inflation rate stood at **5.1%** in June 2024.

Core Inflation Dynamics in the Post-pandemic World

- **Core Inflation Trends:**

Chart III.11: Breakdown of core inflation into its components



- **Definition**: Core inflation excludes food and energy from CPI to assess underlying price trends.
- **Recent Decline:** In FY24, core inflation hit a four-year low, driven by declines in both goods and services components.

Historical Context:

- **Pandemic Period:** Inflationary pressures eased in FY22 due to softening food inflation, but core inflation rose to 6% due to international commodity prices.
- **FY23:** Core inflation increased again, influenced by the Russia-Ukraine war and rising food and fuel prices. Core services inflation rose due to higher house rents.

Chart III.5: Retail headline inflation was lowest in FY24 since the pandemic

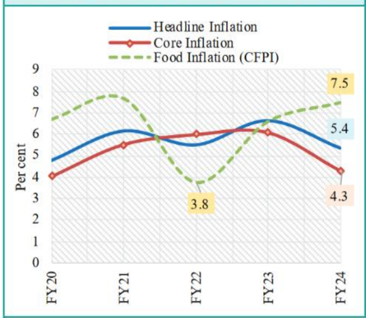
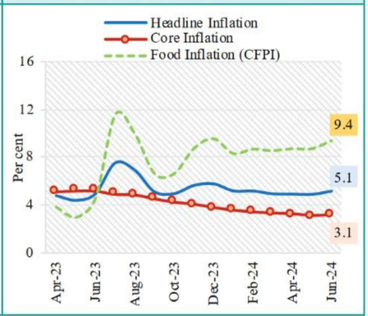


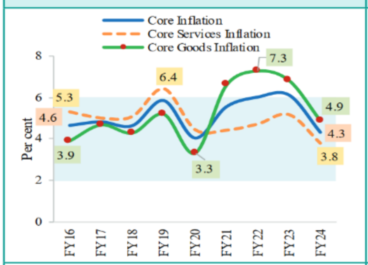
Chart III.6: Declining trend in headline and core inflation



Source: Consumer Price Indices released by CSO, MoSPI

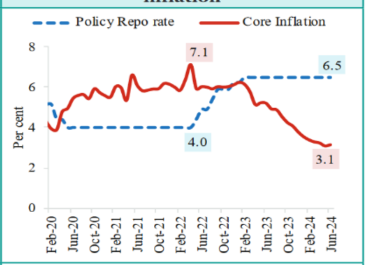
- **FY24 Improvement:**
  - **Core Services Inflation:** Reached a nine-year low.
  - **Core Goods Inflation:** Declined to a four-year low.
  - **Monetary Policy Impact:** The RBI raised the repo rate by 250 basis points since May 2022, reducing core inflation by 4 percentage points between April 2022 and June 2024.

Chart III.12: Core inflation declined to 4 year low in FY24



Source: Consumer Price Indices released by CSO, MoSPI

Chart III.13: Monetary policy transmission evident in easing core inflation



Source: (i) Consumer Price Indices released by CSO, MoSPI, (ii) Various MPC Reports of RBI

- **Consumer Durable Inflation:**
  - **Trends**: Increased between FY20 and FY23, driven by gold prices and clothing costs.
  - **FY24**: Declined due to improved raw material supply but remained high due to record gold prices.
- **Consumer Non-durable Inflation:**
  - **Trends**: Peaked in FY22, then declined sharply in FY23 and FY24.
  - **Drivers**: Changes in transport costs were a significant factor.

Administrative measures to contain food inflation in FY24

Wheat/Atta

- Export of wheat flour, maida and semolina was placed under a prohibited category since August 2022.
- To prevent hoarding and unscrupulous speculation, stock limits were imposed on wheat from June 2023 to March 2024.
- In November 2023, the Government introduced Bharat Atta at a subsidised price of ₹27.50 per kg to make it affordable for consumers.
- Wheat and rice are offloaded periodically from the central pool under open market sale.

Rice/Paddy

- The Government placed the export of broken rice and non-basmati rice under the prohibited category in September 2022 and July 2023, respectively.
- To prevent the export of non-basmati rice under the garb of basmati rice, the floor price for the export of basmati rice was fixed in October 2023.
- To maintain adequate stock and to keep domestic prices under check, the Government imposed a 20 per cent export duty on parboiled rice until 31 March 2024.
- In February 2024, the Government mandated to declare the stock position of rice/paddy by traders/wholesalers, retailers, big chain retailers and processors/millers.
- In February 2024, the Government introduced Bharat Rice at a subsidised price of ₹29 per kg for selling through NAFED, NCCF and Kendriya Bhandar.

Pulses

- Calibrated release of stocks from the buffer of pulses is being done to ensure availability and affordability to consumers.
- To augment domestic availability and moderate the prices of pulses, import of tur and urad has been kept under 'Free Category' until 31 March 2025. Basic import duty on masur was reduced to zero until 31 March 2024.
- The Government launched Bharat Dal in July 2023 to convert chana stock into chana dal for retail disposal at a highly subsidised rate. Later, the Bharat Dal was extended to include Moong Dal and Moong Sabut.
- Besides, India imported considerable quantities of Tur (mainly from Mozambique, Myanmar, Tanzania, Sudan and Malawi), Masur (mainly from Australia, Canada and Russia) and Urad (mainly from Myanmar) in FY24.

Onion

- The onion buffer size under PSF was increased from 1.00 LMT in FY21 to 7.00 LMT in FY24. The stock was released through retail sales, e-Nam auctions and bulk sales in wholesale markets.
- The Government placed a Minimum Export Price on specific varieties of onion from October 2023 to December 2023.
- In December 2023, the export policy of onions was amended from the 'free' to the 'prohibited' category until 31 March 2024.

Edible Oils

- The basic duty on crude palm oil, crude soyabean oil, and crude sunflower oil was cut from 2.5 per cent to nil. The agri-cess on oil was reduced from 20 per cent to 5 per cent. In January 2024, this duty structure was extended until 31 March 2025.
- The reduced basic duty structure on refined soybean oil, refined sunflower oil and refined palm oil was extended until 31 March 2025.
- Free import of refined palm oils was extended till further orders.

Sugar

- In October 2023, the Government extended the date of restrictions on the export of sugar (raw sugar, white sugar, refined sugar and organic sugar) beyond 31 October 2023 until further orders.

Food Inflation

- **Rising Food Prices:**
  - **Global Phenomenon:** Food inflation surged globally over the past two years due to climate change, extreme weather events, and other factors.
  - **India's Situation:** Agriculture was hit by extreme weather, lower reservoir levels, and crop damage, leading to increased food inflation: 3.8% in FY22, 6.6% in FY23, and 7.5% in FY24.
- **Price Pressures on Major Food Items:**
  - **Vegetables and Pulses:** Impacted by adverse weather, crop diseases, and logistic disruptions. For example, tomato prices rose due to seasonal production changes and specific crop diseases.
  - **Onions**: Price spikes due to rainfall during harvesting, delayed sowing, dry spells, and trade measures.
  - **Pulses**: Low production over the past two years, with specific challenges in tur, urad, and gram due to weather and climatic disturbances.
  - **Milk**: Increased prices due to pandemic impacts on inseminations and higher animal feed costs.
- **Government Actions:**
  - **Interventions**: Prompt actions like open market sales, specified retail outlets, and timely imports to ensure supply.
  - **Food Security:** Pradhan Mantri Garib Kalyan Anna Yojana extended for five years from January 2024, providing free food grains to over 81 crore beneficiaries.
- **Global Food Prices:**
  - **Edible Oils:** India relies on imports for over 50% of edible oil needs. Fluctuations in the FAO edible oils price index affect domestic prices. The National Mission on Edible Oils - Oil Palm aims to boost domestic production.
  - **Sugar**: Export restrictions since June 2022 helped stabilize domestic sugar prices despite global volatility.

Chart III.22: Co-movement of global and domestic edible oil prices

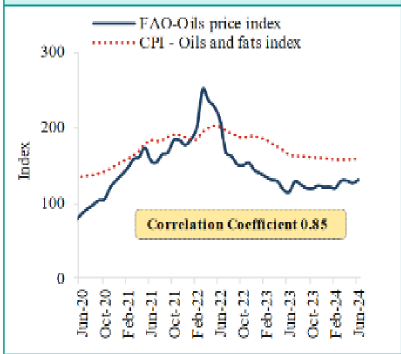
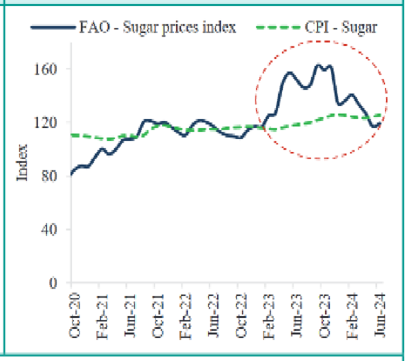


Chart III.23: Export ban on sugar led to stable sugar prices in India

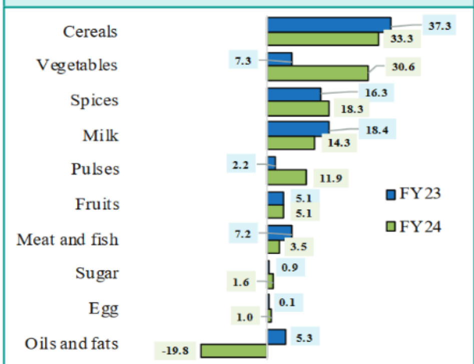


Source: (i) Consumer Price Indices released by CSO, MoSPI (ii) Food price indices data released by FAO

Interstate Variations in Retail Inflation

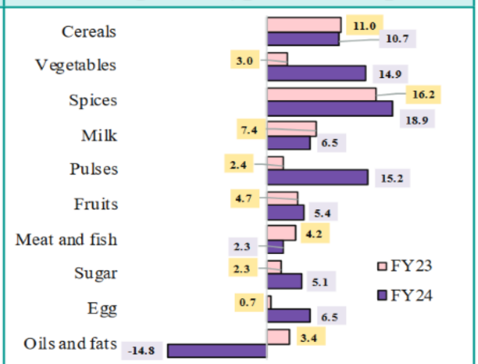
- Consistent with the decline in the all-India average retail inflation rate in FY24 compared to FY23, inflation in most States and Union Territories (UTs) decreased.
- The inflation rate was less than 6 per cent in 29 out of the 36 States and Union Territories.
- **Interstate variations in inflation are more pronounced in rural areas**
  - The rural consumption basket has a much higher weightage of food items (47.3%) than the urban (29.6%). Hence, in the last two years, States that **witnessed elevated food prices also experienced higher rural inflation.**
  - It is also found that the inter-state variation calculated through **standard deviation is higher in rural than urban inflation.**
  - Besides, States with higher overall inflation also tend to exhibit a **wider rural-to-urban inflation gap**, with

Chart III.20: Contribution (%) of food items to food inflation



Source: Survey's calculations using Consumer Price Indices released by CSO, MoSPI

Chart III.21: Elevated inflation rate (%) in vegetables, pulses and spices



Source: Consumer Price Indices released by CSO, MoSPI

rural inflation exceeding urban inflation.
- ○ A scatter plot of overall inflation for different states **against their rural-to-urban inflation ratio reveals a positive correlation**. For instance, the difference between rural and urban inflation in Haryana was much wider compared with Goa, which had relatively lower inflation.

Outlook and Way Forward

- **Projections**:
  - ○ **RBI**: Expects headline inflation to be 4.5% in FY25 and 4.1% in FY26.
  - ○ **IMF**: Projects inflation at 4.6% in 2024 and 4.2% in 2025.
  - ○ **World Bank**: Anticipates a 3% decline in the commodity price index in 2024 and a 4% decrease in 2025, driven by lower energy, food, and fertilizer prices.
- **Positive Factors:**
  - ○ Global Supply and Demand: Increase in global commodity supply and industrial activity.
  - ○ Energy Prices: Significant declines expected in coal and natural gas prices.
  - ○ Fertilizer Prices: Expected to weaken but remain above 2015-2019 levels.
  - ○ Base Metals: Prices projected to rise due to increased industrial activity and clean energy production.

Domestic Measures:

- **Edible Oils:**
  - ○ Increase production of sunflower, rapeseed, mustard, and explore non-conventional oils like rice bran and corn oil.
  - ○ Expand the National Mission on Edible Oils to include other major oilseeds.
- **Pulses**:
  - ○ Expand the cultivation of lentils, tur, and urad to more districts and rice-fallow areas.
  - ○ Promote summer cultivation of urad and moong in irrigated areas.
- **Vegetable Storage:**
  - ○ Assess and improve modern storage facilities for seasonal crops like tomatoes and onions.
- **Price Monitoring:**
  - ○ Link high-frequency price data across departments to monitor price buildup from farm gate to consumer.
  - ○ Expedite the creation of a producer price index for goods and services.
  - ○ Revise the consumer price index with updated weights and item baskets using the latest household consumer expenditure survey.

GLOSSARY:

TERMS	MEANINGS
Retail Inflation	It measures changes over time in general level of prices of goods and services that households acquire for the purpose of consumption.
Headline Inflation	Headline inflation is a composite value that factors in both the core and non-core inflation inputs.
Monetary Policy	Monetary policy refers to central bank activities that are directed toward influencing the quantity of money and credit in an economy.

CHAPTER 4: EXTERNAL SECTOR: STABILITY AMID PLENTY

- **Introduction**
- **Changing Global Trade Dynamics**
- **India's Trade: Resilience Amidst Global Turmoil**
- **Favourable Current Account Balance**
- **Capital Account Balance**
- **International Investment Position**
- **Stable External Debt Position**
- **Outlook and Challenges**

Introduction

- India's external sector remained strong amidst on-going geopolitical headwinds accompanied by **sticky inflation.**
- India's rank in **the World Bank's Logistics Performance Index improved by six places**, from 44th in 2018 to 38th in 2023, out of 139 countries.
- The moderation in merchandise imports and rising services exports have improved India's current account deficit which narrowed 0.7 per cent in FY24.
- India is gaining market share in global exports of goods and services. Its share in global goods exports was 1.8 per cent in FY24, against an average of 1.7 per cent during FY16-FY20.

Table IV.1: Key aspects of India's trade (Calendar year-wise)

	2020	2021	2022
Export performance (in per cent)			
Share in World Merchandise Exports	1.6	1.8	1.8
Share in World Commercial Services Exports	4.1	4.0	4.4
Share in World Merchandise Plus Services Exports	2.1	2.2	2.4
Import Performance (in per cent)			
Share in World Merchandise Imports	2.1	2.5	2.8
Share in World Commercial Services Imports	3.3	3.5	4.0
Share in World Merchandise Plus Services Imports	2.3	2.7	3.0
India's rank in world trade			
Merchandise Exports	21.0	18.0	18.0
Merchandise Imports	14.0	10.0	9.0
Services Exports	7.0	8.0	7.0
Services Imports	10.0	10.0	8.0

Source: DGFT, Monthly Bulletin on Foreign Trade Statistics, April 2024

- India's services exports grew by 4.9 per cent to USD 341.1 billion in FY24, with growth largely driven by IT/software services and 'other' business services.

Table IV.2: Resilient performance of service trade (Values in USD billion)

Sectors	FY23		FY24	
	Exports	Imports	Exports	Imports
Total services	**325.3**	**182.0**	**341.1**	**178.3**
Manufacturing services on physical inputs owned by others	1.5	0.2	1.4	0.1
Maintenance and repair services n.i.e.	0.2	1.9	0.2	1.5
Transport	36.1	40.6	29.2	29.3
Travel	27.0	28.4	33.7	33.7
Construction	3.8	2.8	4.6	2.8
Insurance and pension services	3.3	2.3	3.3	2.9
Financial services	7.8	5.7	8.1	4.6
Charges for the use of intellectual property n.i.e.	1.3	10.6	1.6	15.0
Telecommunications, computer, and information services	152.3	19.8	163.6	20.9
Other business services	80.4	59.7	88.6	59.3
Personal, cultural, and recreational services	3.9	5.5	4.4	6.3
Government goods and services n.i.e.	0.7	1.0	0.6	1.1
Others n.i.e.	7.1	3.4	1.8	0.8

Source: Statistics, India's Overall Balance of Payments-US Dollars, RBI
Note: P stands for Provisional

- India is the **top remittance recipient country globally**, with remittances reaching a milestone of USD 120 billion in 2023.
- India's external debt has been sustainable over the years, with the external debt to GDP ratio standing at 18.7 per cent at the end of March 2024.

Changing Global Trade Dynamics

- **Reconfiguration of Trade Patterns:**
  - US-Mexico Trade: Mexico became the largest goods trade partner of the US in 2023, surpassing China and Canada with USD 798 billion in trade.
  - Vietnam's Trade: US imports from Vietnam doubled from USD 46 billion in 2017 to USD 114 billion in 2023. Vietnam's imports from China also increased significantly.
  - EU Energy Imports: The EU reduced pipeline gas imports from Russia from 150.2 billion cubic meters in 2021 to 42.9 billion cubic meters in 2023, while increasing imports from Norway and the US.
- **Emerging Trade Practices:**
  - Terms like 'decoupling', 'derisking', 'reshoring', 'nearshoring', and 'friendshoring' are shaping new trade dynamics.
  - The slowdown in global trade growth since the global financial crisis is seen as a natural development.
- **Global Trade Trends:**
  - **2023 Decline:** Global trade volume contracted by 1.2%, and the value of world merchandise trade fell by 5%.
  - **Commercial Services Growth:** Trade in commercial services rose by 9% to USD 7.5 billion in 2023.
  - **Digital Services:** Global exports of digitally delivered services increased by 9% to USD 4.3 trillion in 2023.
- **Future Projections:**
  - **Growth Forecasts:** World merchandise trade volume is expected to grow by 2.6% in 2024 and 3.3% in 2025.
  - **Positive Q1 2024 Trends:** Global trade value in goods increased by 1% and services by 1.5% quarter-over-quarter.
- **Geopolitical and Logistical Challenges:**
  - **Shipping Routes:** Disruptions in the Panama Canal and Suez Canal have affected global shipping costs and routes.
  - **Geopolitical Tensions:** Potential spikes in food and energy prices due to geopolitical events and climate disturbances could impact trade.
- **India's Trade Outlook:**
  - India's diversified trade relationships with Asia, Europe, and the US position it to benefit amidst changing global trade dynamics.

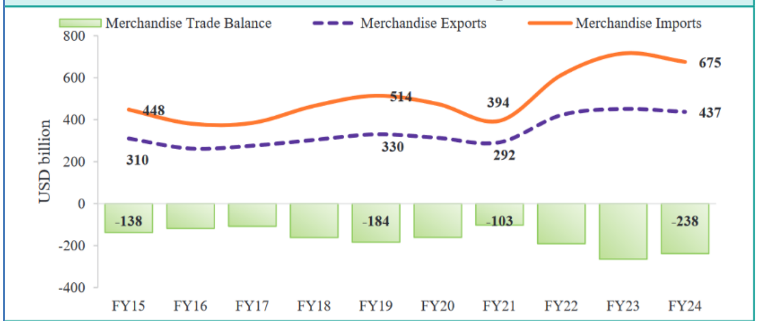
India's Trade: Resilience Amidst Global Turmoil

- **Economic Contribution:**
  - **Trade Openness:** Indicator rose from 37.5 in FY05 to 45.9 in FY24, boosting economic growth by enhancing resource allocation through comparative advantage.
  - **Trade Share in GDP:** Increased from 32.3% in FY05 to 40.8% in FY23.
- **Overall Trade Performance:**
  - **Exports and Imports:** Both saw significant growth until FY20's slowdown due to the pandemic. FY22 marked a recovery, with FY23 exports at USD 776 billion and imports at USD 898 billion.
  - **FY24 Trends:** Exports grew by 0.23%, imports declined by 4.9%. Early FY25 saw exports rise to USD 133.6 billion, with imports at USD 149.9 billion.

Merchandise Trade:

- **Exports**: Affected by geopolitical tensions, but showed positive growth in H2 FY24. Non-petroleum, non-gems & jewellery exports grew by 1.5% to USD 320.2 billion.
- **Imports**: Declined due to lower global commodity prices, narrowing the trade deficit to USD 238.3 billion in FY24.
- **Export Composition Shifts:**
  - **Capital Goods:** Share increased from 16.3% in FY23 to 18.9% in FY24.

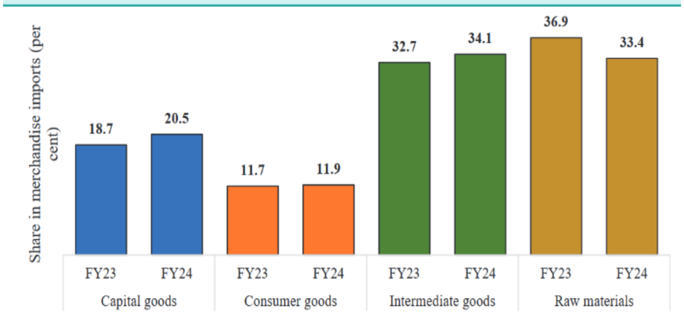
Chart IV.5: India's merchandise trade performance



Source: Export Import Data Bank (Annual), Trade Statistics, Ministry of Commerce and Industry

  - **Consumer Goods:** Share decreased slightly from 48.9% to 47.5%.
  - **Intermediate Goods:** Declined from 30.2% to 28.4%.
  - **Regional Diversification:** Share of top 10 export countries fell from 61.9% in FY2000 to 50.5% in FY24. Major partners now include UAE, Singapore, China, Russia, and Australia.
- **Sectoral Trends:**
  - **POL Exports**: Declined by 13.7% due to lower prices despite volume increase.
  - **Non-POL Exports:** Engineering goods, electronics, and pharmaceuticals saw growth, while agriculture, chemicals, and textiles declined.
  - **Electronics**: Share in merchandise exports rose from 2.7% in FY19 to 6.7% in FY24.
  - **Pharmaceuticals:** Exports grew from USD 19.1 billion in FY19 to USD 27.9 billion in FY24.
- **Merchandise Imports:**
  - **FY24 Decline:** Contracted by 5.7%, mainly due to reduced imports of petroleum, fertilizers, and precious stones. However, capital goods imports increased, indicating industrial investment.

Chart IV.12: Composition of merchandise imports across various classifications



Source: DGCI&S[32]

Product specific success stories of boosting exports:

A series of measures undertaken by the Government have shown a remarkable increase in product-specific exports. Some of the success stories are mentioned below: -

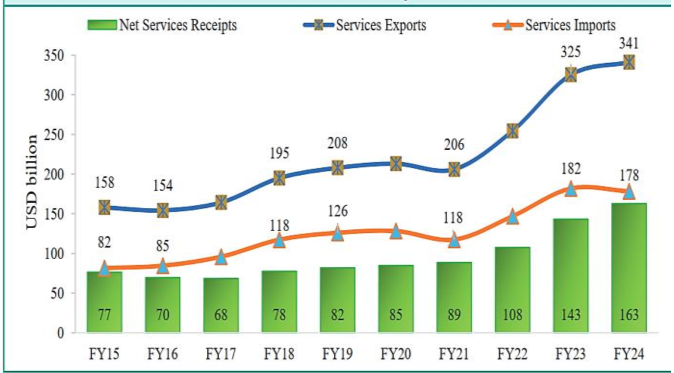
- **Toy Exports:** India's toy industry has long faced challenges in the global trade landscape, consistently being a net importer of toys for many years. However, the industry's exports experienced notable growth in 2023. As per the Directorate General of Commerce Intelligence and Statistics (DGCI&S) data, India's toy exports have shown a rising trend, registering a Compound Annual Growth Rate (CAGR) of 15.9 per cent between FY13 and FY24.18 Rising exports, coupled with declining imports, transformed India from a deficit to a surplus nation in the trade of toys. For over a decade, India heavily relied on China for around 76 per cent of its toy imports. India's import bill for toys from China dropped from USD 214 million in FY13 to USD 41.6 million in FY24, leading to a decline in China's share in India's toy imports from 94 per cent in FY13 to 64 per cent in FY24,19 indicating India's competitiveness in the international toy market.
- **Defence Exports:** India's defence production grew substantially from ₹74,054 crore in FY17 to ₹108,684 crore in FY23, boosting defence exports.22 Between 2015 and 2019, India held the distinction of being the world's second-largest arms importer. The narrative, however, has changed. India has transitioned from an arms importer and found a place in the list of the top 25 arms exporter nations. The defence industry, including the private sector and Defence Public Sector Undertakings (DPSUs), has made tremendous efforts to achieve the highest-ever defence exports. In addition, there has been a rise in the number of export authorisations issued to the defence exporters. From 1,414 export authorisations in FY23, the number has increased to 1,507 in FY24. About 100 domestic companies are exporting a wide range of defence products and equipment such as aircraft like Dornier-228, artillery guns, Brahmos Missiles, PINAKA rockets and launchers, radars, simulators, and armoured vehicles.
- **Footwear Exports:** The Indian footwear and leather industry is an important foreign exchange earner. India is the second-largest global producer of footwear after China, accounting for 13 per cent of global footwear production and 2.2 per cent of global exports. India is the ninth-largest global footwear exporter. As per DGCIS, India's footwear exports have increased from USD 1.9 billion in FY21 to USD 2.5 billion in FY24.
- **Smartphone exports**: India's domestic production and exports of smartphones have been increasing steadily, with significant changes achieved, especially since the launch of the Production Linked Incentive (PLI) scheme in 2020. FY20 marked the first-time domestic production exceeded domestic demand, and smartphones became one of India's top export categories. Exports now provide the primary stimulus for the growth of the sector. A 42.2 per cent increase in exports in FY24 (on a YoY basis) enabled smartphones to rank among India's top five export items considered at six-digit HS product categories.

Services Exports:

- **Robust Growth:** Services exports grew at a CAGR of over 14% from 1993 to 2022, with India's share in world services exports rising from 0.5% to 4.3%.
- **Global Ranking:** India is now the 7th largest services exporter, ranking 2nd in telecommunication, computer, and information services exports.
- **Changing Composition:** Shift from BPOs to high-value-added services. Growth in Global Capability Centres (GCCs) reflected in 'Other Business Services', contributing 26% to services exports in FY24.
- **India's Rising Global Value Chains (GVC) Participation**
  - GVCs involve international production sharing, where production processes are spread across countries, leading to complex products.

- **Historical Context:** GVCs expanded rapidly in the early 2000s during "hyperglobalisation," leading to significant trade gains and cost reductions. Post-2008 GFC, this trend slowed ("slowbalisation") due to events like the China-USA trade war, COVID-19, and the Russia-Ukraine conflict.
- **Recent Trends:** WTO's GVC Development Report 2023 indicates a recovery in GVCs, with increased foreign export inputs and higher participation rates globally.
- **India's GVC Participation:** Rose in the 1990s and 2000s, peaking at 22% in foreign value-added content of exports in 2009. Declined post-GFC but revived due to initiatives like PLI and DEH.
- **Sectoral Impact:** Increased foreign investments in electronics, apparel, toys, automobiles, capital goods, and semiconductors. Notable investments include Apple and Foxconn.

Chart IV.13: Remarkable performance of India's services trade in the last ten years



Source: India's International Trade in Services, RBI

- **Changing Landscape of India's Global Trade Arrangements**
  - Recent FTAs with Mauritius, UAE, Australia, and EFTA (Switzerland, Norway, Iceland, Liechtenstein).
  - Focus on Western and African markets, leveraging India's young demography and middle-class growth.
- **Criteria for FTAs:** Trade complementarity, initial trade volume, and geographic proximity.

Journey of Global Capability Centres in India

- **Origin of GCCs**: In the last couple of years, more than 150 multinationals have set up their GCCs in India. Starting with the humble beginning of offshoring by Texas Instruments by setting up its office in Bengaluru in 1985, India has come a long way to being at the epicentre of GCC growth. In the 1990s, other companies followed suit, and many airlines and technology companies started their operations in India. These were called 'captive centres' earlier and have now come to be addressed as GICs (global in-house centres) or GCCs. In 2012, about 760 GCCs were operating out of India. In 2016, that number went over 1000, and as of March 2023, India houses over 1,600 GCCs.
- Various agencies have projected that the number of GCCs would grow in the coming years, creating jobs as well. According to a PwC report, by 2028, the country is poised to have 2100 GCCs, with the market size of the centres touching USD 90 billion. 38 As per a study by Wizmatic, GCCs presently employ 32 lakh people, primarily engineers and scientists. They generated a combined revenue of USD 46 billion in 2023 and are estimated to generate a total revenue of USD 121 billion by 2030, roughly 3.5 per cent of India's GDP. Out of this, USD 102 billion will represent export earnings.
- **Role of GCCs:** GCCs provide bespoke services in operation, product development and innovation. Today, GCCs operate across all IT, BPO, engineering, and software product development service lines, delivering complex work that requires a significant understanding of business context and imperatives. They have made a mark in key industry verticals such as banking and financial services, software, telecom and semiconductors, with a growing concentration in aerospace, automotive, oil and gas, healthcare and pharma.
- **Government support for GCCs**: Strategic interventions under various initiatives like 'Digital India' and policies for easing doing business have streamlined online approvals and licensing processes for GCCs. Initiatives like streamlined tax regulations and compliance procedures for foreign companies for setting up GCCs, flexible labour laws, and single- window clearance systems for faster approvals have eased the business process. Improved digital infrastructure (high-speed internet, data centres) has been a boon for GCC operations.
- **Partnership with Startups to support global technology needs:** As per a NASSCOM report, GCCs are leveraging India's vital engineering research and development service provider community, its mature start-ups, and its peer-GCC ecosystem. They have established more than 15 incubators, over 40 accelerators, and multiple partner programmes to drive collaboration with Indian start-ups. Healthcare and pharma GCCs have witnessed an increased partnership with start-ups and academia to access newer technology. The GCCs have explored various forms of collaboration, such as innovation labs, hackathons and start-up incubators.
- **Expansion to Tier-II cities:** GCCs are increasingly evaluating tier-II towns to expand their operations, influenced by the reverse migration seen during the pandemic and the cost arbitrage offered by such relatively under-penetrated markets. The recent thrust on infrastructure development in these cities has also added to their appeal. As per a CBRE research report, during H1 of 2023, about 22 per cent of GCC centres were set up in tier-II cities, driven by the availability of existing and fresh talent.
- **Rising global demand for India:** While US and Europe-based MNCs have been establishing their capability centres for a long time, international players from the Asia Pacific region, especially Japan and South Korea,

have begun setting up their R&D/innovation centres in India over the past few years. Although other countries with GCC presence have emerged recently, India remains a GCC favourite in a highly competitive global environment due to its ample talent endowment and cost advantage.

- **The way forward**: Today, GCCs contribute to their parent organisations' success and propel India's economic growth. They account for more than 1 per cent of the country's GDP, and the share is expected to grow further. As more global players eye India to set up their GCC operations, the government has a crucial role in facilitating their entry. Government support for identifying new business models for partnerships, simplifying the entry process, and emphasising trust and data security, among others, will further encourage the location of GCCs in India.

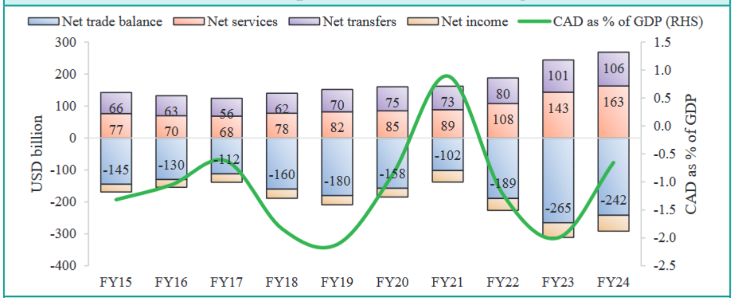
Key FTAs:

- **India-Mauritius CECPA:** First African trade agreement, boosting exports and services with preferential access.
- **India-UAE CEPA:** Significant bilateral trade and investment growth, benefiting labour-intensive sectors and pharmaceuticals.
- **India-Australia ECTA**: Promotes trade in resources and finished goods, opening services markets.
- **India-EFTA TEPA:** Deepens economic engagement with European nations, reflecting commitment to trade liberalisation.
- **Ongoing FTA Negotiations:** Includes potential agreements with the UK, EU, Australia (CECA), Peru, Eurasian Economic Union, and Sri Lanka.
  - **Government Initiatives on Trade Facilitation and Logistics**
    - **Trade Facilitation:** Export targets, export credit insurance, affordable credit for MSMEs.
    - **Technological initiatives**: Electronic cash ledger, online submissions, and digital platforms like ULIP.
      - Postal automation and partnerships enhancing small-scale exports.
  - **Logistics Improvements:**
    - PM GatiShakti National Master Plan and National Logistics Policy (NLP) for efficiency.
    - Enhanced rail, port, and digital infrastructure reducing logistics costs.
    - Improved rankings in the World Bank's Logistics Performance Index and UNESCAP's Digital and Sustainable Trade Facilitation.
    - **GST Impact:** Reduced travel times and logistics costs, increased average truck travel distances, boosting manufacturing ease.
  - **Notable Achievements**
    - **Global Recognition:** Higher scores in global trade and logistics indices, improved release times at ports and airports.
    - **Port and Waterway Development:** Increased port capacities and cargo movement, leveraging India's coastline.
    - **State-Level Improvements:** Positive shifts in logistics performance across states, informed by region-specific insights from the LEADS report.

Favorable Current Account Balance

- The current account records a country's international transactions, primarily trade.
- **Recent Trends:** In FY24, India's Current Account Deficit (CAD) narrowed to USD 23.2 billion (0.7% of GDP) from USD 67 billion (2% of GDP) in the previous year, supported by:

Chart IV.20: Improvement in CAD during FY24



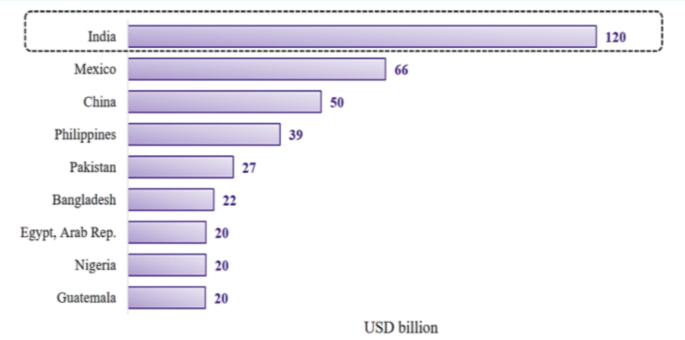
Source: Table No. 196, 'India's Overall Balance of Payments-Quarterly-USD Dollars', External Sector, Handbook of Statistics on the Indian Economy, RBI

- Decline in merchandise trade deficit.
- Rising net services exports.
  - Increasing remittances.
- **Invisibles**
  - **Net Services Receipts:** Increased from USD 143.3 billion in FY23 to USD 162.8 billion in FY24, driven by software, travel, and business services exports.

Remittances:

- Increased from USD 101.8 billion in FY23 to USD 106.6 billion in FY24.
- India received a record USD 120 billion in remittances in 2023, the highest globally.
- Growth due to strong labour markets in the US and Europe and positive demand in GCC countries.
- Forecasted to grow to USD 124 billion in 2024 and USD 129 billion in 2025.

Chart IV.22: India emerged as the top remittance recipient in the World in 2023



Source: World Bank

- **Significance of Remittances**
  - **Economic Stability:**
    - More stable than Foreign Direct Investment (FDI), especially during financial uncertainties.
    - Permanent foreign currency inflows that help finance the merchandise trade deficit.
- **Impact on CAD:**
  - Higher remittances partially offset the goods trade deficit.
  - Contribute significantly to narrowing the CAD, supporting overall economic stability.

Factors influencing inward remittances:

- **Remittances and oil prices:** India meets a large part of its crude oil demand from imports, and a rise in global oil prices is a negative shock to the economy as it leads to a widening of CAD, an increase in inflation, and a weaker rupee. As reported in the Monetary Policy Report (October 2018), "it is estimated that for every USD 1 increase in the price of a barrel of crude, India's current account deficit could widen by USD 0.8 billion".
- **Remittances and exchange rate**: A higher CAD results in an increase in the demand for foreign currency and an increase in the supply of domestic currency as firms and consumers buy more imports. This applies downward pressure to the exchange rate. On the other hand, remitters get better value in rupee terms when it depreciates in terms of foreign currencies, be it for UAE's Dirham, the US Dollar, the British Pound, or any other currency.
- **Outlook**: The outlook for remittance in India for 2024 is strong, with the expectation that remittance growth will moderate to 3.7 per cent, taking remittance levels to USD 124 billion in 2024. The diversification of India's migrant pool between a large share of highly skilled migrants employed mostly in high-income OECD markets, and the less-skilled migrants employed in the GCC markets is likely to lend stability to migrants' remittances in the event of external shocks. India's efforts to link its Unified Payments Interface (UPI) with source countries such as the United Arab Emirates and Singapore are expected to reduce costs and speed up remittances.

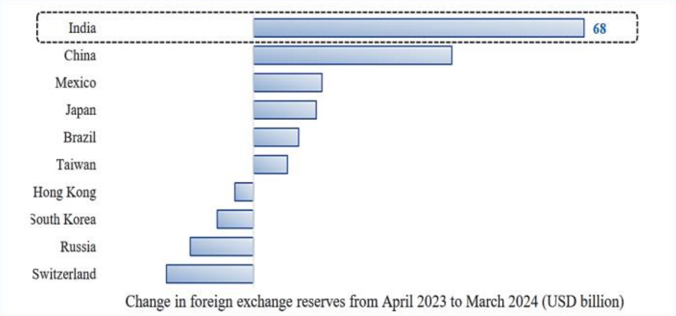
Capital Account Balance

- Stable capital inflows financed the CAD in FY24, with net capital flows at USD 86.3 billion, up from USD 58.9 billion in FY23.
- **FPI Flows:** Significant turnaround in FY24 with net FPI inflows at USD 44.1 billion, highest since FY15, driven by economic optimism and policy reforms.
- **FDI Trends:**
  - **Global Decline:** Global FDI fell 2% to USD 1.3 trillion in 2023.
  - **India's FDI:** Net FDI inflows declined to USD 26.5 billion in FY24 from USD 42.0 billion in FY23. Gross inflows remained stable at USD 71 billion, indicating steady investor interest despite higher repatriation/disinvestment.
  - **Sector Analysis:** FDI in both industry and services sectors has weakened post-pandemic, with digital FDI rising initially but now both digital and physical FDI are declining.

Foreign Exchange Reserves

- **Increase**: FER increased by USD 68 billion in FY24, reaching USD 653.7 billion by June 2024, enough to cover over 10 months of imports and 98% of external debt.
- **Buffer**: FER provides liquidity and insulates domestic economic activity from global spillovers.
- **Exchange Rates FY24 Trends:**
  - INR depreciated by 2.9% against USD.
  - INR was relatively stable with the lowest volatility compared to previous years.
- **Effective Exchange Rates:**
  - NEER depreciated by 0.6%.
  - REER appreciated by 0.8%.

Chart IV.31: India witnessed the most significant increase in foreign exchange reserves holdings in FY24



Source: Bloomberg, RBI for India (Handbook of Statistics on Indian Economy, Foreign Exchange Reserves, Weekly, RBI)

- **Key Points**
  - **FDI Composition:** Shift from physical to digital FDI, with significant growth in digital sectors like software and telecommunications.
  - **Investment Intentions**: Rising in futuristic sectors like AI, renewables, and semiconductors, with strong correlations to future FDI inflows.
  - **Global Competition:** India competes with advanced nations offering subsidies to attract FDI, requiring improvements in education, skill outcomes, and ease of doing business.

China Plus One strategy

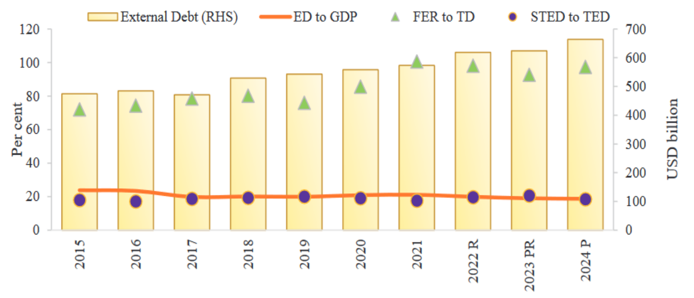
- Over the last five years, a seismic change has occurred in the global manufacturing realm, with major multinational companies, including Apple and others, looking to 'de-risk' themselves from China, which was traditionally known as the 'world's factory'. This shift is primarily due to disruptions caused by COVID-19, growing tensions between the US and China, and rising costs of doing business in China. As a result, several companies have adopted a 'China plus one strategy' to reduce their reliance on China for high-tech electronic products and components. This approach involves supply chain decisions to decrease their risk exposure to China. For example, over 90 per cent of manufacturers in North America surveyed by the Boston Consulting Group in 2023 moved some or all of their production to other countries like Mexico, Thailand, and Vietnam, suggesting a move away from China.

- Can India benefit from this 'China plus one' strategy? The appeal of India lies in its large domestic consumer market, which makes it attractive for companies to set up operations there. In the electronics sector, there is a focus on smartphone manufacturing and assembly. The Government's PLI scheme, including tax breaks and subsidies, plays a significant role in attracting companies. The rise in India's domestic smartphone demand is also a key factor in companies' decisions to invest there. For instance, Apple assembled USD 14 billion worth of iPhones in India during FY24, constituting 14 per cent of its global iPhone production.
- Foxconn has started production of Apple mobile phones in Karnataka and Tamil Nadu. While India may not be an immediate beneficiary of the trade diversion from China, it has witnessed a substantial increase in its electronic exports over time. The implementation of the PLI scheme has been a key driver of this growth. For instance, India's electronic exports to the US have transitioned from a trade deficit of USD 0.6 billion in FY17 to a trade surplus of USD 8.7 billion in FY24, underscoring a significant increase in value addition. Within the electronics sector, the category that has experienced the most growth is mobile phones, with exports to the US rising from USD 2.2 billion in FY23 to USD 5.7 billion in FY24.
- As India looks to deepen its involvement in Global Value Chains (GVCs), it will look to the successes and strategies of East Asian economies. These economies have typically pursued Economic Survey 2023-24 two main strategies: reducing trade costs and facilitating foreign investment. Given that GVCs are designed to minimise costs, countries like Malaysia, Vietnam, and Taiwan have focused on lowering their trade costs over time. For India, improving logistical efficiency has been a key focus, as evidenced by a noticeable rise in India's score on the World Bank's LPI (as discussed in para 4.49). The second strategy, focused on investment facilitation, includes actions to increase and stabilise foreign investment. The PLI scheme, for example, encourages high-quality foreign investment by offering a market-linked incentive system for companies to comply with.
- Over the medium term, India is focusing on integrating its value chain with that of the West, particularly in sectors like renewable energy and advanced technology, including artificial intelligence, semiconductors, and next-generation telecommunications. This strategy is being pursued through agreements such as the Australia-India Free Trade Agreement and the US-India Clean Energy Initiative. As a result, the trading patterns within these sectors are starting to develop. For example, the tariff classifications for environmentally friendly technology, such as solar water heaters, waste recycling devices, and wind turbines, show an increase in exports to the USA from USD 199.2 million in FY20 to USD 326.9 million in FY24. Further, leading American and European companies in the renewable energy sector, such as First Solar, Vesta, and Scatec, have established their operations in India to take advantage of the growing demand for green technologies.

International Investment Position

- **Net IIP Position:** Measures the difference between a country's external assets and liabilities, indicating if it is a net creditor or debtor nation.
- **Assets**:
  - **Total**: USD 1,028.3 billion as of March 2024, up by 11.9% (USD 109.7 billion) from March 2023.
  - **Reserve Assets:** USD 646.4 billion, making up 62.9% of total assets, increased by 11.8%.
  - **Increases in:** Reserve assets, currency and deposits, overseas direct investment, trade credit and advances, and loans.
- **Liabilities:**
  - **Total**: USD 1,390 billion as of March 2024, up by 8.1% (USD 104.3 billion) from March 2023.
  - **Debt Liabilities:** Accounted for 51.1% of total external liabilities.
- **Increases in:** Portfolio investment, loans, direct investment, and other accounts payable.
- **Net Claims of Non-Residents:** USD 361.7 billion as of March 2024, a decline of USD 5.5 billion from March 2023.
- **Coverage:** India's international financial assets covered 74% of its international financial liabilities as of March 2024.

Chart IV.38: India's stable external debt position and vulnerability indicators



Source: 'External Debt of India-Quarterly and India's External Debt-US Dollars (End March)', Statistics, External Sector, External Debt-RBI
Note: R-Revised, PR-Partially Revised, P-Provisional; ED–External Debt, FER-Foreign Exchange Reserves, TED–Total External Debt, STED-Short Term External Debt

- **Stable External Debt Position**
  - India has prudently managed its external debt to maintain sustainable current account deficits and promote non-debt-creating external finance. Key highlights include:
    - **Debt-to-GDP Ratio:** Declined to 18.7% at the end of March 2024 from 19.0% in March 2023.

- **Short-term Debt:** Reduced to 18.5% of total external debt from 20.6% over the same period.
- **Foreign Exchange Reserves (FER):** Cover 97.4% of total debt as of March 2024, offering a significant buffer.

Table IV.3: India's key external debt indicators: A snapshot of stability

(Per cent, unless indicated otherwise)

End-March	External Debt (USD billion)	External Debt to GDP	Debt Service Ratio	Foreign Exchange Reserves to Total Debt	Concessional Debt to Total Debt	Short-Term Debt to Foreign Exchange Reserves	Short-Term Debt (original maturity) to Total Debt
2018	529.3	20.1	7.5	80.2	9.1	24.1	19.3
2019	543.1	19.9	6.4	76.0	8.7	26.3	20.0
2020	558.4	20.9	6.5	85.6	8.8	22.4	19.1
2021	573.4	21.1	8.2	100.6	9.0	17.5	17.6
2022 R	618.8	19.9	5.2	98.1	8.3	20.0	19.7
2023PR	624.1	19.0	5.3	92.7	8.2	22.2	20.6
2024 P	663.8	18.7	6.7	97.4	7.5	19.0	18.5

Source: Ministry of Finance
R: Revised, PR: Partially Revised; P: Provisional

Outlook and Challenges

- India's external sector shows a positive outlook, with a narrowing trade deficit and growing service exports. However, challenges include:
- **Demand Decline from Major Trading Partners:**
  - US import volume dropped by 1.7% in 2023.
  - Rising protectionism poses a risk to trade recovery.
- **Increased Trade Costs:**
  - Disruptions in shipping routes, such as the Red Sea and Panama Canal, increase costs and journey times.
  - Fertiliser imports from the Middle East are particularly affected.
- **Commodity Price Volatility:**
  - Fluctuations in prices of oil, metals, and agricultural products impact trade balance and inflation.
  - Global growth downturns can further pressure industrial commodity prices.
- **Trade Policy Changes:**
  - Export restrictions and geopolitical developments can limit India's market access.
  - WTO reported significant increases in export restrictions, affecting global trade dynamics.

TERMS	MEANINGS
Sticky Inflation	Sticky inflation refers to a persistent economic phenomenon where prices for goods and services do not adjust quickly to changes in supply and demand dynamics.
Remittances	A remittance is a sum of money sent to another party, usually in another country.
Foreign Portfolio Investment (FPI)	FPI is securities and other assets passively held by foreign investors, allowing individuals to invest overseas.
Foreign direct investment (FDI)	Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country.
Invisibles	Invisibles in economics refer to the trade of services between countries, as opposed to physical goods (visibles).

CHAPTER 5: MEDIUM TERM OUTLOOK: A GROWTH VISION FOR NEW INDIA

- **Introduction**
- **Key Areas of Policy Focus in the Short to Medium Term**
- **Growth Strategy for Amrit Kaal: Strong, Sustainable and Inclusive**
- **Outlook in the Medium Term**

Introduction:

- Key areas of policy focus in the short to medium term - **job and skill creation, tapping the full potential of the agriculture sector, addressing MSME bottlenecks, managing India's green transition, deftly dealing with the Chinese conundrum, deepening the corporate bond market, tackling inequality and improving our young population's quality of health.**
- Amrit Kaal's growth strategy is based on **six key areas** - boosting private investment, expansion of MSMEs, agriculture as growth engine, financing green transition, bridging education-employment gap, and building capacity of States.
- For the Indian economy to grow at 7 per cent plus, a tripartite compact between the Union Government, State Governments and the private sector is required.

Key Areas of Policy Focus in the Short to Medium Term

- **Productive Employment:**
  - India's workforce: 56.5 Crore (45% in agriculture, 11.4% in manufacturing, 28.9% in services, 13% in construction).
  - Need for 78.51 lakh non-farm jobs annually.
  - Improve productivity in agriculture, and promote organized manufacturing and services for job creation.
- **Skill Gap Challenge:**
  - 65% of the population is under 35; about 51.25% are employable.
  - **Challenges**: Public perception, lack of coordination, inconsistent certification, paucity of trainers, sectoral and spatial mismatch, low apprenticeship coverage, outdated curricula, declining female labor participation, predominance of unorganized sector employment, limited entrepreneurship inclusion, and access to finance.
- **Agriculture Sector:**
  - **Issues**: Food price inflation, price discovery, disguised unemployment, land fragmentation, crop diversification.

- **Solutions**: Upgrade technology, modern skills, enhance marketing avenues, adopt innovations, reduce wastage, improve agriculture-industry linkages.
- **MSMEs**:
  - **Role**: Key in economic trajectory (Germany, Switzerland, Canada, China).
  - **Challenges**: Regulatory and compliance requirements, access to affordable funding.
  - **Solutions**: Sunset clauses for incentives, affordable credit schemes like Pradhan Mantri Mudra Yojana and Credit Guarantee Fund.
- **Green Transition:**
  - **Targets**: Reduce GHG emissions by 33-35%, increase non-fossil fuel electricity to 40%, enhance forest cover.
  - **Challenges**: E-Mobility policy consistency, grid stability, storage technology, land and capital usage, nuclear energy role, dependence on China for critical minerals, phasing out coal, impact on tax revenues.
  - **Financial needs:** USD 1.4 trillion for net-zero by 2070, 2.5% of GDP for green finance.
- **India-China Economic Relations:**
  - **Challenges**: Dependence on China for critical minerals, integrating into global supply chains without heavy reliance on China.
- **Corporate Bond Market:**
  - Need for an active market for financing growth.
  - Current size small compared to other Asian markets.
  - Lacks depth with limited issuer and investor base.
- **Inequality**:
  - Top 1% earns 6-7% of total income, top 10% earns one-third.
  - Focus on job creation, formal sector integration, female labor force expansion.
  - Future tax policies on capital and labor incomes.
- **Health of Young Population:**
  - Unhealthy diets are responsible for 56.4% of disease burden.
  - Increase in processed food consumption, physical inactivity, and obesity.
  - Need for balanced and diverse diets to reap demographic dividend benefits.

The Chinese Manufacturing Juggernaut: A Threat to EMEs

It is increasingly seen that emerging economies are introducing import restrictions on Chinese goods while accelerating a push for free trade elsewhere to protect their domestic manufacturers.

- These protectionist measures directed against Chinese products are emerging due to the threat that the overcapacity in China's manufacturing sector is posing to other countries, especially in the EMDEs. China's manufacturing trade surplus has been ballooning since 2019 due to weak domestic demand and expanding industrial capacity. The mismatch between domestic supply and demand in China has widened in the past few years, leading to Chinese companies exploring additional markets overseas. This is leading to prices collapsing globally and driving other national producers out of business, especially in product categories where China dominates. For instance, the poor performance of China's property sector since 2021 created significant overcapacity leading to a collapse in global steel prices, which now puts significant pressure on producers in India, Vietnam, Brazil, and other countries. Estimates show that China's steel product exports are surging again—by 27 per cent so far in 2024—after 35 per cent growth last year.
- China's dominance over a large number of product categories creates a risk of economic coercion, where the government restrains access to crucial inputs for political leverage. This is most evident in the case of the export of rare earth and critical minerals which are of high priority in the green transition efforts of countries. China's dominance also has led to monopolistic practices which has considerably limited the space for new entrants to emerge as new manufacturing powers. Recent research by Rhodium Group observes that "The Chinese government can encourage companies to partner together, merge and consolidate, coordinate to gain market shares, raise prices, restrict access to products where they already have substantial market power, or favour domestic firms in their suppliers and client networks."
- It is also interesting to note that "while China still needs to import high-tech products from rich industrialized economies, it imports very few low-tech goods, where developing countries would have a comparative advantage. This is largely a result of deliberate policy interventions, which have intensified in recent years."
- All these above factors have together played a key role in constraining the manufacturing sector of EMDEs. While EMDEs are resorting to import restrictions as a policy option to deal with the Chinese challenge, it is pertinent to note that some Chinese goods are so cheap that no amount of tariff can reduce their price competitiveness. Further, some Chinese products can move past these restrictions without being noticed since they are packaged in third countries. Meanwhile, China has started retaliating against these import restrictions which has further complicated the manufacturing landscape for EMDEs. For instance, in response the India's anti-dumping probe against Chinese entities, China has been quietly blocking India's access to solar equipment. Given this, dealing with the Chinese manufacturing juggernaut will test the policy mettle of EMDEs. Developing countries will have to figure out a way of meeting the import competition from China and, at the same time, boosting domestic manufacturing capabilities, sometimes with the collaboration of Chinese investment and technology.
- As the Rhodium group research points out, Brazil and Turkey recently raised tariffs on the import of E-Vehicles

from China but, at the same time, took steps to attract Chinese FDI in the sector.

- India has a similar decision to make, given its large bilateral trade deficit with China. It makes India vulnerable to potential abrupt supply disruptions. Replacing some well-chosen imports with investments from China raises the prospect of creating domestic know-how down the road. It may have other risks, but as with many other matters, we don't live in a first-best world. We have to choose between second and third-best choices.
- In sum, to boost Indian manufacturing and plug India into the global supply chain, it is inevitable that India plugs itself into China's supply chain. Whether we do so by relying solely on imports or partially through Chinese investments is a choice that India has to make.

India's expanding obesity challenge: Observations from National Family Health Survey (NFHS-5), 2019-2021

Obesity is emerging as a serious concern among India's adult population. According to National Family Health Survey 5 (NFHS-5), the percentage of men facing obesity in the age bracket 18-69 has increased to 22.9 per cent in NFHS-5 from 18.9 per cent in NFHS-4. For women, it has increased from 20.6% (NFHS-4) to 24.0% (NFHS-5). The spatial distributionof India's obesity challenge as per NFHS-5 vis-à-vis NFHS-4 reveals the following:

- In Tamil Nadu, for men, it is 37.0% (vs. 28.2% in NFHS-4), and it is 40.4% for women (vs. 30.9% in NFHS-4).
- In Uttar Pradesh, for women, it has gone up to 21.3% (NFHS-5) from 16.5% (NFHS-4), and for men, it has gone up to 18.5% (NFHS-5) from 12.5% (NFHS-4).
- In Kerala, for women, it has gone up to 38.1% (NFHS-5) from 32.4% (NFHS-4), and for men, it has gone up to 36.4% (NFHS-5) from 28.5% (NFHS-4).
- In West Bengal, for women, it has gone up to 22.7% (NFHS-5) from 19.9% (NFHS-4), and for men, it has gone up to 16.2% (NFHS-5) from 14.2% (NFHS-4).
- In Karnataka, the increase over NFHS-4 is 7% points for women (30.1% vs. 23.3%) and nearly 9% points (30.9% vs. 22.1%) for men.
- In Andhra, it is 36.3% for women (vs. 33.2%). However, for men, the number has dropped to 31.1% (vs. 33.5%).
- At 30.1% and 32.3%, respectively, the proportion of women and men who are overweight in Telangana has increased from 28.6% for women to 24.2% for men in NFHS-4.
- In Maharashtra, for women, it has remained the same across NFHS-4 and NFHS-5 at 23.4%, while for men, it has gone up to 24.7% (NFHS-5) from 23.8% (NFHS-4).
- In Madhya Pradesh, for women, it has gone up to 16.6% (NFHS-5) from 13.6% (NFHS- 4), and for men, it has gone up to 15.6% (NFHS-5) from 10.9% (NFHS-4).
- In Jharkhand, for women, it has gone up to 11.9% (NFHS-5) from 10.3% (NFHS-4), and for men, it has gone up to 15.1% (NFHS-5) from 11.1% (NFHS-4).
- In Bihar, for women, it has gone up to 15.9% (NFHS-5) from 11.7% (NFHS-4), and for men, it has gone up to 14.7% (NFHS-5) from 12.6% (NFHS-4).
- In the NCT (Delhi), the proportion of women with obesity is 41.3% (vs 33.5%), and for men, it is 38.0% (vs 24.6%).

At the All-India level, a quick perusal of the data shows that the incidence of obesity, as per NFHS5, is significantly higher in urban India than in rural India (29.8% vs. 19.3% for men and 33.2% vs. 19.7% for women). Combined with an ageing population in some states, obesity presents a concerning situation. Preventive measures must be taken to enable citizens to have a healthier lifestyle. Here, it is pertinent to note that the NFHS-5 Survey overlapped with the Covid-19 pandemic. Therefore, with restrictions on outside activities and lockdowns, sedentary lifestyles may have become more entrenched, resulting in the obesity proportion going up much more in NFHS-5. If the trend reverses in NFHS-6, it will be a healthy sign.

Growth Strategy for Amrit Kaal: Strong, Sustainable and Inclusive

1. **Boosting Private Sector Investment:**
   - **Focus Areas:** Machinery & Equipment, Intellectual Property products.
   - **Government Role:** Create an enabling environment, address resource bottlenecks, regulatory impediments.
   - **Initiatives:** Aatmanirbhar packages, Production Linked Incentive (PLI), National Infrastructure Pipeline (NIP), National Monetisation Pipeline (NMP), India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), National Single Window System (NSWS).
   - **Goal:** Increase investment to 35% of GDP.
2. **Growth and Expansion of India's Mittelstand (MSMEs):**
   - **Contribution:** 30% of GDP, 45% of manufacturing output, 11 crore employment.
   - **Support Measures:** 5 lakh crore Emergency Credit Line Guarantee Scheme (ECLGS), 50,000 crore MSME Self-Reliant India Fund, revised MSME classification, RAMP program, Udyam Assist Platform (UAP).
   - **Future Steps:** Deregulation, infrastructure development, targeted training, export strategy via initiatives like 'Make in India Mittelstand (MIIM).'
3. **Removing Agricultural Growth Impediments:**
   - **Sector Importance:** Food and nutrition security, climate change adaptation, sustainable resource use.
   - **Potential:** Gainful employment in agriculture, horticulture, livestock, fisheries, dairy, food processing.
   - **Approach:** Re-imagine agriculture to enhance food, physical, and economic security.

A farmer-friendly policy framework

How do we let the markets function in the interests of the farmer? What can governments do?

(1) By not banning futures or options markets at the first sign of price spikes. These markets do not hurt consumers or farmers at all times. The bar for such bans must be set so high that their recourse must be almost non-existent. The intelligent regulatory design of such markets can obviate the need for bureaucratic interference in the futures market for agricultural commodities.

(2) By invoking export bans only under exceptional circumstances and allowing domestic consumers to substitute, especially if the agricultural commodities in question are not essential consumption items such as foodgrains. Even in those cases, the government can allow substitution effects to play out before responding to domestic supply concerns. For example, if sugar prices rise, consumers can consume less of it or switch to jaggery. It may even be a good thing for their health. In general, it is far easier for consumers to substitute or pare back consumption than for farmers to endure big losses because of ad hoc export bans or huge imports. Farmers should be allowed to benefit from higher international prices. Bans on food exports also need to be telegraphed in advance lest hunger and famine elsewhere in the world worsen.

(3) By re-examining the inflation-targeting framework. Food constitutes a very high portion of the consumer price index in developing countries. That is par for the course. Hence, when central banks in developing countries target headline inflation, they effectively target food prices. So, when food prices rise, inflation targets come under threat. Therefore, the central bank appeals to the government to bring down the increase in the prices of food products. That prevents farmers from benefiting from the rise in terms of trade in their favour. India's inflation targeting framework should consider targeting inflation, excluding food. Higher food prices are, more often, not demand-induced but supply-induced. Short-run monetary policy tools are meant to counteract price pressures arising out of excess aggregate demand growth Deploying them to deal with inflation caused by supply constraints may be counterproductive. Therefore, it is worth exploring whether India's inflation targeting framework should target the inflation rate excluding food. Hardships caused by higher food prices for poor and low-income consumers can be handled through direct benefit transfers or coupons for specified purchases valid for appropriate durations.

(4) Specifically, with reference to India, by increasing the Total Net Irrigated Area. Several states are well below the national average. Investment in irrigation may make monsoon-watching a non-event, but it would enhance farmers' income security. Not only that, as in the case of power generation plants where the plant load factor has scope for improvement, India's irrigation efficiency can also improve. It is only 30-40 per cent for surface water and 50-60 per cent for groundwater. This calls for better water utilisation farming practices and technologies like drip and fertigation. It will help raise productivity and cut down water and fertiliser use by almost 50 per cent.

(5) Besides these, by making farming consistent with climate considerations. India produces too much foodgrains and sugar, too few pulses, oil seeds, and other cash crops. Grains such as rice and sugarcane are water-guzzling crops. Water criticality is escalating in India. Further, among foodgrains, the cultivation of paddy gives rise to methane emissions. Its methane emission potential is considerable. Sometimes, and under some conditions, Direct Seeded Rice (DSR) or even organic farming for some crops could help save water and chemical fertilisers. It is also important to recognise that India has achieved relative self-sufficiency in basic staples and has emerged as the largest exporter of rice in the world (almost 40 per cent of world exports in 2022-23). Exporting 20 MT of rice means at least exporting 40 billion cubic meters of water. At home, the Food Corporation of India currently has rice stocks that are more than three times the buffer stock norm. Excessive production of rice results from large subsidies for power for irrigation, water, and fertilisers. The time has come to promote 'crop-neutral incentive structures.' That would imply that pulses, oilseeds, and millets that save on power, water, and fertilisers need to be rewarded with equivalent subsidies embedded in rice production.

4. **Securing Financing for Green Transition:**
   - **Funding Needs:** Attract global green capital (sovereign wealth funds, global pensions, private equity).
   - **Methods:** Address investment barriers, foster sustainable finance, diversify funding sources, utilize blended finance.
   - **Institutions:** Sector-specific financial institutions, International Financial Services Centres Authority (IFSCA), multilateral development banks.
5. **Bridging the Education-Employment Gap:**
   - **Focus:** Skill development amid global megatrends (automation, climate action, digitalisation).
   - **Policy:** National Policy on Skill Development & Entrepreneurship (NPSDE), National Education Policy (NEP) 2020 and 2023.
   - **Industry Role:** Collaborate with academic institutions to enhance skilling.
6. **Building State Capacity and Capability:**
   - **Achievements:** Infrastructure delivery, direct benefit schemes.
   - **Needs:** Re-imagine civil service training, expand lateral entry, ensure accountability and professionalism.
   - **Goals:** Adapt to global changes, enhance policy design and implementation.

This six-pronged strategy aims to achieve strong, sustainable, and inclusive growth, making people's lives better and fulfilling their aspirations by 2047.

Mission Karmayogi's holistic approach to building state capacity in India

The First and Second Administrative Reforms Commission (ARC) reports had identified several barriers to improved capacity of the civil service. These included departments implementing policies in silos,23 poor communication, strict information boundaries, and lack of collaboration which resulted in duplicate efforts and inefficient resource allocation. Undergirding this structure was a personnel management system that hampered the capacity and motivation of civil servants to work efficiently. Under-resourced training institutes and infrequently updated training programs did not provide officials with the skills and specialisation they needed to grow professionally and meet the changing needs of public administration. Performance management systems were not equipped with the proper mechanisms to assess, reward, and improve performance, and to align officials' capacities with the needs of the system. Challenging work environments and lack of mentorship led to reduced motivation to excel at work. Addressing these problems has required looking beyond a single, definitive solution. In their seminal paper on the challenges of policy-making in diverse societies, Rittel and Webber (1973) propose that problems of public policy planning are 'wicked': they are inherently complex, multi-faceted, and resistant to straightforward solutions. They comprise multiple smaller problems and concern multiple actors, often with competing priorities. There is no clear point at which a problem of this nature can be said to be solved and no ideal solution for it.

The government has responded to the wicked challenge of building state capacity by launching Mission Karmayogi, which deconstructs the problem into more tractable sub-components. The program endeavours to enhance state capacity using the 'Workforce-Work-Workplace' framework to address each level of the civil service as well as the linkages and interactions between them. 30 It provides a multi-pronged solution encompassing:

- Building the capacity of the Workforce centred on their roles and associated competency requirements at multiple career stages.
- Improving the quality of the Work through role-based human resource management and decision-making.
- Enhancing the Workplace through mentorship, better managerial practices, and improved physical infrastructure.

By connecting workplace roles and workers' competencies, Mission Karmayogi builds a much-needed bridge between capacity building and human resource management systems. Competencies are the attitudes, skills, and knowledge that are essential for a civil servant to perform their role successfully. As officials evolve in their careers, the competencies they are required to possess also evolve. Through Mission Karmayogi, the government is delineating the competency requirements for all civil servants in terms of their roles and duties, as well as the four Gunas or overarching virtues of civil servants as highlighted in the Karmayogi Competency Model. 31 Competencies then become a key tool for enhancing the performance of civil servants. Once competencies have been specified, they can be assessed using several measures, including workplace performance assessments, data from digital MIS systems, and 360-degree feedback mechanisms. This would enable the government to provide calibrated capacity-building support and identify the right person for the right role in government.

Capacity-building programmes, both in terms of pre-service training and ongoing professional development, can be designed to build the specific competencies that a civil servant needs to perform their role well. This also creates the space to expand beyond conventional training programs to draw on a range of approaches that are grounded in evidence-based adult learning principles, such as immersion programs, exposure visits, case studies (through the use of Amrit Gyaan Kosh), and self-paced and technology-enabled learning. To achieve this at scale, technology-enabled capacity building will allow officials across cadres, states, and seniority to steer their professional development. The iGOT Karmayogi platform is rapidly shaping into a central node that enables civil servants to access tailored and need-based capacity-building modules, track their competency requirements and gaps, and share knowledge and learnings across departments.

In tandem with capacity building, Mission Karmayogi is also introducing a role-based human resource management system that would allow the government to match civil servants with roles based on the competencies they possess and the requirements of the role. Decision-making around postings, transfers, and promotions can then be guided by civil servants' demonstrated competencies and experience. This is a significant shift from the current rule-based approach, which will generate better incentives for performance among civil servants. Access to the universe of capacity-building resources - and not just what is considered relevant for their level - will enable civil servants to proactively plan their professional journeys within government in a manner that aligns with their areas of interest and expertise.

Outlook in the Medium Term

Resilient Growth:

- India has demonstrated resilience over the past decade by managing multiple global crises with effective strategies and structural reforms.
- Strong institutions have played a key role in overcoming challenges.
- Structural reforms have set India on a growth path, making it poised to become the world's third-largest economy.

IMF Growth Forecast:

- The IMF forecasts India's growth at 6.8% for 2024-25, driven by strong domestic demand and a rising working-age population, making India the fastest-growing G20 economy.

Economic Transition:

- Transition from a low-income to a low-middle-income country.
- Rising aspirations require continuous adaptation and innovative approaches within India's democratic framework.

Six-Pronged Growth Strategy:

1. **Private Sector Capital Formation:**
    - Ensure organic and steady growth in jobs and income through private sector investment.
2. **Financing Green Transition:**

- Leverage public-private partnerships and innovative financing instruments to mobilize private capital for green initiatives.

3. **MSME Development:**
   - Focus on deregulation, enhancing connectivity, and developing an export strategy to expand market exposure and scale.
4. **Agricultural Potential:**
   - Implement intelligent, environmentally sustainable policies to harness agriculture as an engine of growth and equity.
5. **Education and Skill Policies:**
   - Align education and skill policies with a focus on outcomes, learning from global experiences like the EU Cohesion Policy.
6. **Enhancing State Capacity:**
   - Invest in state machinery to sustain and accelerate progress, ensuring effective implementation of growth strategies.

Historical Reforms:

- Structural reforms since 2014, including banking system strengthening, Insolvency and Bankruptcy Code, Goods and Services Tax, and infrastructure expansion, have laid the foundation for sustained growth.

Vision for Viksit Bharat @2047:

- Prime Minister Modi emphasizes "Sabka Prayas" (everyone's effort) as essential for achieving a developed India.
- Collective effort and participation of all citizens are crucial for realizing national goals.

These strategies aim to build on past reforms and drive strong, sustainable, balanced, and inclusive growth towards the goal of a developed India by 2047.

Glossary:

TERMS	MEANINGS
Mittelstand	• Refers to a group of stable business enterprises in Germany, Austria and Switzerland that have proved successful in enduring economic change and turbulence. • It is usually defined as a statistical category of small and medium-sized enterprises with annual revenues up to 50 million Euro and a maximum of 500 employees.
Green Transition	Refers to the global shift from a fossil fuel-dependent economy to one that is powered by renewable energy sources and characterized by sustainable practices.
Demographic dividend	It refers to the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population is larger than the non-working-age share of the population"

CHAPTER 6: CLIMATE CHANGE AND ENERGY TRANSITION: DEALING WITH TRADE-OFFS

- **Introduction**
- **Present Status of India's Climate Action**
- **Adaptation is Critical for India**
- **Low Carbon Development and Energy Composition**
- **Putting in Place a Market Framework to Price Carbon: Indian Carbon Market**
- **International Commitments on Climate Finance: The Developments**
- **India's International Initiatives to Address Climate Change Issues**

Introduction:

- A report by **the International Finance Corporation** recognizes India's efforts to achieve committed climate actions, highlighting **that it is the only G20 nation in line with 2-degree centigrade warming.**
- India has made significant progress on climate action in terms of an increase in its renewable energy capacity and improvement in energy efficiency.
- As of 31 May 2024, **the share of non-fossil sources** in the installed electricity generation capacity has reached **45.4 per cent.**
- Further, the country has **reduced** the emission intensity of its GDP from 2005 **levels by 33 per cent** in 2019.
- India's GDP between 2005 and 2019 has grown with a Compound Annual Growth Rate (CAGR) of about 7 per cent, whereas the emissions grew at a CAGR of about 4 per cent.
- The Government has launched several clean coal initiatives, including the **Coal Gasification Mission**.
- Total annual energy savings of 51 million tonnes of oil equivalent translates to a total annual cost savings of ₹1,94,320 Crore and emissions reduction of around 306 million tonnes.
- Expanding renewable energy and clean fuels will increase demand for land and water.
- Government issued sovereign green bonds amounting to ₹16,000 Crore in January-February 2023 followed by ₹20,000 Crore in October-December 2023.

Present Status of India's Climate Action

National Action Plan on Climate Change (NAPCC):

- India has adopted a mission-mode approach to climate change with the NAPCC.
- **NAPCC includes nine national missions:** solar, water, energy efficiency, forests, sustainable habitat, sustainable agriculture, sustaining the Himalayan ecosystem, strategic knowledge for climate change, and human health.
- 34 States and Union Territories (UTs) have operational State Action Plans on Climate Change (SAPCCs), outlining priority actions.

Significant Progress:

- Solar power capacity added 15.03 GW in 2023-24, reaching a total of 82.64 GW by April 2024.
- The Perform Achieve and Trade (PAT) scheme targets significant energy savings and reduction in greenhouse gas (GHG) emissions.
- Achieved 40% cumulative electrical power from non-fossil sources in 2021, and reduced GDP emission intensity by 33% by 2019, ahead of the 2030 target.
- Updated Nationally Determined Contributions (NDCs) in August 2022 to reduce GDP emission intensity by 45% and increase non-fossil fuel capacity to 50% by 2030.

Box VI.1: Case Study on Micro Irrigation- Role of Community-led Water Governance[24]

Navanagar is a small agricultural village in Himmatnagar taluka of Sabarkantha District, Gujarat. Over the years, due to farming practices, the village's water table decreased to 500-600 feet below the ground level. Total Dissolved Salt (TDS), ranging from 900 to 1100 mg/litre, made the water unsuitable for agriculture. Due to these reasons, farming became a loss-making profession for the farmers. Farmers could only produce one conventional crop like cotton & castor. The Water Resource Department, Gujarat, and Gujarat Green Revolution Company (GGRC) mobilised local farmers to rejuvenate the village pond by drawing water from the nearby sub-minor canal of the Guhai Dam.

The village farmers' co-operative society under the 'Som Sarovar', deepened the village pond with the help of the Gram Panchayat to store and conserve water. The farmers built a sump (40 ft diameter x 40 ft depth), drew water from the village pond, took individual electricity connections, and installed water lifting facilities (pump & motor) from the sump. The farmers bore the total cost of electrical connections and pumping/lifting of water.

Farmers also created the piped water conveyance from the sump to their respective fields. The farmers' body made it compulsory for all the member farmers to adopt drip irrigation for efficient water use under Per Drop More Crop (PDMC). Since then, agriculture productivity has seen a revival with an increase of 30 per cent along with a reduction in fertilizer and power consumption and crop diversification away from conventional crops like wheat, castor, cotton, etc., to fruits & vegetables like watermelon, musk-melon, fennel, cumin and chilly that are more remunerative. Water governance by the community transformed the village from water deficient to water sufficient, ensuring equity in water distribution.

UNFCCC Reporting:

- India's Third National Communication (TNC) to UNFCCC in December 2023 includes first Adaptation Communication (AC).
- Energy sector is the largest contributor to emissions, followed by agriculture, industry, and waste.
- Land Use, Land-Use Change & Forestry (LULUCF) remains a net carbon sink.

Decoupling Growth from Emissions:

- India's emissions grew at a CAGR of 4% from 2005 to 2019, while GDP grew at 7%, showing decoupling of economic growth from emissions.
- International Finance Corporation report highlights India as the only G20 nation aligned with 2°C warming target.

Financial Needs:

- India's climate action primarily funded by domestic resources.
- Estimated USD 2.5 trillion needed to meet NDC targets by 2030.
- Access to finance and technology from developed countries is essential.

Adaptation is Critical for India

Importance of Adaptation:

- Climate change adaptation reduces vulnerability to impacts like weather extremes, sea-level rise, biodiversity loss, and food and water insecurity.
- Lower-income countries, including India, are particularly vulnerable due to limited resources for resilient infrastructure and adaptive technologies.

India's Vulnerability:

- India, one of the most climate-vulnerable countries, requires adaptive strategies in agriculture and conservation to mitigate climate change effects.
- Government initiatives include micro-irrigation under PMKSY, the National Innovations on Climate Resilient Agriculture (NICRA), and flood forecasting systems.
- Developmental programs such as Swachh Bharat Mission, MGNREGA, Pradhan Mantri Awas Yojana, and Saubhagya Scheme also improve resilience.

Adaptation Expenditure:

- India's adaptation-relevant expenditure was 5.60% of GDP in 2021-2022, up from 3.7% in 2015-16, integrating climate resilience into development plans.
- Increased adaptation finance is needed to ease resource constraints and meet long-term sustainable development goals.

Coastal and Wetland Conservation:

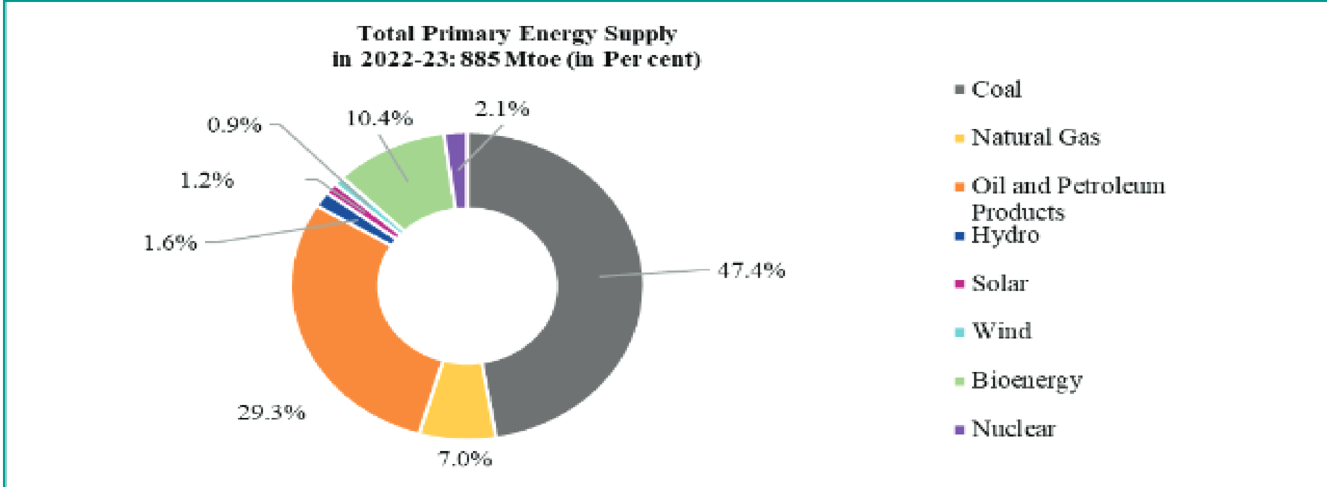
- Coastal regions are more vulnerable; wetland conservation offers buffers against storm surges and flooding.
- Urban wetlands absorb excess rainfall, while mangroves prevent coastal erosion and support local communities.
- India has designated 56 new Ramsar sites since 2014, totaling 82 sites covering 1.33 million hectares.
- Initiatives like 'Amrit Dharohar' and Mission Sahbhagita promote wetland conservation, nature tourism, and **community involvement**.

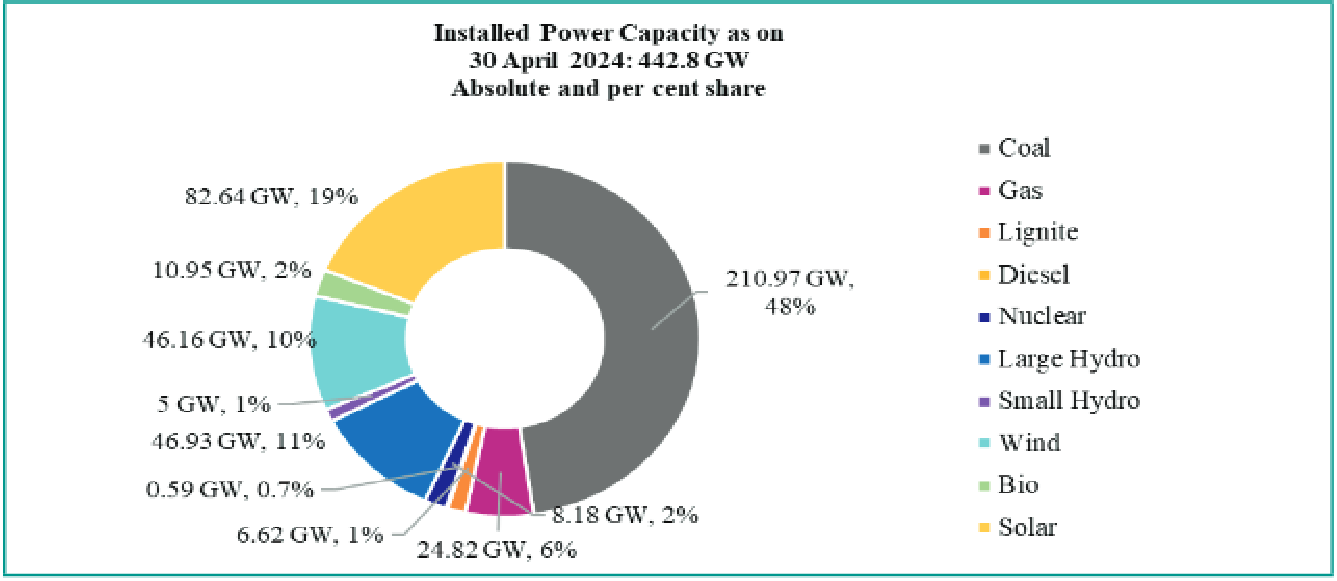
Low Carbon Development and Energy Composition

Energy Composition and Efficiency:

- India's energy needs are projected to grow 2-2.5 times by 2047.
- Transition to a diversified energy mix is crucial for achieving Net Zero by 2070.
- In 2022-23, 84% of energy came from coal, oil, and natural gas.
- The electricity sector has shifted towards renewables, with non-fossil power capacity at 45.4% as of May 2024.

Chart VI.1: India's Primary Energy Supply Mix in 2022-23 and Installed Power Capacity in 2024 in terms of fuel sources





Source: Data obtained from NITI Aayog and Central Electricity Authority (https://cea.nic.in/installed-capacity-report/?lang

- Initiatives include PM-Surya Ghar Yojana, offshore wind energy policy, and the Green Hydrogen Mission.

Green Hydrogen and Renewables:

- Green Hydrogen Mission targets 5 MMT by 2030, but faces cost and infrastructure challenges.
- Renewable energy faces intermittency issues and land use constraints.
- Solar photovoltaic (PV) waste management and recycling are critical challenges.

Coal and Clean Technologies:

- Coal remains dominant, accounting for nearly 70% of electricity generation.
- Clean coal initiatives include coal gasification, coal bed methane extraction, and carbon capture and storage (CCS).

Energy Efficiency:

- Policymakers aim to double the global rate of energy efficiency improvements by 2030.

Steps taken to improve Energy Efficiency

India has an ambitious target of Emissions Intensity (EI) reduction of 45 per cent by 2030 from the base of 2005. To achieve this, absolute emissions must be restricted to around 4584 million tonnes of CO2 equivalent (MtCO2e). This means that the overall emissions in the economy would have to be reduced by 3753 MtCO2e (over the baseline scenario) to meet the NDC target.

Energy efficiency improvement in buildings and appliances is a priority for India as over 50 per cent of the 2030 building stock is yet to come up – a situation that is fundamentally different from developed countries.37 A reduction in emission intensity in the building sector will play a key role in achieving the target. Presently, around 33 per cent of the total electricity consumption is in consumers' commercial and residential categories, estimated to grow to approximately 40 per cent of total electricity consumption by 2031-32.

The Energy Conservation Building Code (ECBC) sets minimum energy performance standards for commercial buildings. A voluntary star rating program has also been launched for existing commercial buildings. Shunya labelling program identifies and commemorates Net Zero Energy Building (NZEB) and Net Positive Energy Buildings (NPEB). For appliances, the Standards and Labelling (S&L) program was launched to provide consumers with an informed choice about the energy and cost-saving potential of the labelled appliances/equipment being sold commercially. As per the 2022-23 Impact Assessment report of BEE, the S&L program helped save 81 billion units of electricity. The Government has also implemented a Star-rated program to offer high-efficiency ACs for consumers, and BEE has designed an incentive-based market transformation program offering incentives for consumers to switch from ACs older than eight years to 5-star rated models.

The Lifestyle for Environment (LiFE) initiative was launched by the Prime Minister of India at COP26 in Glasgow in November 2021. It aims to encourage the adoption of sustainable lifestyles to address the challenges of environmental degradation and climate change. India has integrated several policies in its energy transition strategy that are aligned with LiFE.

Adopting energy-efficient practices is at the heart of LiFE.38 Household consumers can, by adopting energy-efficient appliances and buildings, sustainable mobility and virtuous energy management foster a widespread culture of energy efficiency. According to IEA analysis, adopting worldwide LiFE actions – including behavioural changes and sustainable consumption choices – would save consumers about USD 440 billion and amount to one-fifth of the emissions reduction needed by 2030. Behavioural and lifestyle changes are also among the pillars put forth by India during the G20 presidency's strategic plan for advancing energy efficiency across demand sectors by 2030. An energy-efficient lifestyle not only benefits individuals but also helps governments to reduce or delay new investments in energy infrastructure and allows for the use of that money in other investments needed in the country.

In India, mission LiFE is being unfolded by BEE in three distinct phases focusing on individual behavioural change:

- encouraging people to adopt simple yet effective energy-saving practices in their daily lives,
- influencing industries and markets to cater to sustainable consumption patterns and
- to trigger a shift in large-scale industrial and Government policies, promoting sustainable production and consumption.

BEE's efficiency policies also extend to promoting behavioural change and consumer awareness. Mindful consumption is promoted through programmes such as the recent campaign on setting air conditioners at 24 °C. The AC @ 24 campaign uses an approach based on optimizing consumption, switching to efficient technologies, shifting to energy-saving behaviour, and upgrading technologies.

For the industrial sector, the Perform, Achieve, and Trade (PAT) scheme is another measure of demand management that aims to reduce emissions in energy-intensive industries. For a particular cycle, the mechanism involves assessing Specific Energy Consumption (SEC) in the baseline year and projected SEC in the target year. It covers different forms of net energy going into the plant's boundary and products leaving it. Eight cycles of the scheme have been launched so far. As the next level of action, the Ministry of Power has come out with the Carbon Credit Trading Scheme (CCTS).

For the transport sector, fuel consumption standards and norms have been set for cars, heavy-duty vehicles (HDVs), and others. Considering the burgeoning numbers of Electri Vehicles (EVs), 'Charging Infrastructure for Electric Vehicles – Guidelines and Standards' have been notified to promote the ecosystem of charging infrastructure.

Demand-side management (DSM) has traditionally been recognised as a significant intervention to reduce energy demand. It is an ultimate irony that even as developed nations obsess over prospective emissions from the developing world, the widespread adoption of artificial intelligence is going to result in the demand for power to expand to levels not seen in decades in America.39 The failure and unwillingness to restrain energy demand and the search for so-called alternative energy sources – with their much lower energy density compared to fossil fuels – comes with unprecedented demand for financial and other resources and heightened geopolitical vulnerabilities and stress. The warped priorities of advanced economies are sought to be achieved at the cost of legitimate economic aspirations in the developing world.

Challenges of Energy Transition:

- Renewable energy's intermittency affects grid stability.
- Levelized Cost of Electricity (LCOE) for renewables has fallen, but intermittency costs are not reflected.
- Global cooperation in R&D for renewable technologies is essential.

Round-the-Clock (RTC) Supply of Renewable Energy (RE)

- The objective of the Round-the-Clock (RTC) supply is to match the buyer's energy demand curve through renewable energy power projects with energy storage systems.
- Ministry of Power issued 'Guidelines for Tariff Based Competitive Bidding Process for Procurement of Firm and Dispatchable Power from Grid Connected Renewable Energy Power Projects with Energy Storage Systems' in 2023 to provide a framework for Power Purchase Agreements (PPAs) for RTC supply.

A few examples of the tariffs discovered during the recent round of biddings are as follows:

- Solar Energy Corporation of India (SECI) for Interstate Transmission System (ISTS)-connected solar PV power projects were in the range of 2.6 to 2.74 ₹/kWh.44 For ISTS-connected wind and solar hybrid, the range was 3.43 to 3.54 ₹/kWh.45 For ISTS-connected wind power, it was 3.18 to 3.49 ₹/kWh. 46 The range was 4.64 to 5.96 ₹/kWh for ISTS-connected wind-solar hybrid power projects with assured peak power supply.
- Railway Energy Management Company Limited's (REMCL) auction for round-the-clock renewable power led to tariffs in the range of 4.25 to 4.43 ₹/kWh.
- The lowest bid for the auction carried out by Satluj Jal Vidyut Nigam (SJVN) Ltd. was 4.38 ₹/kWh.49

The examples indicate that tariffs for RTC projects are higher than those for solar and wind projects without energy storage, reflecting the internalisation of externalities related to intermittent power generation.

- RTC-RE is at a nascent stage, and its deployment faces several challenges, 50 such as the dynamic requirements of the utilities and growing energy demands, especially in the context of schemes like the SAUBHAGYA scheme, agricultural feeder segregation, Time of Day (ToD) mechanism, promotion of solar rooftops; and those incentivising changes in consumer behaviour. Owing to these rapid changes, the RTC product designed for the present demand pattern might need to be revised later .
- The least cost solutions may be obtained by combining solar and wind projects from multiple projects spanning multiple states. This, however, poses a challenge in terms of arranging long-term PPAs with multiple generators, obtaining transmission access at multiple locations, setting up remote control centres for real-time control, etc.
- Higher upfront costs, technology risks, longer payback periods, and limited access to critical and rare earth minerals required for battery storage technology also pose serious challenges. In this context, pump storage-based energy storage solutions can be utilised to reduce system costs, owing to their longer lifetimes compared to battery energy storage systems.

Finance for Sustainable Development:

- Significant investment is required for India's Net Zero pathways, estimated at ~USD 250 billion per year until 2047.
- Measures include the 'Framework for Sovereign Green Bonds', SEBI's sustainability reporting, and RBI's green finance initiatives.

Renewable Energy and Critical Minerals:

- India needs critical minerals for renewable energy technologies, with a focus on building domestic capacity and international cooperation.
- Khanij Bidesh India Limited (KABIL) undertakes overseas projects for strategic minerals.

Putting in Place a Market Framework to Price Carbon: Indian Carbon Market

Carbon Credit Trading Scheme (CCTS):

- Launched on 28 June 2023 by the Ministry of Power.
- Aims to price one tonne of CO_2 equivalent emissions, incentivizing investment in low-emission technologies.
- Will replace the existing PAT scheme, with Designated Consumers transitioning to CCTS by 2028-30.
- Under CCTS, entity-specific GHG emission intensity targets will replace energy consumption targets.
- Obligated Entities (OEs) must meet annual GHG targets and report compliance within nine months of the compliance year.
- Entities exceeding targets receive Carbon Credit Certificates (CCC), which can be sold or banked.
- Non-compliant entities must buy or use banked CCCs.

Voluntary Carbon Market (VCM):

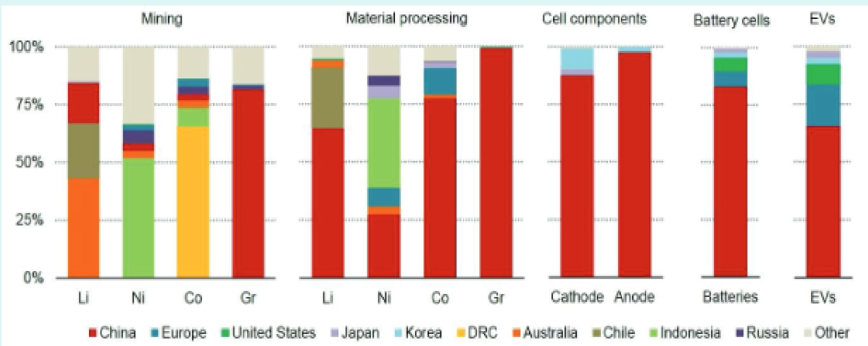
- Operates without government regulation, allowing entities to offset emissions voluntarily.
- Global VCM worth over USD 1.2 billion, with India as the second-largest supplier of carbon offsets.
- Offsets can lead to double counting issues if both the buyer and seller claim the reductions.
- India's ambitious climate goals may be impacted by selling offsets to foreign entities.

Government Initiatives:

- **Mission LiFE:** Promotes sustainable living and conservation through voluntary environmental actions.
- **Green Credit Programme (GCP):** Rewards individuals and entities for environment-positive activities with green credits.

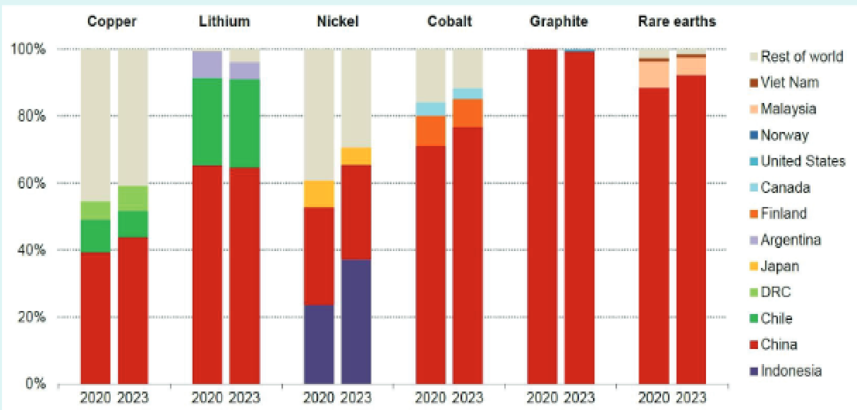
Key Points:

Chart VI.5: Geographical distribution of critical mineral global supply chains, 2023[63]



Source: IEA's Global Critical Minerals Outlook 2024

Chart VI.6: Share of refined material production by country in 2020 and 2023



Source: IEA's Global Critical Minerals Outlook 2024

- Effective regulation and implementation of CCTS and VCM are crucial for India's emission reduction goals.
- India must balance domestic compliance with not subsidizing the emission reductions of other countries.
- The focus is on integrating emission costs into industrial production and investment decisions to meet Net Zero by 2070 and Viksit Bharat by 2047 goals.

Table VI.1: Institutional Architecture of Carbon Market in India

Function	Institution
Governance, oversight and functioning	National Steering Committee for the Indian carbon market
Policy & administrator	Bureau of Energy Efficiency
Implementor of targets	Obligated entity
Trading regulator	Central Electricity Regulatory Commission
Registry	Grid Controller of India Limited (GCIL)
Trading platform	Power exchange – IEX, PXIL, HPX

International Commitments on Climate Finance: The Developments

Financial Challenges for Developing Countries:

- Developing countries need USD 5.8 trillion to USD 11.5 trillion by 2030 to meet climate targets.
- Current international adaptation finance is USD 21.3 billion, far short of the estimated costs.
- Most international finance available is in the form of loans, not grants.
- India's climate finance needs are USD 2.5 trillion for 2015-2030 and tens of trillions by 2050 for low-carbon development.

Role of Developed Countries:

- Developed nations are mandated by the UNFCCC and Paris Agreement to provide financial and technological support on a grant or concessional basis.
- There is a critical need for new, additional, grant-based, and highly concessional finance to support developing countries.

Private Finance and Challenges:

- Emphasis on private finance is debated due to the limited ability of private capital to meet large-scale needs.
- Challenges include limited financial market depth and vulnerable debt profiles in developing countries.
- Multilateral Development Banks (MDBs) have struggled to mobilize private sector finance for climate action.

COP 28 and Global Stocktake:

- Held in Dubai, UAE, COP 28 focused on increasing global climate ambition and operationalizing the Loss and Damage Fund.
- Established the Emirates Framework for Global Climate Resilience, requiring all countries to have adaptation plans by 2030.
- Emphasized scaling up adaptation finance and tripling global renewable energy capacity.

New Collective Quantified Goal (NCQG):

- Negotiations are ongoing to set a new annual climate finance goal from developed to developing countries starting in 2025.
- The goal is to exceed the current USD 100 billion per year, addressing the needs and priorities of developing countries.
- Developing countries seek ambitious, grant-based, and accessible financial resources with a balance between mitigation and adaptation.

Summary:

- Significant financial resources are required for developing countries to meet climate goals.
- Developed countries must lead in providing grant-based financial and technological support.
- The effectiveness of climate finance depends on international cooperation and the balance between private and public funding.

India's International Initiatives to Address Climate Change Issues

1. International Solar Alliance (ISA):

- **Established:** 2015 by India and France.
- **Members:** 119 countries.
- **Goal:** Unlock USD 1 trillion in solar investments by 2030.
- **Achievements:** Identified 9.5 GW of solar capacity, 19 demonstration projects in LDCs and SIDS, trained 4,000 professionals, and established STAR-C in Ethiopia and Somalia.

2. One World, One Sun, One Grid (OSOWOG):

- **Objective:** Interconnect global solar energy systems.
- **Phases:**
  - Phase 1: Connect the Indian grid with the Middle East, South Asia, and Southeast Asia.
  - Phase 2: Extend to Africa.
  - Phase 3: Achieve global interconnection with a target of 2,600 GW by 2050.

3. Coalition for Disaster Resilient Infrastructure (CDRI):

- **Launched:** 2019 at the UN Climate Action Summit.
- **Purpose:** Enhance resilience of infrastructure to climate and disaster risks.
- **Goals:** Improve infrastructure resilience for over three billion people by 2050.
- **Initiatives:** Released Biennial Report on Global Infrastructure Resilience, financial support for peer learning, capacity development, and sectoral programs. IRIS initiative for SIDS supported by USD 35 million from international partners.

4. Leadership Group for Industry Transition (LeadIT):

- **Launched:** 2019 by India and Sweden.

- **Focus:** Achieve Paris Agreement goals through industry transition.
- **LeadIT 2.0 (2024-26):** Emphasizes inclusive and just industry transition, co-development and transfer of low-carbon technology, and financial support for emerging economies.

These initiatives demonstrate India's proactive role in promoting sustainable energy solutions, building disaster-resilient infrastructure, and facilitating industry transition towards a low-carbon future.

GLOSSARY:

TERMS	MEANINGS
Climate change mitigation	According to UNDP, it refers to actions that help reduce vulnerability to climate change's current or expected impacts, like weather extremes and hazards, slow onset events such as sea-level rise, biodiversity loss, or food and water insecurity
Sovereign Green Bonds (SGrBs)	A type of government bond specifically earmarked to finance environmentally sustainable projects.
Carbon offsetting	Process that allows entities to compensate for their emissions through emission reduction/ removal/avoidance achieved in projects elsewhere or by other entities.

CHAPTER 7: SOCIAL SECTOR: BENEFITS THAT EMPOWER

- **Introduction**
- **Dovetailing Growth with Empowering Welfare: A Paradigm Shift**
- **Social and Economic Empowerment of Women**
- **Rural Economy: Driving the Growth Engine**
- **Towards Sustainable Development**
- **Way Forward**

Introduction

- The new welfare approach focuses on **increasing the impact per rupee spent.** The digitization of healthcare, education and governance has been a force multiplier for every rupee spent on a welfare programme.
- Between FY18 and FY24, **nominal GDP has grown at a CAGR of around 9.5 per cent** while the welfare expenditure has grown at a CAGR of 12.8 per cent.
- **Gini coefficient**, an indicator of inequality, has declined from 0.283 to 0.266 for the rural sector and from 0.363 to 0.314 for the urban sector of the country.
- More than 34.7 crore **Ayushman Bharat cards** have been generated, and the scheme has covered 7.37 crore hospital admissions.
- The challenge of ensuring mental health is intrinsically and economically valuable. **22 mental disorders are covered under the Ayushman Bharat** – PMJAY health insurance.
- **'Poshan Bhi Padhai Bhi'** programme for early childhood education aims to develop the world's largest, universal, high-quality preschool network at Anganwadi Centres.
- **Vidyanjali initiative** played crucial role in enhancing educational experiences of over 1.44 cr. students facilitating community engagement and through volunteer contributions.
- The rise **in enrolment in higher education** has been driven by underprivileged sections such as SC, ST and OBC, with a faster growth in female enrolment across sections, witnessing 31.6 per cent increase since FY15.
- India is making rapid progress in R&D, with nearly one lakh patents granted in FY24, compared to less than 25,000 patent grants in FY20.
- Government provisioned ₹ 3.10 lakh crore in FY25; this shows a 218.8 per cent increase over FY14 (BE).
- Under **PM-AWAS-Gramin**, 2.63 crore houses were constructed for the poor in the last nine years (as of 10 July 2024).
- 15.14 lakh km road construction completed under **Gram Sadak Yojana** since 2014-15 (as of 10 July 2024).

Dovetailing Growth with Empowering Welfare: A Paradigm Shift

Empowering Welfare Initiatives:

- **Demchok Village, Leh:** First tap water connection in 2022 under Jal Jeevan Mission.
- **Bulumgavan, Maharashtra:** Received electricity in 2018, 70 years after independence.

Table VII.1 Trends in social services expenditure by general Government
(Combined Centre and States)

(₹ crore)

Items	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23 (RE)	2023-24 (BE)
Total Expenditure	45,15,946	50,40,747	54,10,887	63,53,359	70,98,451	83,76,972	90,45,119
Expenditure on Social Services[2]	11,39,524	12,78,124	13,64,906	14,79,389	17,87,019	21,49,346	23,50,584
of which:							
Education[3]	4,83,481	5,26,481	5,79,575	5,75,834	6,39,436	7,68,946	8,28,747
*Education (MoE's estimates)**	6,621,51	7,36,581	8,63,118 (RE)	9,19,145 (BE)			
Health[4]	2,43,388	2,65,813	2,72,648	3,17,687	4,56,109	5,12,742	5,85,706
Others	4,12,655	4,85,829	5,12,683	5,85,868	6,91,474	8,67,659	9,36,131
As per cent of GDP							
Expenditure on Social Services	6.7	6.8	6.8	7.5	7.6	8.0	7.8
of which:							
Education	2.8	2.8	2.9	2.9	2.7	2.9	2.7
*Education (MoE's estimates)**	3.9	3.9	4.3 (RE)	4.6 (BE)			
Health	1.4	1.4	1.4	1.6	1.9	1.9	1.9
Others	2.4	2.6	2.6	3.0	2.9	3.2	3.1

Government Achievements:

- **PM Ujjwala Yojana:** 10.3 crore women provided free gas connections.
- **Swachh Bharat Mission:** 11.7 crore toilets built.
- **Jan Dhan Yojana:** 52.6 crore accounts opened.
- **PM-AWAS Yojana:** 3.47 crore pucca houses built.
- **Jal Jeevan Mission:** 11.7 crore tap water connections.
- **Ayushman Bharat Scheme:** 6.9 crore hospital admissions.

Economic and Social Strengths:

- **Fastest-growing economy:** Extensive digital public infrastructure (DPI).
- **Young Population:** 18% aged 15-24, median age 28.2 years.

Challenges:

- **Education and Malnutrition:** Improve learning outcomes and eliminate malnutrition.
- **Regional, Caste, and Gender Disparities:** Address disparities and instill government accountability.

Long-term Welfare Approach:

- **Focus on Outcomes:** Emphasizes process reforms and accountability.
- **Technology Utilization:** Digitization of healthcare, education, and governance.
- **Direct Benefit Transfer (DBT):** ₹38 lakh crore transferred since 2013.

Targeted Implementation:

- **Aspirational Districts Programme (ADP):** Convergence, Collaboration, and Competition approach.
- **Other Programmes:** Aspirational Blocks Programme, Vibrant Villages Programme, Viksit Bharat Sankalp Yatra.

Social Investments:

Box VII.2: Baramulla and Gumla progress from 'Aspiration' to 'Transformation'

Baramulla, Jammu and Kashmir and Gumla, Jharkhand, won the prestigious PM Awards for excellence in Public Administration 2022 under the ADP category. The initiatives in Gumla and Baramulla showcase the transformative impact of targeted interventions under the ADP, significantly improving health and education outcomes.

Baramulla addressed its challenging topography and harsh weather by establishing birth waiting wards in Uri and Boniyar, benefiting 20,000 pregnant women. Severe acute malnutrition and moderate acute malnutrition rates declined to near-zero levels through monitoring with Poshan tracker tabs. Educational initiatives included 18 lab schools focusing on innovative teaching techniques and improving learning outcomes. Hybrid learning and ICT tools prepared students for competitive exams. Other efforts included crop diversification, mushroom cultivation, organic farming, and dairy units. Governance measures involved digital gap analysis, biometric attendance, and an Innovation Cell for academics.

Gumla tackled anaemia and malnutrition by promoting the cultivation of Ragi, empowering women in Self-Help Groups (SHGs) through livelihood opportunities. This initiative addressed the district's challenges of low income, poor productivity, and lack of critical infrastructure. Tribal women handled Ragi's procurement, processing, packaging, and marketing. Governance initiatives included an open-door policy for public grievances, regular meetings, and optimal fund allocation. The innovative Ragi Mission broke the stagnant monocropping practice by expanding the ragi cultivated area by 3500 acres, resulting in a 219 per cent increase in production in FY22. Solar-based lift and drip irrigation systems covering more than 4349 acres ensure all-year round agricultural practice in the region.

- **Health and Sanitation:** Mission Indradhanush, ODF, Swachh Bharat Mission.
- **Social Security Schemes:** Atal Pension Yojana, PM Jeevan Jyoti Yojana, PM Suraksha Bima Yojana.

Corporate Social Responsibility (CSR):

- **Mandatory Spending:** Section 135 of the Companies Act 2013.

Chart VII.1(a): Annual CSR spending in India (in ₹ crore)

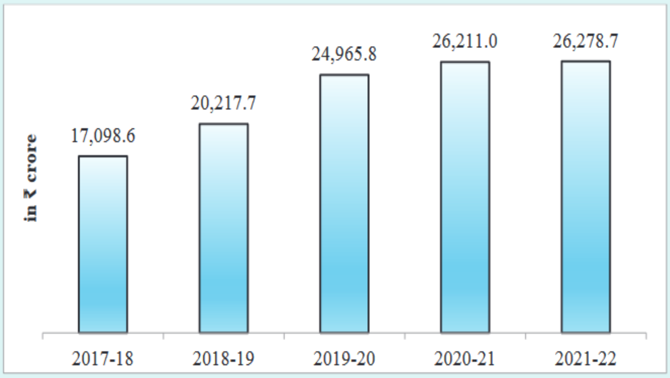
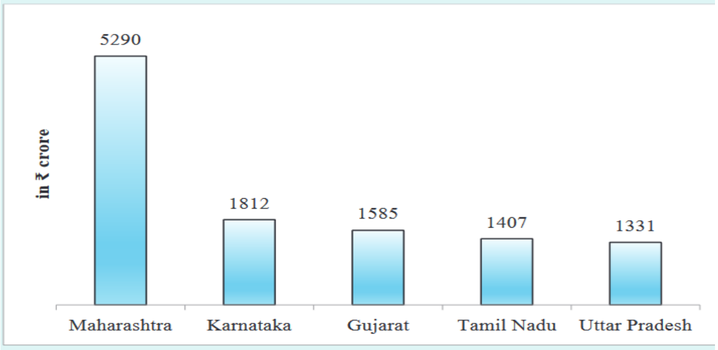


Chart VII.1(b): Total CSR spent: Top five States, FY22



Progress and Outcomes:

- **Multidimensional Poverty:** Sharp decline from 0.117 in 2015-16 to 0.066 in 2019-21.
- **Household Consumption Expenditure Survey 2022-23:**
  - **MPCE Increase:** 40% in rural and 33.5% in urban areas since 2011-12.
  - **Gini Coefficient:** Declined from 0.283 to 0.266 (rural) and from 0.363 to 0.314 (urban).

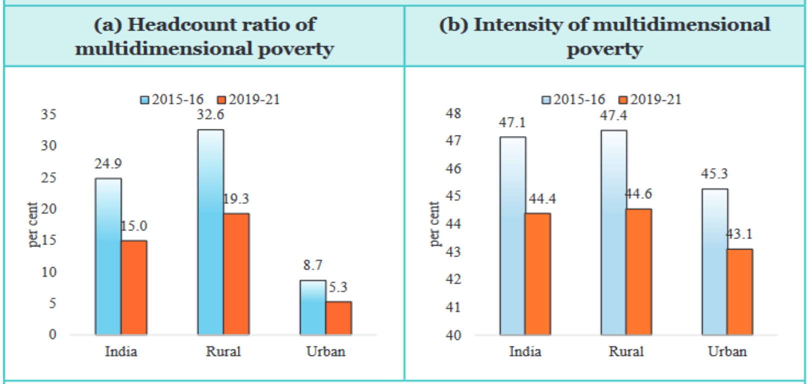
Overall Impact:

- **Reduced Inequality:** Decline in economic inequality, especially for the lowest 5% of the population.
- **Inclusive Growth:** MPCE/PCI ratio increased for most consumption classes, showcasing resilient growth despite the COVID-19 pandemic.

Quality Healthcare for All: A resilient economy hinges on a robust health sector, as it enhances human capital, labour productivity, household savings, and resilience against health shocks like

COVID-19. The Indian government is committed to preventive and promotive healthcare, ensuring universal access to quality healthcare through various schemes:

Chart VII.2: Decline in multidimensional poverty



Source: NITI Aayog, MPI Report 2023

- **Ayushman Bharat Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY)**: Provides health insurance cover of ₹5 lakh/year for underprivileged families.
- **PM Jan Aushadhi Kendras**: Offers quality medicines at 50-90% cheaper rates.
- **AMRIT (Affordable Medicines and Reliable Implants for Treatment)**: Supplies subsidised medicines for critical illnesses.
- **Ayushman Bhav Campaign**: Aims to saturate selected healthcare services in every village/town and inform citizens about the Government's flagship schemes.
- **Ayushman Bharat Digital Mission (ABDM)**: Establishes a national digital health ecosystem.
- **eSanjeevani**: Facilitates telemedicine for virtual doctor consultations in remote areas.

Mental Health: A Key Driver of Development:

Mental health significantly impacts individual and national development, affecting physical, social, and emotional well-being. The COVID-19 pandemic has exacerbated mental health issues, with a notable rise in depression and anxiety globally.

Mental Health Statistics

- In 2019, 1 in 8 people globally had a mental disorder.
- The COVID-19 pandemic led to a significant increase in mental health issues.
- In India, 10.6% of adults suffer from mental disorders, with a treatment gap of 70-92%.

Mental Health of Children and Youth

- Rising mental health issues in youth due to academic pressures, social media, and family dynamics.
- In India, NCERT surveys indicate increasing poor mental health among adolescents, exacerbated by the COVID-19 pandemic.

Economic Impact

Mental health issues lead to productivity losses, increased healthcare costs, and significant economic impact. Investments in mental health yield high returns, highlighting the importance of addressing mental health for economic growth.

Policy Recommendations

- Increase the number of psychiatrists to meet WHO norms.
- Develop comprehensive guidelines for mental health services.
- Assess programme effectiveness through user feedback.
- Promote peer support networks, community-based rehabilitation, and NGO partnerships.
- Integrate mental health interventions in schools with age-appropriate curricula.
- Address stigma through awareness campaigns and community-based approaches.

National Health Accounts (NHA) Highlights:

- Government Health Expenditure (GHE) increased in total GDP and Total Health Expenditure (THE).
- Primary healthcare expenditure rose from 51.3% of GHE in FY15 to 55.9% in FY20.
- Social security health expenditure grew from 5.7% in FY15 to 9.3% in FY20.

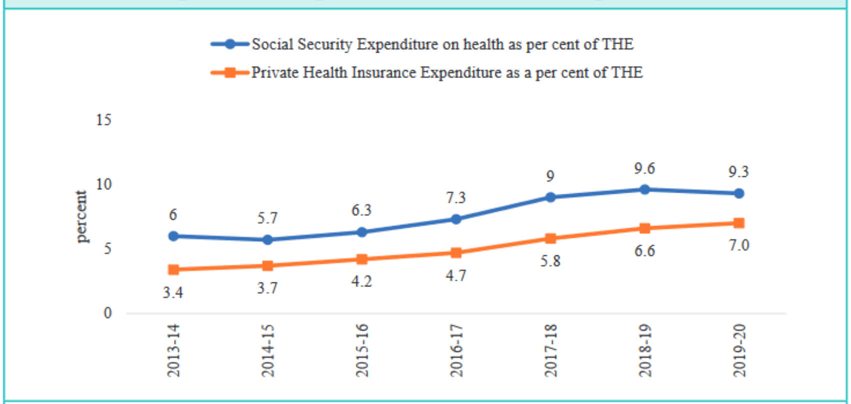
Health Indicators:

- Infant Mortality Rate: 39 per 1000 live births (2013) to 28 per 1000 (2020).
- Maternal Mortality Rate: 167 per lakh live births (2014) to 97 per lakh (2020).
- Ayushman Bharat scheme saved over 1.25 lakh crore in out-of-pocket expenses by January 2024.

Future Trends:

- Focus on healthy eating and mental health due to rising obesity and diabetes.

Chart VII.5(b): Social Security Expenditure and Private Health Insurance Expenditure as per cent of Total Health Expenditure



Source: National Health Accounts, 2019-20, MoHFW

- Importance of state and local governance in public health.

Education

National Education Policy (NEP) 2020:

- Aims to provide high-quality education to all learners aged 3-18.
- Emphasizes foundational literacy and numeracy, experiential learning, multilingual education, and holistic assessment.

School Education:

- Basic facilities in schools improved, including toilets, drinking water, and hand-washing facilities.
- The National Curriculum Framework for School Education (NCF-SE) 2023 focuses on competency-based education and vocational training from grade 3.

Table VII.5: Status of school infrastructure
(Schools with basic facilities as a percentage of all schools)

Year	2012-13	2019-20	2020-21	2021-22	2022-23 (P)
Girls toilet	88.1	96.9	97.3	97.5	97.0
Boys toilet	67.2	95.9	96.2	96.2	95.6
Hand wash facility	36.3	90.2	91.9	93.6	94.1
Library/Reading Room/ Reading Corner	69.2	84.1	85.6	87.3	88.3
Electricity	54.6	83.4	86.9	89.3	91.7
Medical check-ups in school in a year	61.1	82.3	50.4*	54.6*	74.3
Computer	22.2	38.5	41.3	47.5	47.7
Internet	6.2	22.3	24.5	33.9	49.7

* Due to COVID-19, schools were closed physically. Hence, fewer medical check-ups were done. P: Provisional
Source: UDISE+, https://dashboard.udiseplus.gov.in/#/home

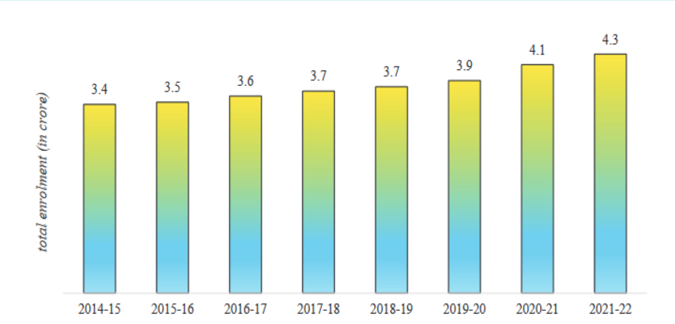
Vocational Education:

- 29,342 schools covered under skill education from FY19 to FY24.
- 22 sectors and 88 job roles included in vocational education.

Higher Education:

- Total enrolment increased to 4.33 crore in FY22 from 3.42 crore in FY15.

Chart VII.6: Total students' enrolments in higher education



Source: All India Survey on Higher Education (AISHE) report 2021-22, Ministry of Education

Table VII.6: Enrolment in higher education from various categories
(numbers in lakhs)

	2014-15	2021-22
All	342	433
All Female	157	207
SC	46.1	66.2
SC Female	21	31.7
ST	16.4	27.1
ST Female	7.5	13.5
OBC	113	163
OBC Female	52.4	78.2

Source: AISHE 2021-22, Dept. of Higher Education, Ministry of Education

- Significant rise in enrolment among underprivileged sections and women.

Digital Learning:

- National Credit Framework (NCrF) supports lifelong learning.
- APAAR and Academic Bank of Credits (ABC) facilitate academic mobility and credit recognition.

India's online learning architecture

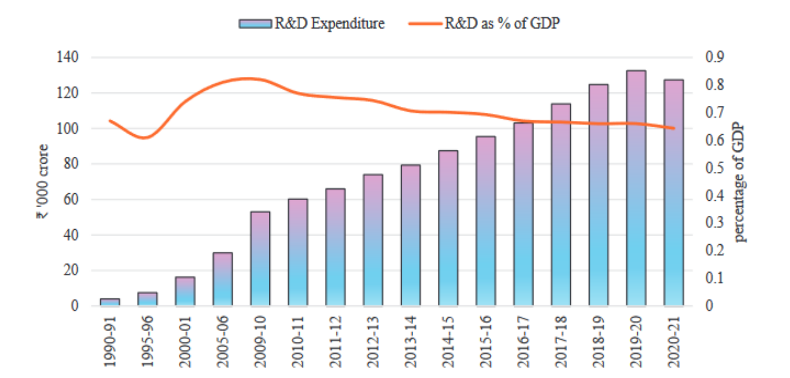
Powered by the combination of Study Webs of Active Learning for Young Aspiring Minds (SWAYAM), SWAYAM PRABHA and SWAYAM Plus, indigenously crafted platforms have emerged as powerful catalysts in bridging the digital divide and achieving the cardinal principles of NEP, viz., access, equity and quality.

- **SWAYAM**, an open learning MOOC platform, has been pivotal in ensuring students across India have access to high-quality content, thus mainstreaming them into the knowledge economy. The platform has 13140+ course offerings across disciplines, including emerging technologies like AI, Machine Learning and cloud computing. With an enrolment of 4.3 crore, SWAYAM has emerged as one of the most popular e-learning platforms today.
- **SWAYAM PRABHA, a DTH (Direct to Home)** Satellite TV service comprising 48 DTH channels, has provided UG/PG level educational content across various subjects, available 24x7 with a structured schedule. This service has a remarkable reach, captivating over 1.2 million students and viewing 143,000+ unique videos, totalling 86,000+ hours of watch time.
- **SWAYAM Plus** is an online platform led by IIT Madras, featuring high-quality courses for credit recognition in collaboration with academia and industry leaders like L&T and Microsoft. It aims to boost employability among college students and lifelong learners, especially in Tier 2 and Tier 3 cities, through courses developed in partnership with industry, focusing on areas such as Manufacturing, Energy, Computer Science & Engineering/IT/ITES, Management, Healthcare, Hospitality & Tourism, and Indian Knowledge Systems. The initiative provides an avenue for upskilling and reskilling to meet dynamic industry requirements.

- **The NEP emphasises enhancing mobility, flexibility, and choices in higher education. SAMARTH, an e-governance solution developed in collaboration by the Ministry of Education** with the Indian Institute of Crafts and Design, aims to digitally transform administrative processes in HEIs, from admissions to awarding degrees. It has been adopted by over 3500 HEIs, including Central Universities, State Universities, Colleges, IITs, IIMs, etc., contributing to establishing a network of digitally-enabled campuses across India.
- **The PM e-VIDYA initiative** unifies digital education efforts, offering diverse content access through DIKSHA and Sathee platforms. DIKSHA features over 3.5 lakh e-contents and 6,854 Energized Textbooks in 30+ languages. 61 Sathee platform provides resources for competitive exam preparation, including around 2000 video lectures, 80,000+ problems, mock tests, an AI chatbot, and mentorship from IIT and AIIMS students for NEET and JEE aspirants.

Research and Development (R&D)

Chart VII.8: Gross expenditure on R&D



Source: Research & Development Statistics at a Glance, 2022-23, Department of Science and Technology

Progress:

- Nearly 1 lakh patents granted in FY24, compared to 25,000 in FY20.
- India ranked 40th in the Global Innovation Index 2023, up from 81st in 2015.
- Ph.D. enrolment increased by 81.2% from FY15 to FY22.

Challenges:

- R&D investment at 0.64% of GDP, lower than China (2.41%), the US (3.47%), and Israel (5.71%).
- Low private sector contribution to R&D (36.4%).

Initiatives:

- National Research Foundation (Anusandhan) established with a 1 lakh crore corpus for research and innovation.
- Increased scholarships for Ph.D. and Post-Doctoral research.

Social and Economic Empowerment of Women

Transition from Women's Development to Women-Led Development

- **Vision:** Equal partnership in national progress.
- **G20 Presidency 2023:** Highlighted 'women-led development.'

Steady Rise in Gender Budget

- **Budget Increase:** From ₹97,134 crore in FY14 to ₹3.10 lakh crore in FY25.
- **Share of Union Budget:** Increased to 6.5% in FY25.

Social Empowerment

- **Initiatives:** Beti Bachao, Beti Padhao; Sukanya Samriddhi Yojana.
- **Improved Indicators:**
  - Sex ratio at birth: 918 (2014-15) to 930 (2023-24).
  - Maternal mortality rate: 130/lakh live births (2014-16) to 97/lakh live births (2018-20).
  - Institutional delivery: 78.9% (2015-16) to 88.6% (2019-21).

Nutritional Security

- **Mission Saksham Anganwadi & Poshan 2.0:** Addresses malnutrition through a lifecycle approach.
  - **Anganwadi Upgrades:** Equipped with modern amenities for early childhood care and education.

Access to Basic Necessities

- **Initiatives:**
  - Swachh Bharat Mission: Construction of toilets.
  - Ujjawala Yojana: Clean cooking gas connections.
  - Jal Jeevan Mission: Tap drinking water connections.

Safety and Support

- **Sakhi Centres:** Provide medical, legal aid, and counselling.
- **Women's Helpline '181':** Offers emergency services and government scheme information.

Education and Skilling

- **Gender Parity in Education:** Achieved at all levels.
- **Skilling Initiatives:**
  - PMKVY: Women's participation increased from 42.7% in FY16 to 52.3% in FY24.
  - Jan Shikshan Sansthan: 82% beneficiaries are women.
  - ITIs and NSTIs: Women's participation increased from 9.8% in FY16 to 13.3% in FY24.
- **Women in STEM:**
  - High proportion of female STEM graduates (42.7%).
  - Women in Science and Engineering (WISE KIRAN) scheme supports women in STEM fields.

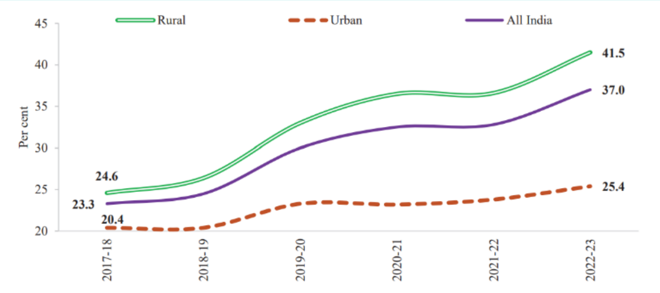
Political Empowerment

- **Nari Shakti Vandan Abhiniyam 2023:** Enhances women's political participation.
- **Panchayat Representation:** 46% of elected representatives are women.

Economic Empowerment

- **Labour Force Participation Rate (LFPR):** Increased to 37% in 2022-23 from 23.3% in 2017-18.

Chart VIII.7: Rural India drives the rise in female LFPR



Source: PLFS reports, NSO
Note: for usual status, 15 years and above

- **Financial Inclusion:**
  - PM Jan Dhan Yojana: 55.6% of account holders are women.
  - Rural Microfinance: NRLM supports over 89 million women.
- **Entrepreneurship:**
  - PM Mudra Yojana: 68% of loans sanctioned to women.
  - Stand-Up India: 77.7% beneficiaries are women.

Towards Equality of Asset Ownership

- **Property Rights:** Efforts to improve female property rights and ownership.
- **Initiatives:** Female ownership of houses under PM Awas Yojana.
- **Rural Economy: Driving the Growth Engine**
  - **Integrated and Sustainable Development: The Government's strategy for rural India focuses on holistic economic betterment through:**
    - Decentralized planning
    - Access to credit and youth skilling
    - Enhanced livelihood opportunities
    - Women empowerment
    - Social security
    - Basic housing, education, health, and sanitation
  - **MGNREGA Modernization: MGNREGA guarantees 100 days of wage employment per year for rural households. Reforms include:**
    - Geotagging of works
    - 99.9% payments through National Electronic Fund Management System
    - Aadhaar-based payments for 98.6% of workers
    - Social Audit units in 28 states/UTs
    - MGNREGA has evolved into an asset-creation program, with a rise in individual beneficiary works from 9.6% (FY14) to 73.3% (FY24).

Table VII.8: Key indicators on MGNREGS

Indicator	2019-20	2020-21	2021-22	2022-23	2023-24*
Person-days generated (in crore)	265.4	389.1	363.3	293.8	309.2
Average person-days per household	48.4	51.52	50.1	47.8	52.1
Women participation rate (%age)	54.8	53.19	54.7	57.5	58.9

*As per MIS (as of 31.03.2024)

  - **Rural Entrepreneurship: Government initiatives focus on:**
    - Affordable finance
    - Market opportunities
    - Common infrastructure
    - Rural Self Employment Training Institutes (RSETIs) act as skill and credit hubs, promoting rural entrepreneurship.
  - **Digital Transformation in Governance**
    - With a 200% increase in rural internet subscriptions (2015-2021), digitization initiatives aim to:
    - Reduce the gap between villages and administrative centers
    - Enhance program impact and opportunity utilization

Digitisation initiatives to improve rural governance

e-Panchayat Mission Mode Project

- The e-Panchayat project seeks to automate the internal workflow processes of approximately 2.71 lakh Panchayats or equivalent bodies, benefiting around 30 lakh elected members and about ten lakh PRI functionaries. In addition, the Government has introduced an application called AuditOnline under the e-Panchayat Mission Mode Project to facilitate online audits of Panchayat accounts and maintain detailed records of internal and external audits.

e-Gram SWARAJ

- On National Panchayati Raj Day on 24 April 2020, e-Gram SWARAJ (https://egramswaraj.gov.in/) was launched to introduce digital Panchayats for rural India. The platform provides a complete profile of the Gram Panchayat, including demographic details, finances, and activities outlined in the Gram Panchayat Development Plan (GPDP). It also integrates with the Public Financial Management System (PFMS) to enable real-time payments and better financial management. 2.52 lakh Gram Panchayats have prepared and uploaded their GPDPs for FY24 on e-Gram SWARAJ.

Bhu-Aadhaar

- The Identification Parcel Number (ULPIN) or Bhu-Aadhaar is a 14-digit identification number assigned to a land parcel based on its longitude and latitude coordinates. It aims to facilitate demarcation, identification, and standardisation of land parcels, enabling different Government departments to provide land-related services to citizens, including multi-departmental services. Proper land statistics and land accounting through ULPIN would help develop land banks and an Integrated Land Information Management System (ILIMS). ULPIN has been rolled out in 29 states, generating approximately 14.94 crore ULPINs.

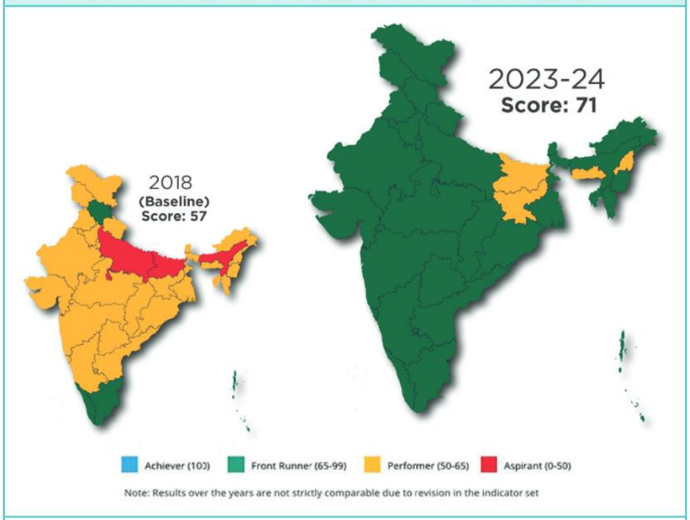
SVAMITVA Scheme

- SVAMITVA (Survey of Villages and Mapping with Improvised Technology in Village Areas) is a Central Sector Scheme launched in 2020 to provide the 'Record of Rights' to rural household owners. It aims to enable property monetization, reduce disputes, and facilitate comprehensive village-level planning. The drone survey has been completed in 2.90 lakh villages and 1.66 crore property cards have been prepared for 1.06 lakh villages. The scheme has been implemented in Haryana, Uttarakhand, Puducherry, Andaman and Nicobar Islands, and Goa.

Towards Sustainable Development

- **India's Commitment to SDGs**
  - India is actively working towards achieving the Sustainable Development Goals (SDGs) by 2030, showing resilience despite global economic challenges. The country's efforts are reflected in steady progress reported by NITI Aayog's SDG India Index.
- **Key Interventions:** Significant government initiatives include:
  - Pradhan Mantri Awas Yojana
  - Ujjwala Yojana
  - Swachh Bharat Abhiyan
  - Jan Dhan Yojana
  - Ayushman Bharat-PMJAY
  - Ayushman Arogya Mandir
  - PM-Mudra Yojana
  - Saubhagya
  - Start-up India
  - **SDG India Index Progress:** India's composite score has improved from 57 (2018) to 71 (2023-24).

Chart VII.16: State/UT wise performance on SDG India Index



Source: NITI Aayog's SDG India Index 2023-24

Progress has been notable in Goals 1 (No Poverty), 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation, and Infrastructure), and 11 (Sustainable Cities and Communities).

- **State and UT Performance:** The SDG India Index 2023-24 shows improved scores for states (57 to 79) and UTs (65 to 77). Ten new States/UTs, including Uttar Pradesh and Assam, are now in the Front Runner category. Fastest improving states between 2018 and 2023-24 are Uttar Pradesh (+25), J&K (+21), and Uttarakhand (+19).

Way Forward:

- **Empowerment and Efficiency:** India's economy is advancing with a focus on empowerment, efficient service delivery, and private sector and civil society participation. Ensuring basic necessities is essential for citizen participation and sustained growth. Digitisation in healthcare, education, and governance

Chart VII.15: India's progress in SDGs

	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 15	SDG 16
2023-24	72	52	77	61	49	89	96	68	61	65	83	78	67	75	74
2020-21	60	47	74	57	48	83	92	61	55	67	79	74	54	66	74
2019-20	50	35	61	58	42	88	70	64	65	64	53	55	60	66	72
2018	54	48	52	58	36	63	51	65	44	71	39			90	71

Source: NITI Aayog's SDG India Index 2023-24

181 The composite score is the arithmetic mean of the Goal score for 16 Goals, for each State/UT, assigning equal weight to each Goal.

enhances the impact of welfare spending.

- **Education Transformation:** The National Education Policy (NEP) 2020 aims for foundational literacy and numeracy for every child by the third grade. Addressing COVID-induced learning loss is crucial.
- **Healthcare Advancements**: Ayushman Bharat is saving lives and preventing debt. Mental health and well-being are critical, requiring destigmatisation, community involvement, and specialised resources.
- **Women-Led Development:** Women's social, economic, and political empowerment is progressing through policy and social change. Enhancing women's asset ownership remains a priority for fairness and economic gains.
- **Rural Development:** Quality of life in rural areas is improving through various programmes. The self-help movement benefits from professional marketing and management assistance. RSETIs can act as district hubs for skill development and enterprise.
- **Effective Implementation:** The success of social programmes depends on effective governance and unity at all government levels. Streamlining ground-level operations is necessary to maximise the efficiency of welfare spending.
- **Human Development Focus:** Human development is both the means and end of economic development. India is committed to progress but remains focused on accelerating its achievements.

GLOSSARY:

TERMS	MEANINGS
Social Infrastructure	It includes assets which provides for social services such as education, health, washing and sanitation facilities, housing, etc.
Out of pocket expenditure	It represents the expenditures borne directly by a patient when insurance does not cover the full cost of the health good or service
Household Consumption Expenditure Survey	It collects information on consumption of goods and services by the households

CHAPTER 8: EMPLOYMENT AND SKILL DEVELOPMENT: TOWARDS QUALITY

- **Introduction**
- **Current Employment Scenario**
- **Youth and female employment**
- **The Evolving Landscape of Jobs in India**
- **Requirement of Job Creation until 2036**
- **Developments and Progress in Skilling**
- **Way Forward**

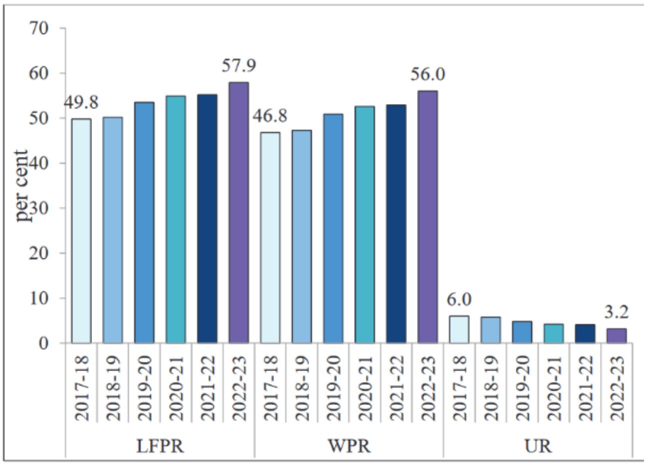
Introduction:

- Employment is crucial for linking economic growth to prosperity. This chapter explores various aspects of employment and skill development in India, including the current employment situation, workforce transformation, and government programs.
- It examines new forces shaping the labor market (e.g., AI, gig work), estimates job creation needs, and proposes agro-processing as a potential sector for job growth. It also discusses the importance of a care economy for supporting women's workforce participation.

Current Employment Scenario

- Over the past decade, India's employment landscape has transformed positively due to economic reforms, technological advancements, and a focus on skill development, essential for generating productive employment.
- The annual Periodic Labour Force Survey (PLFS) indicates a declining unemployment rate since the COVID-19 pandemic, along with an increase in the labor force participation rate (LFPR) and worker-to-population ratio (WPR), with urban unemployment dropping to 6.7% by March 2024.

Improving Labour Market Indicators as per PLFS



Source: Periodic Labour Force Survey (PLFS) annual reports. MoSPI
Note: LFPR: labour force participation rate, WPR: worker population ratio, UR: unemployment rate

- The workforce is estimated at approximately 56.5 crore, with over 45% employed in agriculture, 11.4% in manufacturing, 28.9% in services, and 13% in construction.
- A significant portion (57.3%) of the workforce is self-employed, highlighting a shift in female participation, especially in rural areas, towards self-employment in agriculture and related activities.

Youth and female employment

- India's demographic dividend presents an opportunity for sustained economic growth, with the youth unemployment rate declining from 17.8% in 2017-18 to 10% in 2022-23, indicating better youth labor force participation.

- Youth formal employment has shown an upward trend, with two-thirds of new EPF subscribers aged 18-28 years, reflecting an increase in youth employment alongside population growth.
- The female labor force participation rate (FLFPR) has risen significantly, especially in rural areas, increasing by 16.9 percentage points from 2017-18 to 2022-23, attributed to factors like improved agricultural output and enhanced access to amenities.
- Employment in the organized manufacturing sector has recovered post-pandemic, surpassing pre-pandemic levels, with 42% of factories and 45% of workers located in rural areas benefiting from growing wages per worker.
- Smaller factories dominate the organized manufacturing landscape, yet employment growth is more pronounced in larger factories (more than 100 workers), which offer better wages and improved job quality.
- The sectoral analysis reveals that food products remain the largest employer in factories, while sectors such as computer and electronics, rubber and plastics, and chemicals are emerging as key growth areas for employment.
- The EPFO payroll data indicates a consistent rise in registered employment, with net payroll additions increasing from 61.1 lakh in FY19 to 131.5 lakh in FY24, supported by recovery efforts during the pandemic.

Initiatives to foster job creation and workers' welfare

- Launched in 2015, the **National Career Service (NCS) Portal** offers employment and career services. By 31 March 2024, it has attracted 4.1 crore jobseekers and 25.6 lakh employers. The initiative includes 407 Model Career Centres and over 46,000 job fairs, with a 52 per cent increase in candidates shortlisted for jobs in FY24 compared to FY23, indicating a more competitive job market.
- **The e-Shram portal** is the first-ever national database of unorganised workers with more than 29 crore workers registered. The portal has been integrated with the NCS portal to facilitate job search and aims to integrate with other relevant portals of different central Ministries/Departments in order to facilitate access of different Central Government schemes to unorganised workers at one place.
- In October 2020, the Government introduced the **Aatmanirbhar Bharat Rojgar Yojana (ABRY)** to boost employment with social security benefits post-COVID-19 job losses. By 31 March 2024, the scheme benefited 60.5 lakh individuals across 1.5 lakh establishments.
- The Government has launched two significant contributory pension schemes to ensure minimum pension for all workers. **The Atal Pension Yojana (APY),** launched in 2015, has more than 6.5 crore subscribers now. More than 50 lakh workers have enrolled under Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) scheme, launched in 2019.
- **Affordable insurance programmes**: Life and Disability cover is provided through Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) of ₹2 lakh at an annual premium of ₹436 and ₹20 only.
- **The new Labour Codes** now provide social security benefits to gig and platform workers via a Social Security Fund, financed by contributions from the Central and State Governments, Aggregators, CSR etc. Additionally, the definition of Inter-State Migrant labour has been simplified.
- **PM Street Vendor's AatmaNirbhar Nidhi (PM SVANidhi) S**cheme, launched in June 2020 to facilitate collateral-free working capital loans to street vendors has more than 64 lakh beneficiaries to its credit.
- **The One Nation One Ration Card programme**, launched in 2019, has enhanced migrant workers' welfare by allowing portable food security across India. Till December 2023, it facilitated over 124 crore portability transactions.
- **Prime Minister's Employment Generation Programme (PMEGP):** The Government is implementing PMEGP for assisting entrepreneurs in setting up of new units in the non-farm sector. It aims to provide employment opportunities to traditional artisans/ rural and urban unemployed youth at their doorstep. Since 2018-19 to 30 January 2024, estimated employment generated (no. of persons) are 37.46 lakhs.
- **Deendayal Antyodaya Yojana – National Urban Livelihoods Mission: (DAY-NULM**): The Mission aims to reduce poverty and vulnerability of the urban poor households by enabling them to access self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis. Since 2018-19 to 30 January 2024, estimated number of skill trained candidates placed under DAY- NULM are 5.48 lakhs.
- **Pradhan Mantri Mudra Yojana (PMMY):** PMMY is being implemented by the Government for facilitating self-employment. Under PMMY, collateral free loans up to ₹10 lakh, are extended to micro/small business enterprises and to individuals to enable them to set up or expand their business activities. Around 47.7 crore loans were sanctioned under the scheme as on 29 March 2024.
- **Stand Up India:** Launched on 5 April, 2016, the scheme aims to promote entrepreneurship among the SC/ST and Women by facilitating bank loans of value between ₹10 lakh and ₹1 crore to at least one SC/ ST borrower and one-woman borrower per bank branch of Scheduled Commercial Banks for setting up greenfield enterprises in trading, manufacturing, services sector and in activities allied to agriculture. In FY20, the Stand-Up India Scheme was extended for the entire period coinciding with the 15th Finance Commission period of 2020-25. As of 20 May 2024, loans of ₹51,724 crore have been sanctioned to more than 2.29 lakh accounts under the scheme.
- **Start Up India**: Sustained efforts by the Government spanning "simplification and handholding", "funding

support and incentives" and "industry academia partnership and in cubation" have led to an increase in the number of Department for Promotion of Industry and Internal Trade (DPIIT) recognised startups from over 300 in 2016 to 1,17,254, as on 31 December 2023.16 These recognised startups are reported to have created over 12.42 lakh direct jobs creating significant economic impact.

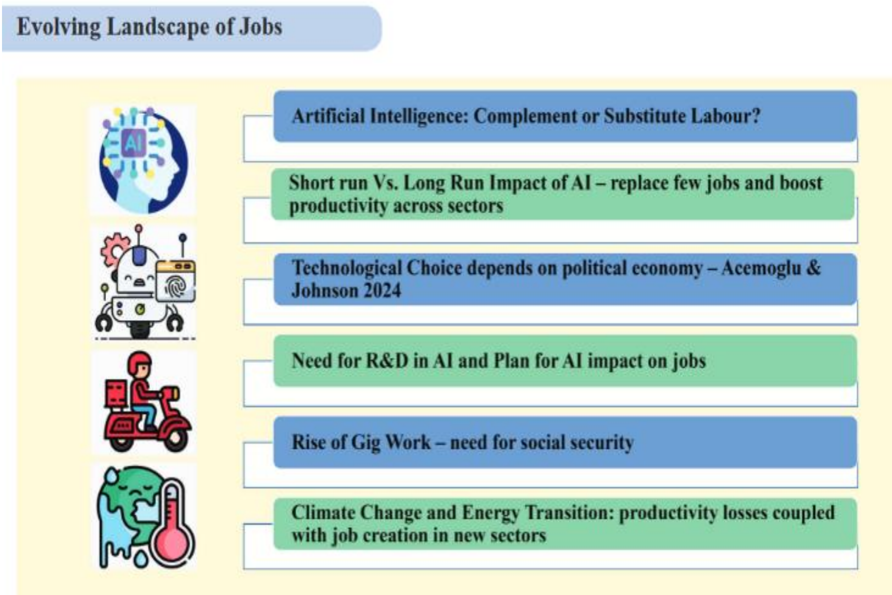
- **Programmes for promoting rural entrepreneurship**, including DAY-NRLM, RSETIs etc., as discussed in the chapter on Social Infrastructure.
- **Flagship programmes**: Besides these initiatives, various flagship programmes of the Government such as Make in India, Digital India, Smart City Mission, Atal Mission for Rejuvenation and Urban Transformation, Housing for All, Infrastructure Development and Industrial Corridors are also oriented towards generating employment opportunities.

Government initiatives to boost employment generation:

- The Indian Government has implemented various initiatives to boost employment generation, including the Production Linked Incentive (PLI) scheme and increased capital expenditure, alongside measures to promote worker welfare.
- **Key initiatives include:**
  - **National Career Service (NCS) Portal:** Launched in 2015, it has registered 4.1 crore jobseekers and 25.6 lakh employers by March 2024, facilitating job searches and career services.
  - **e-Shram Portal:** A national database for unorganized workers with over 29 crore registrations, aiming to integrate with other government schemes for better access to services.
  - **Aatmanirbhar Bharat Rojgar Yojana (ABRY):** Introduced in 2020 to support employment recovery post-COVID-19, benefiting 60.5 lakh individuals by March 2024.
  - **Atal Pension Yojana (APY)** and **Pradhan Mantri Shram Yogi Maan-Dhan Scheme:** Pension schemes aimed at ensuring minimum pension for all workers with millions of subscribers.
  - **Affordable Insurance Programs:** Low-cost life and disability insurance offerings to workers.
  - **Support for Gig Workers:** New labor codes provide social security benefits for gig and platform workers through a Social Security Fund.
  - **PM Street Vendor's Aatma Nirbhar Nidhi:** Offered collateral-free loans to over 64 lakh street vendors.
  - **One Nation One Ration Card:** Enhanced food security portability for migrant workers, facilitating over 124 crore transactions.
  - **Prime Minister's Employment Generation Programme (PMEGP):** Supports entrepreneurs in the non-farm sector, generating approximately 37.46 lakh jobs since 2018-19.
  - **Deendayal Antyodaya Yojana – National Urban Livelihoods Mission:** Aims to improve livelihoods for urban poor, with 5.48 lakh candidates trained since 2018-19.
  - **Pradhan Mantri Mudra Yojana (PMMY):** Provides collateral-free loans to micro/small businesses, with 47.7 crore loans sanctioned.
  - **Stand Up India:** Promotes entrepreneurship among SC/ST and women with loans between ₹10 lakh and ₹1 crore.
  - **Startup India:** Increased startup recognition from 300 in 2016 to over 1.17 lakh by December 2023, contributing to the creation of 12.42 lakh jobs.
- Additionally, the government has initiated various flagship programs, such as Make in India and Digital India, aimed at generating employment opportunities.
- The simplification of labour laws through the rationalization of 29 laws into four Labour Codes aims to enhance transparency and accountability while promoting employment creation.
- Despite these initiatives, there are still regulatory hurdles to expedite employment generation, necessitating further efforts for smoother implementation at the state level.

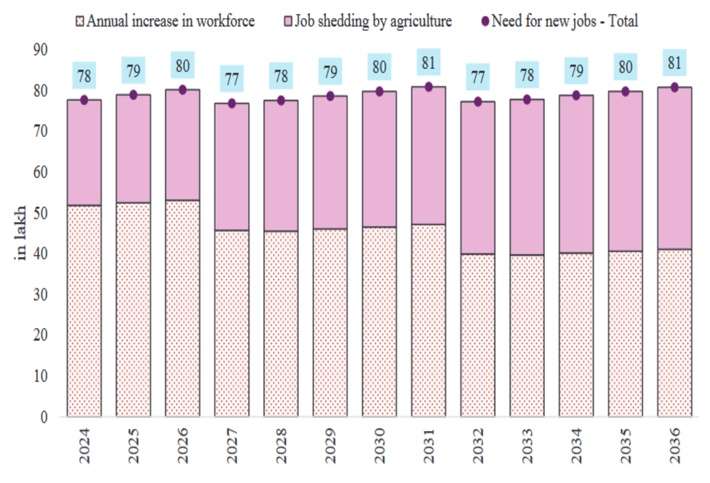
The Evolving Landscape of Jobs in India

- The evolving job landscape in India is influenced by the transition to middle-income status, global disruptions like the fourth industrial revolution, and geopolitical changes, requiring adaptability from the workforce.



- According to the World Economic Forum's Future of Jobs report, 23% of jobs globally are expected to change in the next five years, with a net loss of 14 million jobs, driven by both new job creation and eliminations.
- The fourth industrial revolution involves technological advancements such as AI, machine learning, IoT, and automation, altering how work is performed and affecting employment dynamics.
- The demand for digital roles is increasing, with fast-growing job categories expected to include AI specialists, sustainability experts, and data analysts, spurred by the COVID-19 pandemic.
- AI, heralded as a transformative technology, poses risks of job displacement, particularly in sectors reliant on routine tasks, while also offering opportunities for improved productivity.
- Historical analysis shows that while technological advancements can enhance productivity, they can simultaneously disrupt labor markets if workers lack adequate support and bargaining power.
- Research indicates that generative AI may reshape jobs more than it replaces them, with a significant portion of global employment exposed to AI, affecting both high and low-skill jobs.
- India's younger workforce is uniquely positioned to benefit from AI integration, but sectors like BPO may face significant job losses due to automation.
- The gig economy in India is expanding, driven by tech-enabled platforms, and is projected to grow to 23.5 million workers by 2029-30, providing flexible employment opportunities but requiring effective social security measures.
- Climate change poses challenges and opportunities for employment, with potential job losses due to extreme weather and significant job creation in the renewable energy sector as part of green initiatives.
- Policies to support worker well-being in the face of climate-related risks and innovative solutions like parametric insurance for unorganized workers are essential for mitigating the negative impacts of climate change on employment.
- Overall, the acceptance of change, encouragement of innovation, and proactive planning are crucial for navigating future job market complexities and harnessing available opportunities.

Chart VIII.24: Annual requirement for non-farm job creation 2024-2036



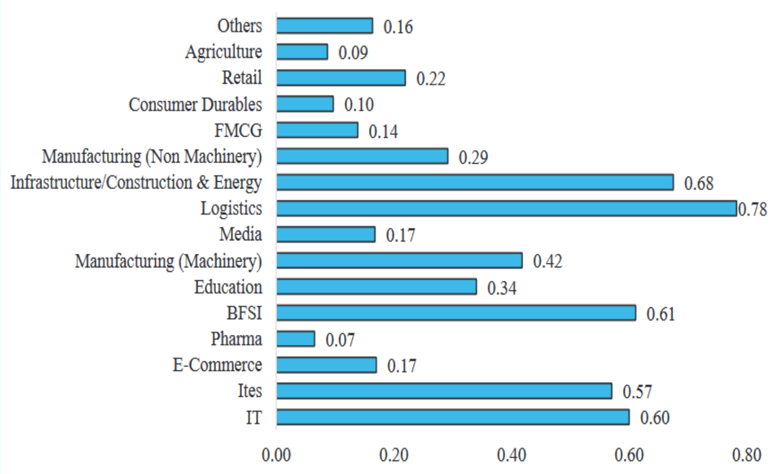
Source: Calculated using PLFS, MoHFW population estimates.

Requirement of Job Creation until 2036

India needs to generate an average of nearly 78.5 lakh jobs annually in the non-farm sector until 2030 to accommodate the rising workforce, driven by a rising female workforce participation rate and a decline in the share of agriculture in employment.

- **Current Estimates:** The workforce projections for 2022-23 indicate a constant workforce participation rate for men and a steadily increasing rate for women, with expectations of a gradual decline in agricultural jobs over time.
- **Existing Schemes:** There is potential to enhance job creation through existing schemes such as the Production Linked Incentive (PLI) and MITRA Textile scheme while improving their implementation.
- **Agro-Processing Potential:** The agro-processing sector presents multiple opportunities for rural employment and growth, acting as a bridge between agriculture and industrial sectors, while addressing the low value addition in agriculture.

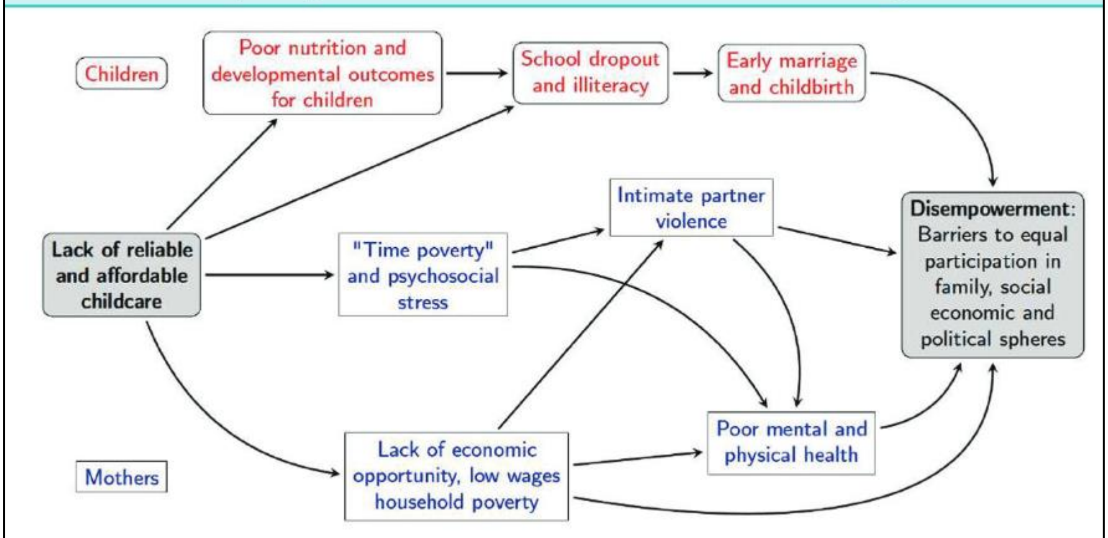
Chart VIII.26: Sectoral distribution of flexi workforce in million



Source: Inputs from Indian Staffing Federation

- **Demand for Rural Jobs:** The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) highlights a significant demand for low-skill rural jobs, particularly among women, indicating a potential shift from MGNREGS labor to more productive ventures.
- **Value Addition in Agriculture:** India has a low level of food processing compared to global standards, which could be improved to enhance local agricultural productivity and employment.
- **Market Trends:** Growing demand for diverse and local food products presents opportunities for greater agricultural output connected with food processing units, with the Indian food processing market expected to reach USD 535 billion by 2025.
- **Convergence of Programs:** The agro-processing sector can benefit from synergistic efforts among various government programs, utilizing networks and organizations like NABARD and self-help groups to augment support for rural enterprises.
- **Utilization of Agricultural Potential:** India's diverse agro-climatic zones offer opportunities for productive engagement of the rural workforce, particularly women looking for part-time employment and educated youth skilled in agro-processing.

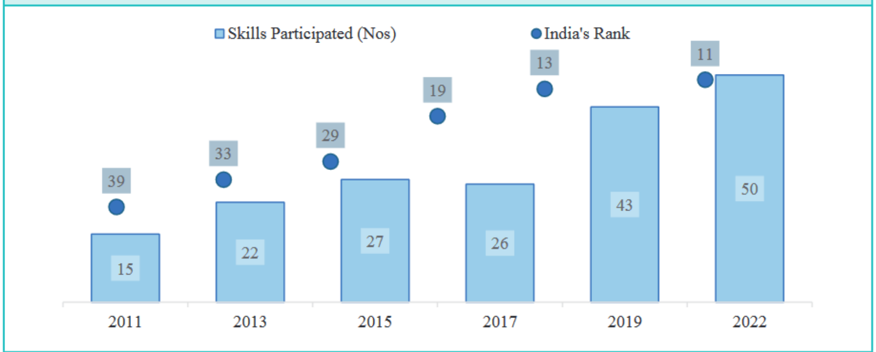
Chart VIII.27: Impact of lack of access to childcare: A conceptual model



Developments and Progress in Skilling

- **Increase in Vocational Training:** The percentage of individuals aged 15-29 receiving formal vocational/technical training has risen, indicating progress in skill development initiatives.
- **Skill India Digital Platform:** Launched to improve access to skilling, education, and entrepreneurship, further supporting government efforts in skill development.
- **WorldSkills Participation:** India's increasing participation and performance at WorldSkills Competitions signify progress in vocational education and skill excellence.

Chart VIII.29: India at WorldSkills competition



Source: MSDE Annual Report 2022-23

- **Flagship Skill Development Schemes:**
  - **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** Over 14.26 million trained with reforms to enhance industry relevance, including increased female participation from 42.7% to 52.3%.
  - **National Apprenticeship Promotion Scheme (NAPS):** Engaged 3.24 million apprentices, experiencing a rise in female participation from 7.7% to 20.8%.
- **Entrepreneurship Training:** Institutions like NIESBUD and IIE have provided training to hundreds of thousands of beneficiaries, promoting entrepreneurship.
- **Industry Collaboration:** Skill India collaborates with industries for skill development, with initiatives like the Skill Impact Bond targeting youth and aiming for a high proportion of female participants.
- **PM Vishwakarma Scheme:** Launched to support traditional artisans with skills, credit, and marketing assistance, demonstrating a commitment to upgrade traditional vocations.
- **Challenges in Apprenticeships:** Despite potential, challenges include poor completion rates, lack of employer engagement, and negative perceptions of vocational training. Less than 50% of apprentices complete their training.

- **Recommendations for Improvement:**
  - Enhance flexibility in apprenticeship terms and reduce government oversight to improve employer engagement.
  - Establish mechanisms to link skills acquired in apprenticeships to gainful employment opportunities through better industry coordination.
- **Informal Sector Opportunities:** Targeting skill development in the informal sector can enhance productivity and earnings for unskilled and semi-skilled workers, indicating a need for tailored interventions.
- **Data-Driven Decision Making:** Collecting statistical data on apprenticeship efficacy across sectors will help optimize the program and better align training with industry needs.

- **Partnering with industry for skilling**
- Industry connection is crucial to any large-scale skilling programme, enabling contemporary relevance and employability and ascertaining demand to absorb the newly skilled workforce. In cognisance of this, the Skill India mission actively collaborates with the industry through National Skill Development Council (NSDC)-driven partnerships for skill development, reskilling, and upskilling. Until March 2024 (starting date to be added), 131 projects have been undertaken by NSDC, with 62 corporate organisations benefitting over 3.10 lakh persons across the country, including 42 aspirational districts.
- **Skill Impact Bond**
- Launched in 2021, the Skill Impact Bond leverages an innovative and results-based finance mechanism - Development Impact Bond99 model to attract private sector funds and expertise for skill development, job placements, and retention. This initiative by NSDC and its coalition partners100 targets training 50,000 youth, ensuring at least 60 per cent are female, through selected and monitored NSDC-affiliated training partners over four years. Between November 2021 and March 2024, 29,365 candidates have been enrolled over five cohorts, 23,464 have been certified, 19,209 have been placed and 13,853 reported job retentions. The program has reported 74 per cent women enrolment so far. Further, the Directorate **General of Training (DGT) has also taken the following initiatives under Industry Partnerships:**
- **Under the Flexi MoU Scheme** with prominent industry partners such as Maruti Suzuki India Limited, Gurugram, NMDC Chhattisgarh, Toyota Kirloskar Motor Pvt. Ltd, etc. - about 9600 trainees have been trained under this initiative from March 2019 to March 2024.
- **Under the Dual System of Training (DST) initiative**, skilling institution trainees get first-hand workplace experience. During the 2022 session, about 978 ITIs and 37,865 trainees were covered under DST.
- DGT has collaborated with IT frontlines like IBM, Microsoft, Cisco, Adobe, Amazon Web services, etc., to enable trainees to become Industry Ready as per IR 4.0, and more than 21.5 lakh trainees have been trained under these collaborations between November 2019 and March 2024.
- Besides mandated training of Instructor trainees, NSTIs are also Skilling/Re-skilling/ Upskilling the existing industry workforce by partnering with ISRO, ONGC, Indian Railways, Naval Ship Repair yard, Naval Ship Dockyard, and BHEL. Under this initiative, about 1400 participants were trained during the FY24 session.
- DGT is also collaborating with industry partners for infrastructure development/upgradation in NSTIs/ITIs. Notable collaborators include Dassault for Aeronautical Structure and Equipment Fitter, Pidilite and Jaguar for the Plumbing sector, Skoda for the automobile industry, and HAL and Siemens for advanced CNC machinery training, among others.

Conclusion and Way Forward

- India's employment situation has shown positive transformation over the last decade, with improvements in formalization, skill development, entrepreneurship, and industry diversification.
- The government is focusing on creating an ecosystem for employment generation through ease of doing business, lower logistical costs, skill development, and easy credit for entrepreneurship.
- Challenges remain, including formalizing the workforce, creating jobs in sectors that can absorb workers shifting from agriculture, and ensuring social security benefits for regular wage/salaried employees.
- The agro-processing sector is highlighted as a potential area for large-scale job creation, especially for rural youth and women.
- The impact of AI and automation on the job market is acknowledged, with a call for India to invest in research and steer technological change towards shared prosperity.
- Development of affordable and quality childcare and elderly care infrastructure is crucial for increasing female participation in the workforce.
- The corporate sector's responsibility in job creation and fair distribution of income between capital and labor is emphasized.
- Skilling is presented as a challenge that can be addressed through market-based solutions, with the government's role being to remove regulatory hurdles.

CHAPTER 9: AGRICULTURE AND FOOD MANAGEMENT: PLENTY OF UPSIDE LEFT IF WE GET IT RIGHT

- **Introduction**
- **Agriculture Production: Performance and Promoting Crop Diversification**
- **Allied Sectors: Animal Husbandry, Dairying and Fisheries are significant**

- **growth drivers**
- **Food processing sector (FPI): Processing Potential**
- **Food Management: Social net for food security**

Introduction:

The Indian agriculture sector supports 42.3% of the population and contributes 18.2% to GDP, with an average annual growth of 4.18% over the past five years. Government initiatives like MSP, institutional credit, crop diversification, digitization, and sustainable farming have positively impacted the sector. Despite being a major agricultural producer, India faces low crop yields due to fragmented land holdings, low investment, and inadequate marketing infrastructure. Government schemes like PM-KISAN, Per Drop More Crop, and e-NAM aim to improve productivity. Livestock and fisheries sectors have shown robust performance, significantly increasing their share in agricultural GVA.

Chart IX.1: Growth of agriculture and allied sectors

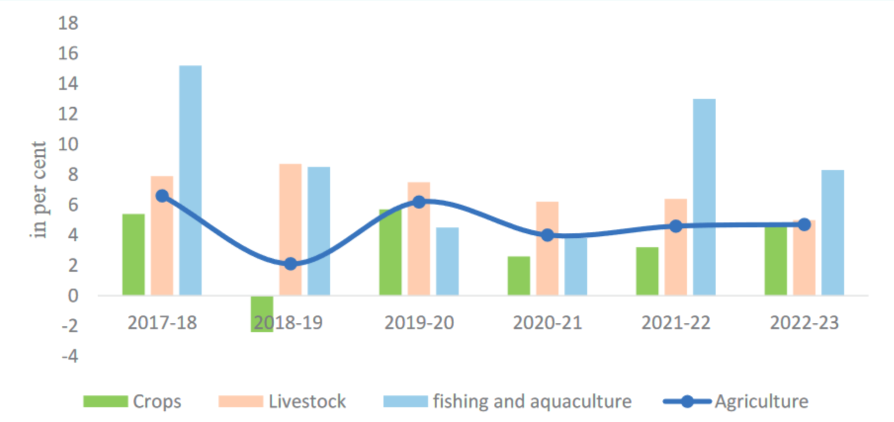
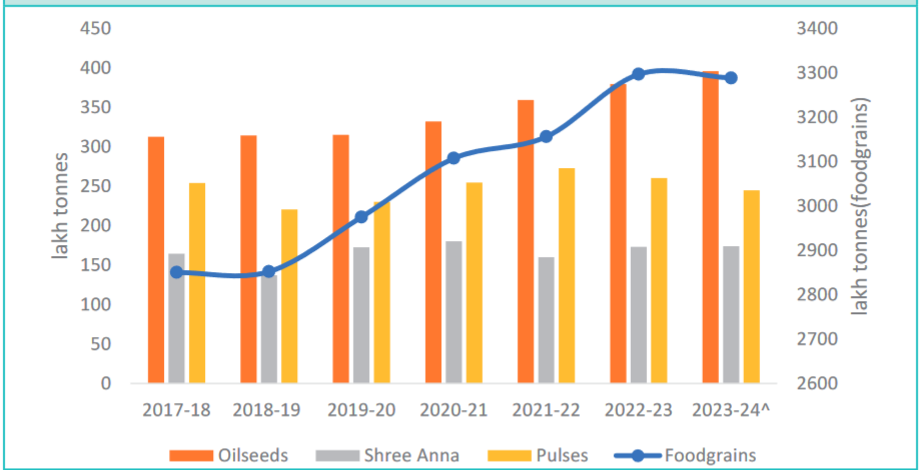


Chart IX.3: Production of major crops



^As per third advance estimates
Source: Ministry of Agriculture and Farmers Welfare

Agriculture Production: Performance and Promoting Crop Diversification

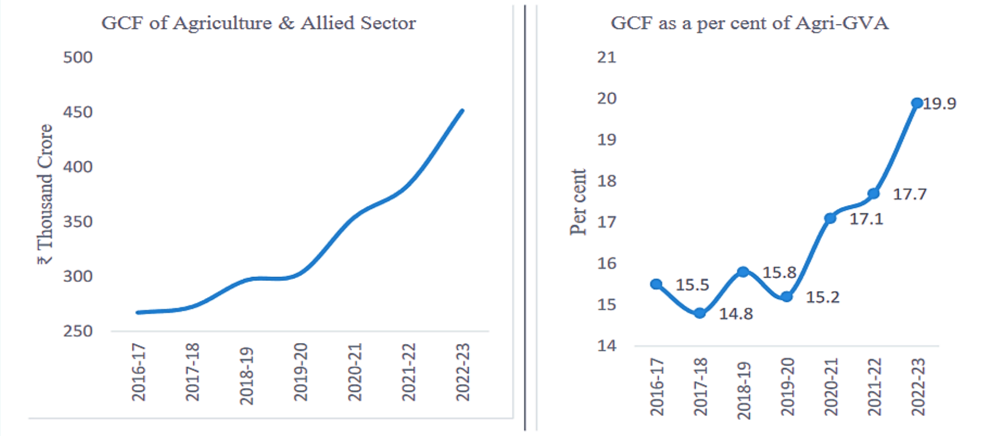
- **Foodgrain Production:**
  - 2022-23: Record high of 329.7 million tonnes.
  - 2023-24: Slightly lower at 328.8 million tonnes due to poor and delayed monsoons.
- **Oilseeds Production:**
  - 2022-23: 41.4 million tonnes.
  - 2023-24: Slight increase noted.
- **Nutri-Cereals and Pulses:**
  - Nutri-cereals (Shree Anna) production up by 1% from previous year.
  - Tur production was estimated at 33.85 lakh tonnes (33.12 LT last year).
  - Lentil (Masur) production is estimated at 17.54 LT (1.95 LT higher than last year's 15.59 LT).
- **Government Initiatives:**
  - **Crop Diversification Programme (CDP):**
    - Part of Rashtriya Krishi Vikas Yojana (RKVY).
    - Promotes production technologies for alternate crops and diversification from paddy.
  - **National Food Security Mission (NFSM):**
    - Enhances production and productivity of foodgrain and commercial crops.
    - Implementation of crop production and protection technologies.
- **Minimum Support Price (MSP):**
  - Higher MSP to encourage crop diversification:
    - **Lentils (Masur):** 89% over the cost of production.
    - **Tur:** 58% over the cost of production.
    - **Bajra:** 82% over the cost of production.
    - **Safflower and Soybean (Yellow):** 52% over the cost of production.
- **National Food Security Mission-Oilseeds & Oil Palm (NFSM-OS&OP):**
  - Implemented since 2018-19 to increase vegetable oil availability.
  - **Area coverage of oilseeds:**
    - Increased from 25.60 million hectares (2014-15) to 30.08 million hectares (2023-24).
  - **Domestic edible oil availability:**
    - Increased from 86.30 lakh tonnes (2015-16) to 121.33 lakh tonnes (2023-24).
  - **Imported edible oil percentage:**
    - Reduced from 63.2% (2015-16) to 57.3% (2022-23).
  - **Incentives:**
    - Remunerative MSP for rapeseed and mustard (98% over the cost in 2022-23).

Investments and Credit Access in Indian Agriculture
Gross Capital Formation (GCF) in Agriculture
Current Status

- GCF grew by 19.04% in 2022-23
- GCF as a percentage of Gross Value Added (GVA) increased from 17.7% (2021-22) to 19.9% (2022-23)

- Average annual GCF growth from 2016-17 to 2022-23: 9.70%

Chart IX.4: GCF of agriculture & allied sector and GCF as a per cent of Agri GVA



Source: Second Advance Estimates of National Income, National Statistical Office (PIB Press release (various issues Office

Challenges

- Need to further boost investment to double farmers' income
- Required annual growth rate in agriculture investment: 12.5%
- Land fragmentation adversely affecting farmers' investments
- Private corporate sector's share remains below 2%

Subsidies in Agriculture

- More than doubled between 2011-12 and 2020-21
- Fastest increase seen in fertilizer and power subsidies
- Public investments grew at the same rate as subsidies but remained at about one-third of subsidies

Impact

- Support short-term increases in productivity and farmer incomes
- Influence farmer behavior towards adopting better quality seeds, appropriate fertilizer use, and improved access to farm machines

Government Initiatives to Boost Investment

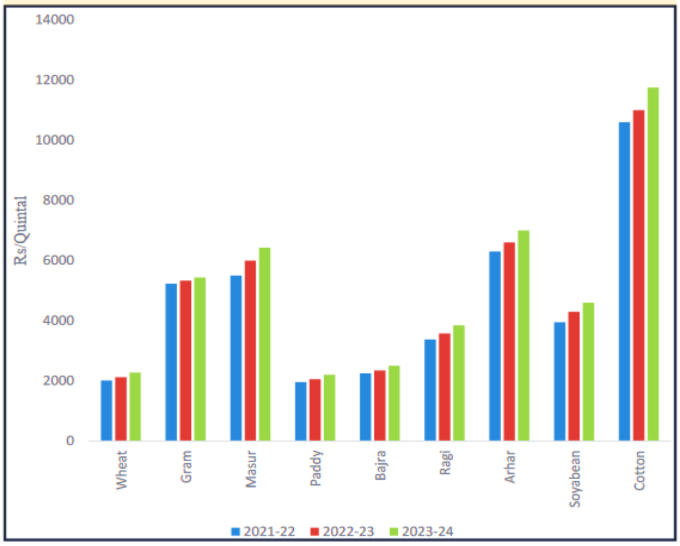
1. **Agriculture Marketing Infrastructure (AMI) sub-scheme**
    - Offers capital subsidies for storage infrastructure
    - 48,357 projects sanctioned with ₹4,570 Crore released as subsidy
    - 20,878 additional projects in progress with ₹2,084 Crore released
2. **Agriculture Infrastructure Fund (AIF)**
    - Launched with ₹1 lakh Crore financing facility (FY 2020-21 to FY 2025-26)
    - Provides medium-term debt financing for post-harvest management and community farming
    - As of July 2024, mobilized investment of ₹73,194 Crore, supporting:
        - 17,196 custom hiring centers
        - 14,868 primary processing units
        - 13,165 warehouses
        - 2,942 sorting and grading units
        - 1,792 cold storage projects
        - 18,981 other projects
3. **Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)**
    - Offers credit-linked financial assistance through grants-in-aid
    - Aims to build efficient supply chain management from farm to retail
    - 1,044 projects completed by March 2024
    - 1,685 projects approved with:
        - Total project cost: ₹32.78 Thousand Crore.
        - Approved subsidy: ₹9.3 Thousand Crore.

Assured Remunerative Prices and Other Income Support Measures

Agricultural Price Support

- **Minimum Support Price (MSP):** Ensures farmers get remunerative returns, stabilizes the supply of staples at reasonable prices.
- **Policy Implementation:** Encourages production of food grains, pulses, oilseeds, and nutri-cereals by guaranteeing a minimum price.

Fixing MSP at one and half times the all-India weighted average cost of production- assuring remunerative prices to farmers



- **Union Budget 2018-19 Announcement:** MSP set at 1.5 times the cost of production.
- **MSP Increase:** Since 2018-19, MSP for all 22 Kharif, Rabi, and commercial crops increased by at least 50% over the average cost of production.

PM-KISAN

- **Launched:** February 24, 2019.
- **Financial Aid:** ₹6000 per year transferred in three equal installments via Direct Benefit Transfer (DBT).
- **Impact:** Over ₹3.24 lakh crore released to more than 11 crore farmers as of July 10, 2024.

Recent technology interventions in PMFBY

- **Digi-Claim-Payment Module** – A new module has been launched to integrate the National Crop Insurance Programme (NCIP) with public financial management system (PFMS) end-to-end. Now, the government will have visibility of the quantum of eligible claims, claims paid by the Insurance Company and actual claims transferred to beneficiary farmers.
- **Yield Estimation Based on Technology (YES-Tech) is** a technology-based yield estimation mechanism developed after two years of rigorous testing and a pilot that runs across 100 country districts. Nine states, namely, Assam, Haryana, Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh, Tamil Nadu & Karnataka & Odisha, are implementing Yes-Tech from the Kharif 2023 season onwards.
- **Weather Information Network & Data System (WINDS)- is a pioneering initiative to set up a network of Automatic Weather Stations & Rain Gauges at Taluk/ Block and Gram** Panchayat (GP) levels for use of all farmer and farming-oriented services. It is proposed that an automatic rain gauge (ARG) would be installed at every GP and an automatic weather station (AWS) at every block covered under PMFBY.
- **Collection of Real-time Observations and Photographs of Crops (CROPIC)-is an initiative that has been taken up to collect periodic photographs** of crops during their life cycle. These photographs will validate sown and insured crops, assess crop damage when any localised and widespread calamity or climatic condition affects the crops, and act as an input for Technology-based yield estimation models.

Pradhan Mantri Kisan Maandhan Yojna (PMKMY)

- **Objective:** Provides social security to vulnerable farmer families.
- **Benefits:** Monthly pension of ₹3,000 upon reaching 60 years of age.
- **Enrollment:** 23.41 lakh farmers as of July 7, 2024.

Farm Mechanisation

- **Sub Mission on Agricultural Mechanization (SMAM):** Assists states with training, demonstration, and setting up Custom Hiring Centres (CHC).
- **Funding:** ₹7.26 thousand crore allocated from 2014-15 to 2023-24; ₹859.45 crore in 2023-24.
- **Custom Hiring Centres:** 25,527 CHCs established from 2014-15 to 2023-24; 607 in 2023-24.

Making Agriculture Sustainable

- **Challenges:** Overexploitation, natural resource degradation, and climate change impacts.
- **National Mission for Sustainable Agriculture:** Aims to make Indian agriculture resilient to climate change.
- **Rainfed Area Development (RAD):** Enhances productivity and minimizes climatic risks.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** Promotes irrigation and water efficiency.
- **Micro Irrigation Fund (MIF):** Facilitates states in expanding micro irrigation coverage; 90 lakh hectares covered from 2015-16 to 2023-24.

Fertilizer Use and Subsidy Management

- **Current Issues:** Imbalanced use of chemical fertilizers, overuse of urea, nutrient imbalance affecting soil health.
- **PM-PRANAM Initiative:** Encourages states to reduce chemical fertilizer use.
- **Soil Health Card Scheme:** Optimizes nutrient usage.
- **Organic and Natural Farming:** Promotes chemical-free and sustainable farming practices.
- **Fertilizer Subsidy Reform Proposal:** Suggests using Agri Stack and E-RUPI for better targeting and efficient subsidy distribution.

Crop Residue Management

- **Objective:** Address air pollution and manage crop residue.
- **Scheme Implementation:** Subsidizes machinery for crop residue management; large-scale demonstrations of Bio-Decomposer.
- **Impact:** Funds of ₹3.34 thousand crore released; 40,000 CHCs established, 2.95 lakh machines supplied; 24% reduction in stubble burning incidents in 2023 compared to the previous year.

Policy led interventions to improve water management- National and International Experience

- **Automation of Irrigation System**: Narayanpur Left Bank Canal System (Karnataka): The Narayanpur Left Bank Canal (NLBC) system in Karnataka was facing significant challenges such as inadequate water regulation, manual control of gates, and inequitable water distribution. To address these issues, the government implemented an automation system that included over 4,000 automated control and regulating gates, solar-powered integrated gates, and a master VSAT communication system. These interventions have optimised water use efficiency, improved equitable distribution, and enhanced overall agricultural productivity in the region.
- **Diversion-Based Irrigation System:** In the hilly and undulating regions of Barwani and Khargone districts in Madhya Pradesh, the Aga Khan Rural Support Programme (AKRSP) has initiated the development of diversion- based irrigation (DBI) systems. These systems use gravity flow to divert water from streams to

agricultural fields. Since 2016, 13 DBI systems have been operationalised, bringing 111 hectares of land under irrigation and benefiting 93 farmers. The cost-effective nature of these systems, requiring approximately ₹300 per running meter, makes them a viable solution for enhancing irrigation coverage in hilly terrains.

- **Growing Tomatoes Without Soil Using Vertical Farming in Hydroponics:** Vertical farming with hydroponics allows the cultivation of tomatoes without soil, offering numerous benefits such as space efficiency, reduced water usage, and year-round production. This method has been implemented in Port Augusta Farm, South Australia, which features a 4.5-hectare greenhouse powered by a 51,500 m^2 concentrated solar power plant. This plant includes 23,000 mirrors that direct sunlight to a 127-meter-high tower weighing 234 tons.
- **The generated heat serves three purposes: maintaining optimal temperatures in 20 hectares of greenhouses, generating electricity via a turbine to power farm systems, and desalinating** seawater drawn from the nearby Spencer Gulf. The farm produces one million liters of fresh water daily by desalinating seawater from 3 kilometers away. It grows 7,000 tonnes of tomatoes annually, which accounts for 15 per cent of Australia's total crop, on arid land.
- In addition, 180,000 tomatoes are grown hydroponically in stacks without soil, saving 2 million liters of diesel and reducing CO_2 emissions by 15,000 tons compared to traditional farming methods.
- This method entails growing plants in nutrient-rich water solutions customized to their specific requirements. Vertical hydroponic systems can be employed in urban areas, reducing the environmental impact of transportation and offering locally sourced fresh produce.
- **Temporary Flood Water Storage in Agricultural Areas in the Middle Tisza River Basin: In the Middle Tisza River Basin, temporary floodwater storage** in agricultural areas is being used to reduce flood risks and provide extra irrigation. By storing excess floodwater in specific agricultural fields, the region can better control water levels, decreasing the risk of flooding downstream. This method not only safeguards infrastructure but also improves soil fertility by depositing nutrients from the floodwaters, leading to increased agricultural productivity. These interventions demonstrate innovative water management and agricultural productivity approaches, addressing specific regional challenges with tailored solutions.

Allied Sectors: Animal Husbandry, Dairying and Fisheries are Significant Growth Drivers:

- The allied sectors of Indian agriculture are steadily emerging as robust growth centers and promising sources for improving farm incomes.

Livestock Sector Growth:

- Impressive CAGR of 7.38% from 2014-15 to 2022-23 (at constant prices).
- Contribution to total agricultural GVA increased from 24.32% (2014-15) to 30.38% (2022-23)
- Contributed 4.66% to total GVA in 2022-23, boosting availability of milk, eggs, and meat

Fisheries Sector Performance:

- Grew at a compound annual rate of 8.9% between 2014-15 and 2022-23 (at constant prices)
- Contributes 6.72% of the agricultural GVA
- Supports approximately 30 million people, particularly from marginalized communities

The allied sectors of Indian agriculture are steadily emerging as robust growth centres and promising sources for improving farm incomes.

Growth in the livestock sector significantly boosted the per capita availability of milk, eggs, and meat.

The fisheries sector has grown at a compound annual rate of 8.9 per cent between 2014-15 and 2022-23 (at constant prices)

Overall Impact on Agriculture:

- Allied sectors emerging as robust growth centers for Indian agriculture
- Proving to be promising sources for improving farm incomes
- Fisheries sector recognized as a "sunrise sector" with significant economic potential

Initiatives to address scope and functioning of PACS

Several initiatives taken to improve the functioning and scope of work of the PACS include the following:

- With the view to improving efficiency, the PACS/Large Area Multipurpose Societies (LAMP) are being linked with the National Bank for Agriculture and Rural Development (NABARD) through a single National Software Network. So far, proposals for the computerisation of 67009 PACS have been sanctioned across 30 states/UTs, and ₹654 Crore to the States and ₹141 Crore to NABARD have been released.
- A grain storage programme, which will be the world's largest decentralised storage program, is planned in the cooperative sector to ensure food security and reduce wastage. Under this scheme, agricultural infrastructure, such as godowns, custom hiring centres, processing units, fair price shops, etc., are being created through the convergence of various existing schemes of the Government of India at the PACS level. The pilot project in 11 PACS of 11 States has been initiated while the construction of godowns in 500 additional PACS is approved.
- The scope of work of the PACS has been increased to allow them to function as common service centres for better access to e-services, provide LPG distributorship to increase employment opportunities and improve

the financial strength of the PACS, to convert bulk consumer petrol pumps operated by PACS into retail outlets and to give priority for new petrol/diesel pump dealership.

- PACS will function as Janaushadhdi Kendra and Pradhan Mantri Kisan Samridihi Kendra, including as drone entrepreneurs. Further, PACS will be eligible as 'paani samiti' to undertake operations and maintenance work for the piped water supply and will be responsible for setting up decentralised solar power plants at the panchayat level.

Government Initiatives for Livestock Sector:

- **Livestock Health and Disease Control Programme:** Focuses on improving animal health
- **National Livestock Mission:** Promotes entrepreneurship development and per-animal productivity
- **Animal Husbandry Infrastructure Development Fund (AHIDF):**
  - Facilitates investments in dairy processing, meat processing, animal feed plants, and breed improvement
  - Provides 3% interest subvention and up to 25% credit guarantee
  - As of May 2024: 408 projects sanctioned worth ₹13,861 Crore, generating 40,000 direct jobs and benefiting over 42 lakh farmers

Fisheries Sector Achievements and Initiatives:

- Record fish production of 17.54 million tons in 2022-23 (3rd globally, 8% of global production)
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** Aims to enhance seed and fish production and other extension services
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF):**
  - Introduced in 2018-19 with a total fund size of ₹7,520 Crore
  - 121 proposals recommended for ₹5,590 Crore at concessional rates

Overall Approach:

- Recognition of allied sectors' increasing relevance in agricultural growth and farm income
- Focus on enhancing productivity, ensuring animal health, and facilitating infrastructure development
- Comprehensive interventions designed to address sector-specific needs and promote sustainable growth.

Cooperative Societies- Empowering farmers by strengthening communities

Cooperative societies play a crucial role in empowering small and marginal farmers by:

- Aggregating produce
- Enhancing bargaining power
- Ensuring better market access
- Preventing exploitation by middlemen

The government approved a scheme in 2023 to set up **Primary Agriculture Credit Societies (PACS)** in uncovered areas over the next five years.

As of March 2024:

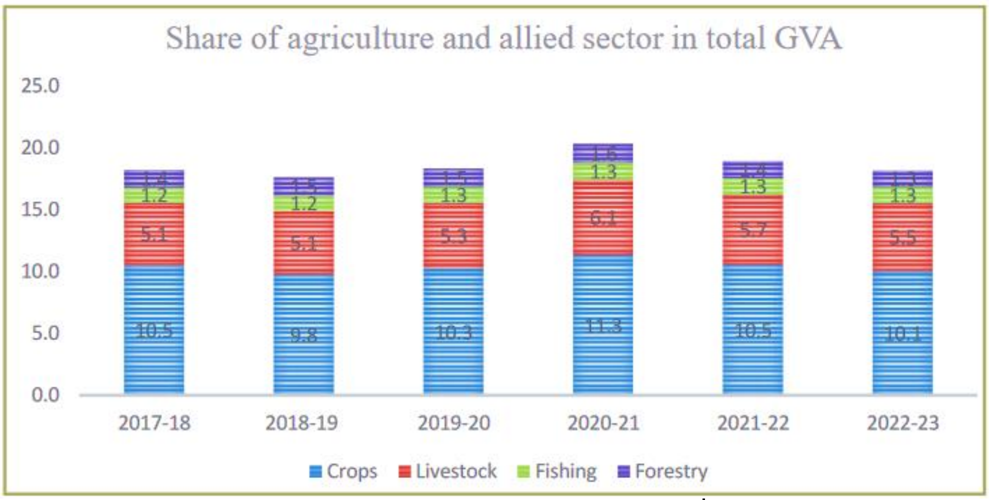
- There are 8.03 lakh single-state cooperatives
- There are 1,614 multi-state cooperatives (MSCs)

Three new national-level MSCs were established:

- National Cooperative Exports Limited (NCEL)
- Bhartiya Beej Sahakari Samiti Limited (BBSSL)
- National Cooperative Organics Limited (NCOL)
  - These new cooperatives aim to promote exports, improve seed access, and support organic product production and marketing.
  - NCEL has received export permissions for various agricultural products to multiple countries.
  - BBSSL and NCOL have received numerous membership applications from across India.
  - The Multistate Cooperative Societies (Amendment) Act, 2023, was enacted to strengthen governance, enhance transparency, and improve accountability in cooperatives.

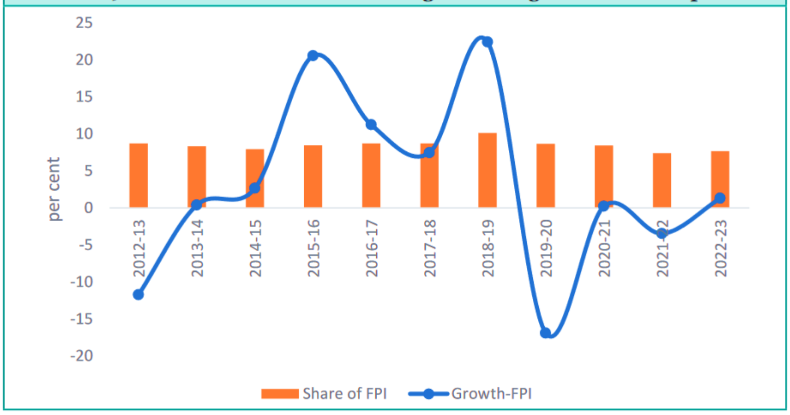
India's Food Processing Industry: Key Highlights

Production Leadership:



- India is the largest producer of milk and the second largest producer of fruits, vegetables, and sugar.
- The sector benefits from reasonably priced agricultural inputs, a vast labor force, and growing consumer demand, providing the foundation for a robust food processing industry.
- This industry reduces wastage, enhances shelf life, adds value to produce, and supports agricultural diversification and commercialization.

Chart IX.9: Share of FPI in manufacturing GVA and growth of FPI in per cent



Source: MoFPI

Economic and Employment Impact:

- The food processing industry is a significant employer in organized manufacturing, accounting for 12.02% of total employment. Agri-food exports, including processed foods, reached USD 46.44 billion in 2022-23, making up about 11.7% of India's total exports.
- The share of processed food exports increased from 14.9% in 2017-18 to 23.4% in 2022-23.
- The sector's GVA rose from ₹1.30 lakh crore in 2013-14 to ₹1.92 lakh crore in 2022-23, constituting 7.66% of GVA in manufacturing.

Government Initiatives:

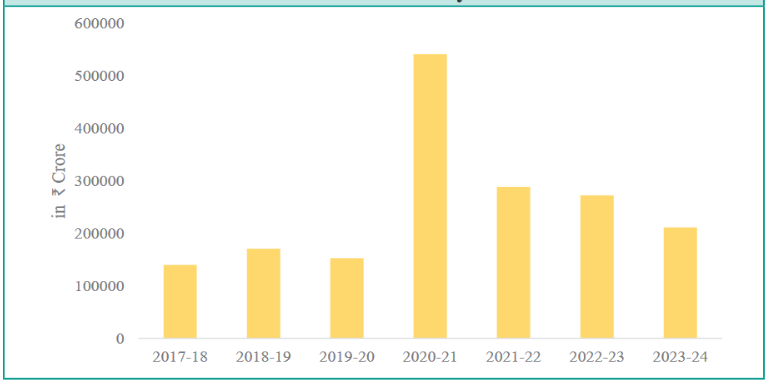
1. **Production Linked Incentive Scheme for the Food Processing Industry** (**PLISFPI**):
   - The Production Linked Incentive Scheme for the Food Processing Industry aims to create global food manufacturing champions and enhance branding and marketing abroad.
   - With 173 applications covered, the scheme has attracted investments of ₹7.69 thousand crore and released ₹1.07 thousand crore in incentives during FY 2021-22 and FY 2022-23.
2. PM Formalization of Micro Food Processing Enterprises scheme (**PMFME**):
   - The PM Formalization of Micro Food Processing Enterprises scheme, with a total outlay of ₹10 thousand crore, provides credit-linked subsidies and capacity building. The scheme has received 353,608 applications, with loans amounting to ₹6.94 thousand crore sanctioned to 86,342 applicants.
   - Extensive training has been provided to beneficiaries and trainers across the states and UTs.
3. **Operation Green**:
   - Initially launched for Tomato, Onion, and Potato (TOP), the scheme now covers 22 perishable crops.
   - It aims to enhance value realization, reduce post-harvest losses, and increase processing capacities.
   - The scheme offers a 50% subsidy on transportation and storage costs for surplus production and grants ranging from 35% to 50% for setting up food processing projects in major producing states.

Food Management and Social Net for Food Security

Objectives and Implementation:

- The main goals of food management in India are to procure food grains from farmers at fair prices, distribute them to consumers at affordable rates, especially to vulnerable sections, and maintain buffer stocks for food security and price stability.
- Key instruments include procurement at Minimum Support Price (MSP) and Central Issue Price (CIP).
- The Food Corporation of India (FCI) manages procurement, distribution, and storage. The Central Government also runs a decentralized procurement scheme to ensure adequate wheat and rice availability in the central pool.

Chart: IX.10: Food subsidy released



Source: Department of Food and Public Distribution

Recent Procurement Statistics:

- As of May 24, 2024, 263.33 LMT of wheat has been procured for the 2024-25 Rabi Marketing Season, benefiting 22.42 lakh farmers.
- Additionally, 489.20 LMT of rice was procured from 98.26 lakh farmers during the 2023-24 Kharif Marketing Season.
- The combined stock of wheat and rice in the central pool has surpassed 600 LMT, ensuring adequate foodgrain availability.

Distribution Programs:

- Food grain distribution is primarily through the National Food Security Act, 2013 (NFSA), and other welfare schemes like PMGKAY.
- The government continues to provide free food grains to about 81.35 crore beneficiaries under PMGKAY until January 2024, with an estimated financial outlay of ₹11.80 lakh crore.

- The One Nation One Ration Card (ONORC) system allows migrant beneficiaries to access their entitlements from any Fair Price Shop (FPS) across the country using their ration card or Aadhaar number.

Financial Implications:

- Procuring food grains at MSP and distributing them at subsidized rates has significant financial implications for the government.
- The economic cost of rice and wheat for 2023-24 is ₹3931.34 per quintal and ₹2709.59 per quintal, respectively, reflecting an increase due to higher MSPs and associated costs

Conclusion:

- The agriculture sector remains pivotal for India's economic growth, achieving a 4.18% average growth rate over the last five years. Emphasizing allied sectors such as animal husbandry, dairying, and fisheries is crucial to enhancing farmers' incomes.
- Promoting high-value agriculture and crop diversification, supported by investments in agri-infrastructure, technology, and private sector participation, can spur sustainable growth. Initiatives like E-NAM, promoting FPOs, and modernizing market infrastructure are essential for better price discovery and efficiency.
- By learning from global examples and fostering competitive frameworks, India can significantly improve farm incomes and drive a manufacturing revolution.

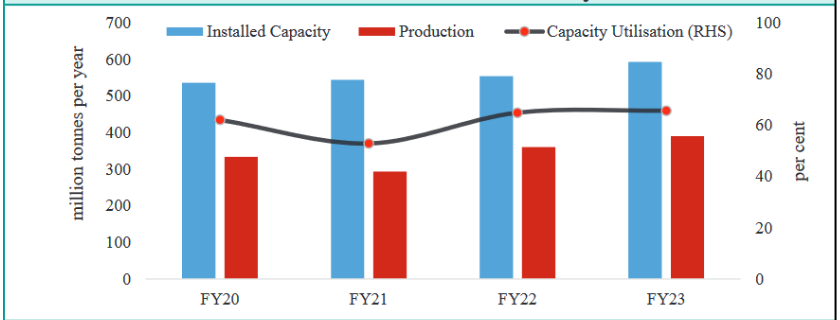
CHAPTER 10: INDUSTRY: SMALL AND MEDIUM MATTERS

- **Introduction**
- **Performance of Key Sectors and Related Issues**
- **Cross-cutting Themes**

Introduction:

- India's manufacturing sector has emerged as a key driver of economic growth, demonstrating resilience and potential despite challenges. With an impressive 8.2% overall economic expansion in FY24, bolstered by 9.5% industrial growth, the sector has shown its capacity to significantly impact the nation's economy.
- This chapter explores the manufacturing landscape in India, examining its recent performance, identifying growth areas, and discussing the critical initiatives and policies aimed at fostering its development.

Chart X.6: Installed capacity, production and capacity utilisation of cement industry



Source: Department for Promotion of Industry and Internal Trade (DPIIT)

Performance of Key Sectors and Related Issues

Cement Industry:

- India is the second-largest cement producer globally
- Current annual installed capacity is about 622 million tonnes
- The industry has potential for growth, with domestic consumption below the global average

Chart X.1: Share of industry and its Components in total GVA (in constant prices)

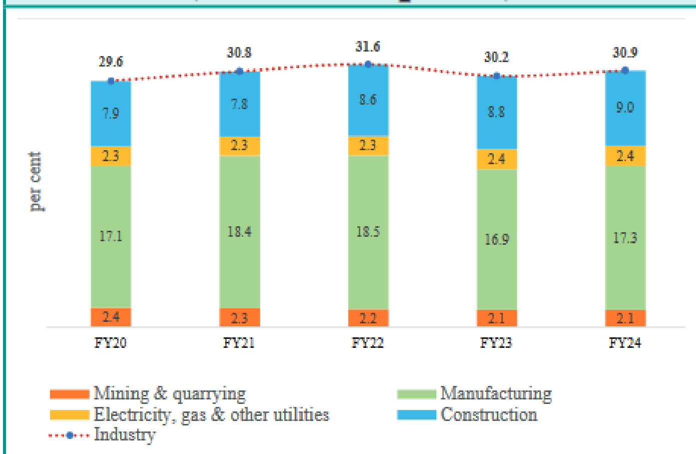
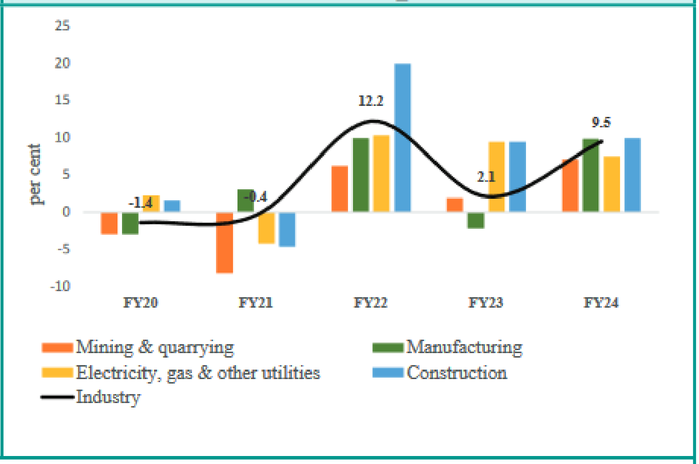


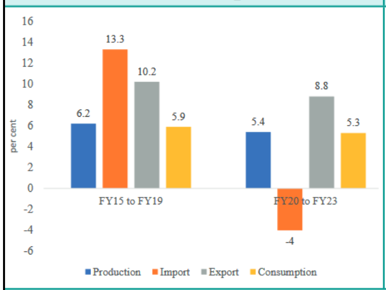
Chart X.2: Annual growth of industry and its components (in constant prices)

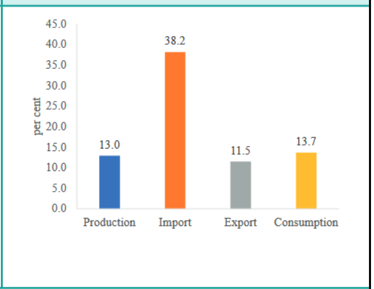


Source: Survey calculations based on National Account Statistics 2024 (Statement 8.6.1 & 8.6.2), MoSPI

Steel Sector:

Chart X.7: Average annual growth of finished Steel (in per cent)	Chart X.8: Annual growth of finished Steel in FY24 (in per cent)





Source: Survey calculation based on data from the Ministry of Steel

- Achieved highest levels of production and consumption in FY24
- India became a net exporter of finished steel over the past decade
- The sector accounts for 12% of India's greenhouse gas emissions, government is currently focusing on green steel production to reduce greenhouse gas emissions
- Recent initiatives include the establishment of the Nagarnar Steel plant and the PLI Scheme for specialty steel

Coal Sector:

- Accounts for over 55% of India's primary commercial energy
- Production accelerated in the last five years, reducing import dependence
- Government initiatives aim to gasify 100 MT of coal by 2030

Box X.2: Recent initiatives, challenges and opportunities in the coal sector

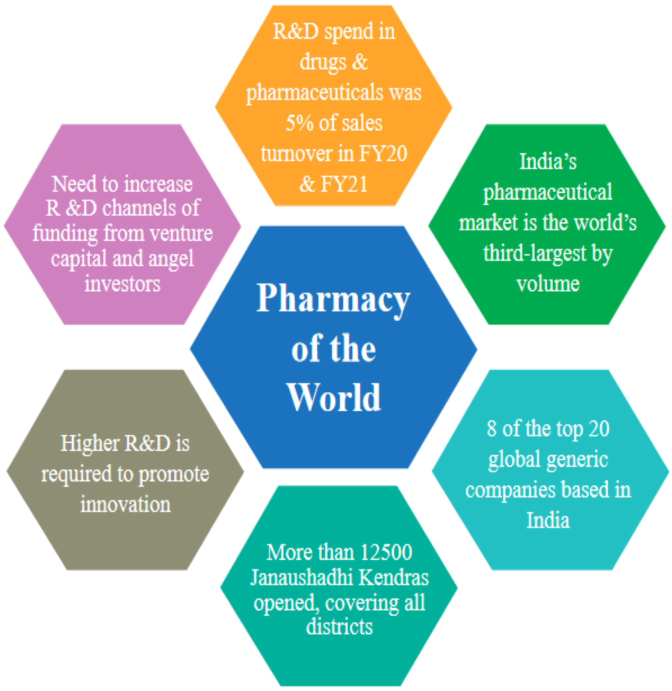
Recent Initiatives	Challenges, opportunities and options
• The government has set a target to gasify 100 MT of coal by 2030 to reduce imports. • A scheme with an outlay of ₹8500 Crore during 2023-24 to provide viability gap funding to coal/lignite gasification projects has been launched. • Launched Integrated Coal Logistics Policy and Plan in February 2024 to develop technologically enabled, integrated and cost-effective logistics for coal evacuation. • Notified the amended Coal Blocks Allocation Rules, 2017, in May 2023. • Coal India Limited (CIL) is venturing to set up 3,000 MW of renewable power capacity for power mining operations by 2025-26. During 2023-24, a total of 8.60 million units were generated from solar installations till December 2023. • CIL is gradually moving to a high-capacity coal evacuation system, making it more efficient and efficient by installing coal handling plants/silos under its 'First Mile Connectivity' projects. • CIL is pursuing the acquisition of critical mineral assets like lithium and cobalt in India and abroad.	• Technological difficulties due to the limited availability of modern mining equipment from Indigenous manufacturers • Procedural complexities in acquiring forestry and environmental clearances, land acquisition, and possession need to be taken care of for the timely development of mining projects. • Need for sustainable solutions amid global environmental action. • To mitigate challenges, the industry is focusing on reducing emissions, improving energy efficiency, and adopting cleaner coal technologies. • In spite of an adequate domestic supply of thermal coal, only the substitutable part of the import can be replaced. Increasing demand for coking coal will push coking coal imports up. Coking coal beneficiation needs to be scaled up for blending with imported coal under the 'coking coal mission'. • Coal can be used as a green energy source, such as coal mine methane (CMM), coal bed methane (CBM), coal to liquid, and coal to methanol. The CMM and CBM need to be tapped progressively.

Source: Ministry of Coal

- Recent initiatives include the Integrated Coal Logistics Policy and amended Coal Blocks Allocation Rules
- Coal India Limited is venturing into renewable power capacity and pursuing the acquisition of critical mineral assets

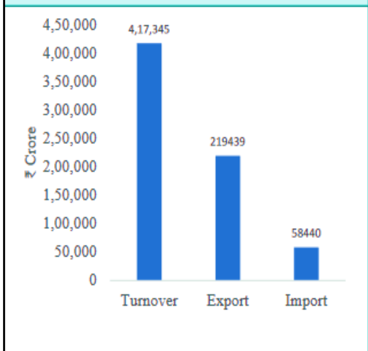
Pharmaceutical Industry:

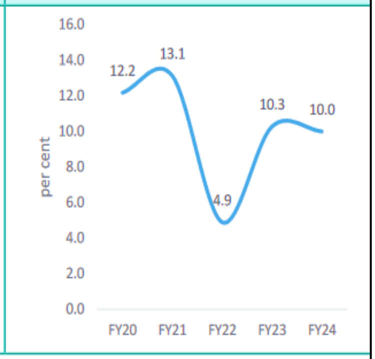
- India is the world's third-largest pharmaceutical market by volume
- It is known as the "Pharmacy of the world," exporting 20% of global generic drugs
- Implementing Production Linked Incentive (PLI) schemes to boost domestic manufacturing



- PLI schemes have helped stabilize bulk drug imports and improved supply chain resilience
- The Pradhan Mantri Bhartiya Janaushadhi Pariyojana aims to make quality generic medicines available at affordable prices

Chart X.11: Turnover, export and import of the pharma sector in FY24	Chart X.12: Domestic turnover growth in the pharma sector





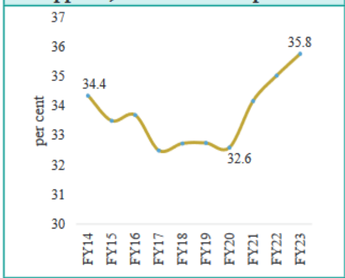
Source: Department of Pharmaceuticals

- R&D expenditure in the sector averaged around 5% of sales turnover in FY20 and FY21

Textile Industry:

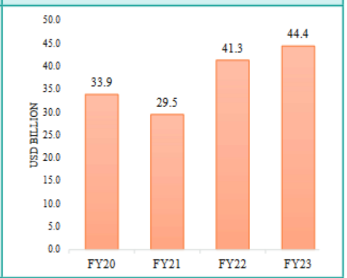
- Generated ₹3.77 lakh Crore in gross value added in FY23, accounting for 10.6% of manufacturing GVA
- India is the world's second-largest clothing manufacturer and a top-five exporting nation
- Exports reached ₹2.97 lakh Crore in FY24, with readymade garments being the largest segment

Chart X.13: Share of non-corporate GVA in the total textile (including apparel) GVA in current prices



Source: National Account Statistics 2024, MoSPI

Chart X.14: Total exports of textile products



Source: Ministry of Textiles

Electronics Industry:

- Experienced significant growth since 2014, contributing 4% to India's GDP in FY22
- Domestic production increased to ₹8.22 lakh Crore, with exports rising to ₹1.9 lakh Crore in FY23
- Mobile manufacturing saw increased domestic value addition, employment, and wages
- Participation in global value chains has benefited the sector

Surge in electronics production and exports (growth in %)

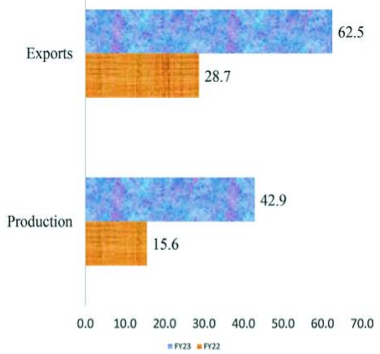
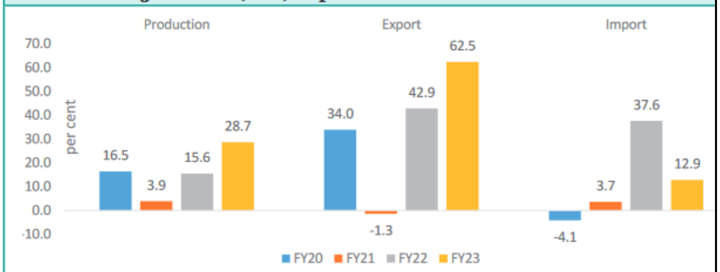


Chart X.15: Growth (YoY) in production and trade of electronics items

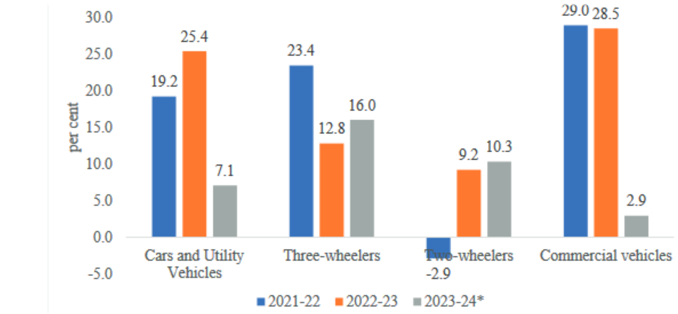


Source: Ministry of Electronics and Information Technology (MEITY)

Automotive Industry:

- Includes global auto manufacturers and a vibrant auto component industry

Chart X.17: Annual growth (YoY) in the production of different categories of automobiles



Source: Survey calculation based on data from the Ministry of Heavy Industries

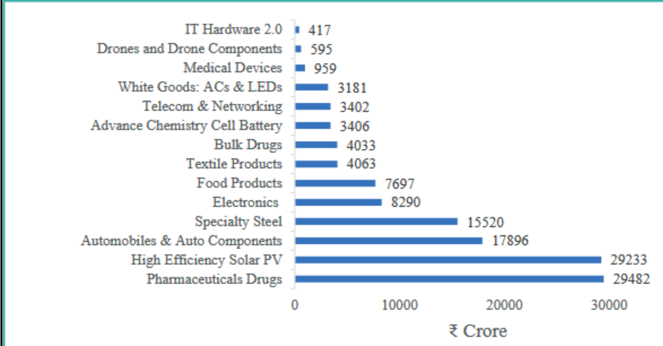
- Growth moderated during FY20 to FY23 compared to the previous five years
- The pandemic significantly impacted all segments, with varying recovery rates
- Recent growth is observed across passenger vehicles, three-wheelers, two-wheelers, and commercial vehicles

Cross-cutting Themes

Production Linked Incentive (PLI) Scheme:

- The PLI scheme is a government initiative aimed at boosting domestic manufacturing and attracting investments in various sectors.
- Under this scheme, Pharmaceuticals Drugs and High Efficiency Solar PV modules received the highest investments, followed by Automobiles & Auto Components and Specialty Steel.
- This indicates a strong focus on developing India's pharmaceutical and renewable energy sectors, as well as supporting traditional manufacturing strengths like automobiles.

Chart X.18: Actual sector-wise investment under the PLI scheme



Source: DPIIT

Micro, Small & Medium Enterprises (MSMEs):

- MSMEs play a crucial role in India's economy, their 35.4% contribution to all-India manufacturing output in FY22 demonstrates their significance in the industrial sector.
- The 45.7% share in all-India exports for 2023-24 highlights their importance in international trade.
- The Udyam Registration portal, launched in July 2020, has been instrumental in formalizing the MSME sector. With 4.69 Crore MSMEs registered as of July 2024, it shows the massive scale of this sector in India.
- The government's allocation of ₹9,000 Crore to the Credit Guarantee Fund Trust aims to enable an additional ₹2 Lakh Crore in credit, addressing one of the key challenges faced by MSMEs - access to finance.

Reimagining building regulations to augment manufacturing capacity

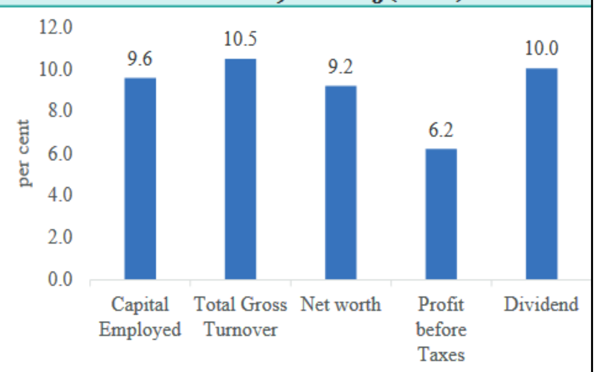
Existing industrial building regulations limit factory land usage, reducing land utility and resulting in unquantified costs. The report titled State of Regulation: Building Standards Reforms for Jobs and Growth22 illustrates how land remains unutilised while complying with the four building regulations relating to ground coverage, setbacks, parking and floor area ratio.

- **Land lost due to Ground Coverage**: The report shows that under the ground coverage regulations on factory plots, intended to control density and promote groundwater recharge, a factory building can cover no more than 40–60 per cent of the plot, depending on the State in which the factory conducts its operations. In comparison, in Hong Kong, a factory will not lose any proportion of the plot; in the Philippines, only 30 per cent of the plot.
- **Land lost due to Setbacks:** State-level regulations limit the horizontal building expansion to minimise fire risk and ensure ventilation and light. The aforementioned report shows that regulations, however, do not account for modernisation in technology and manufacturing processes. For example, the use of fire-resistant materials and automatic fire-fighting equipment can effectively reduce hazards without locking up productive land. Moreover, natural light and ventilation may be counterproductive in certain industries like chemicals, pharmaceuticals, and electronics. Setbacks are particularly challenging for micro and small factories in certain States. The factories end up losing even 60–90 per cent of their land in certain States just to comply with these regulations. A mega factory in an Indian State loses ~2X more land to setbacks than one in the Philippines and ~5X more than the one in Singapore.
- **Land lost due to Parking Regulations:** State governments enforce regulations mandating off-street parking to ease street congestion. However, research suggests that these mandates may actually contribute to more congestion. Parking requirements do not align with actual demand, leading factories to lose a significant amount of land. The report finds that the factories across India lose ~12–70 per cent of their land to meet parking minimums. A factory in India may have to provide at least double the number of car parking spaces compared to Hong Kong, the Philippines, or Singapore.
- **Land lost due to Floor Ratio:** States regulate the floor area ratio (FAR) to restrict vertical expansion on designated land parcels, aiming to manage density, alleviate traffic congestion, and facilitate the provision of essential utilities such as water and electricity. However, such regulations may inadvertently contribute to urban sprawl, thereby exacerbating road congestion and escalating utility provisioning expenses. On average, factories across states are only allowed to create floor space up to 1.3 times the plot size. With a 1000 sqm plot, an office building in Mumbai can be built up to 5000 sqm, whereas in Japan, it can go up to 13,000 sqm and 15,000 sqm in Singapore and Hong Kong.

Central Public Sector Enterprises (CPSEs):

- CPSEs continue to be significant players in India's economy, 254 CPSEs were operational as of March 31, 2023.
- Their total market capitalization increased by 7.95% to ₹16.69 Lakh Crore in FY23.
- The number of profit-making CPSEs increased from 178 in FY19 to 193 in FY23, it suggests better management and operational efficiency in these public sector units.

Chart X.20: Improvement in Performance of CPSEs between FY19 and FY23 (CAGR)



Source: PE Survey Report, Department of Public Enterprises

Industrial Credit:

- Industrial credit growth has been recovering since FY21, with an 8.5% growth in FY24.
- Credit growth was mainly driven by large industries, which suggests that bigger companies may have been better positioned to weather economic challenges and capitalize on growth opportunities.

Table X.3: Industry-wise Growth (YoY) in credit deployment (in per cent)

Sector	CAGR from March 2020 to March 2024	Growth (YoY) in Mar-24
Mining and quarrying (incl. Coal)	4.5	-10.1
Food processing	9.7	14.9
Beverage and tobacco	14.6	30.9
Textiles	7.3	11.2
Leather and leather products	4.7	5.4
Wood and wood products	15.0	12.4
Paper and paper products	9.2	4.9
Petroleum, coal products and nuclear fuels	13.4	-11.4
Chemicals and chemical products	5.8	11.3
Rubber, plastic and their products	14.5	7.6
Glass and glassware	15.4	26.3
Cement and cement products	-0.5	2.9
Basic metal and metal product	3.5	12.2
All engineering	4.8	10.5
Vehicles, parts and transport equipment	5.9	11.4
Gems and jewellery	6.2	8.0
Construction	1.1	6.9
Infrastructure	4.7	6.6
Other industries	3.7	18.4
Total Industries	5.5	8.5

(Minimum) — (Maximum)

Source: Database on Indian Economy, Industry-wise deployment of gross bank credit, RBI

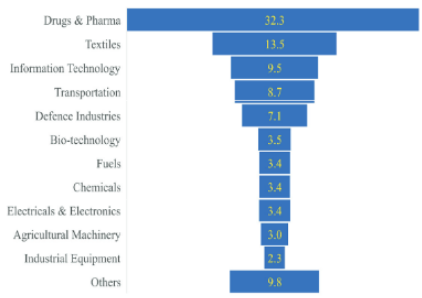
Industrial R&D and Innovation:

- R&D is crucial for long-term industrial competitiveness:
- The average industrial R&D spending of ₹44,720 Crore from FY19 to FY21 shows significant investment in innovation.
- However, the concentration of R&D spending in the top five sectors (accounting for more than 70%) suggests a need for more diversified R&D efforts across industries.

Table X.4: Industrial R&D Facts in India: FY19 to FY21 average

Industrial R&D spending in India (₹ Crore)	44720
Industrial R&D as per cent of manufacturing GVA	1.61
Industrial R&D by private sector as per cent of private sector manufacturing GVA	1.53
Industrial R&D by public sector as per cent of public sector manufacturing GVA	2.67
Number of industrial R&D units: private sector	1866
Number of industrial R&D units: public sector	94

Chart X.23: Share of sub-sectors in industrial R&D spending in India: FY19 to FY21 (in per cent)

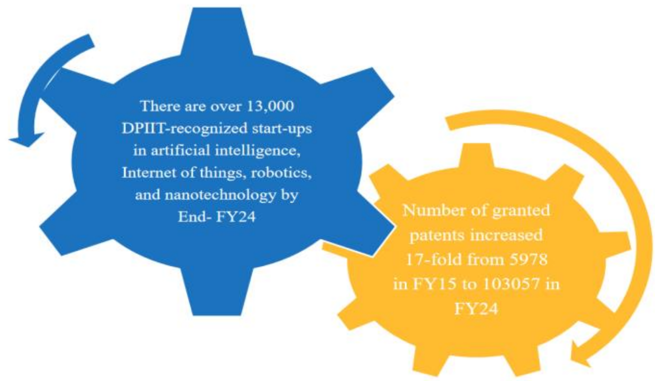


Source: Research and Development Statistics, Department of Science & Technology

Startups and Innovation:

- India's startup ecosystem has seen remarkable growth, the increase from 300 DPIIT-recognized startups in 2016 to more than 1.25 Lakh by end-March 2024 represents explosive growth in entrepreneurship.
- The fact that over 45% of recognized startups are from Tier 2/3 cities indicates a broadening of the startup ecosystem beyond major metropolitan areas.
- With more than 47% of recognized startups having at least one-woman director, there's a positive trend in gender diversity in entrepreneurship.
- The Anusandhan National Research Foundation (ANRF) bill passed in 2023 aims to provide high-level strategic direction for scientific research, potentially boosting innovation in the country.

Flourishing start-up and innovation ecosystem



Global Innovation Index (GII):

- India's rank has consistently improved in the GII. The consistent improvement in India's rank shows the country's progress in creating an innovation-friendly environment.
- India's top rank among lower middle-income countries and central and southern Asian economies positions it as a regional leader in innovation.
- The top global rank in the domestic market scale indicator highlights India's significant market potential, which can be leveraged to drive innovation and attract investments.

Conclusion and Way Forward:

1. **Industrial Realignment:** Over the past decade, there's been a significant shift in output shares among industrial segments. Sectors like chemicals, pharmaceuticals, and machinery have gained strength, while others like textiles and food products have lost relative position.
2. **Export-Import Balance:** Some industries, such as steel, pharmaceuticals, and automobiles, are major net exporters. However, there's continued import dependency in sectors like coal, capital goods, and chemicals.
3. **Medium-term Outlook:** The outlook for capital goods and construction inputs is positive due to signs of increased private sector capital formation. However, global uncertainties pose challenges for export demand and production costs.
4. **Government Initiatives:** Recent measures have been taken to improve ease of doing business, reduce compliance burdens, and address logistical and infrastructural bottlenecks. The Production Linked Incentive (PLI) schemes have attracted significant investments in key sectors.
5. **Deregulation:** The survey suggests that further industrialization in India requires deregulation and reviewing of counterproductive regulations.
6. **R&D and Skill Development**: There's a need for industry-led initiatives in research and development and improving workforce skills.

7. **MSME Sector:** The survey recommends several measures to support MSMEs, including improved financing, targeted incentives, easing compliance requirements, and improving market access.
8. **Upgrading Statistics**: There is a need for improvements in industrial statistics to aid policy making, including updating the index of industrial production and developing better indicators for MSMEs and financial flows to industries.

Overall, the Economic Survey paints a picture of an evolving industrial landscape in India, highlighting both progress and areas needing attention for future growth and competitiveness.

CHAPTER 11: SERVICES: FUELLING GROWTH OPPORTUNITIES

- **Introduction**
- **Overview Of the Services Sector Performance**
- **Financing Sources for Services Sector Activity**
- **Major Services: Sector-wise Performance**
- **Challenges and Opportunities**
- **Way Forward**

Introduction

- **Classification of Services Sector:** India's services sector is divided into two categories:
  - **Contact-Intensive Services:** Includes trade, hospitality, transport, real estate, and personal services.
  - **Non-Contact-Intensive Services:** Comprises financial, IT, professional, communication, broadcasting, and storage services, as well as public administration and defense.
- **Sector Contribution to Economy:** The services sector is a major contributor to India's economic growth, accounting for about 55% of the total economy in FY24.
- **Factors Influencing Performance:**
  - **Domestic Demand:** Strong demand for services like education, healthcare, finance, and tourism is driven by India's large, young population and rapid urbanization.
  - **E-Commerce Influence:** Growth in e-commerce has increased the demand for logistics and digital payment services.
  - Impact of AI: The integration of AI poses challenges to growth opportunities in business services, affecting long-term sustainability and job creation.

Overview Of the Services Sector Performance

Growth and Contribution:

- The services sector has grown by over 6% annually in the last decade, except for FY21.
- It accounts for about 55% of India's economy and 4.4% of global commercial services exports.

Chart XI.1: Increasing trend of GVA in the services sector (in constant prices)

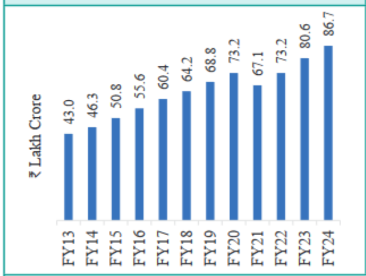
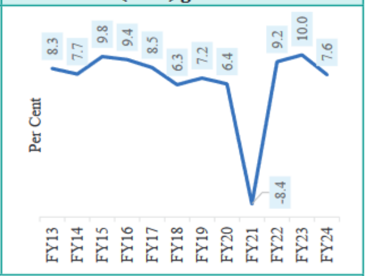


Chart XI.2: Strong momentum in services sector GVA Year-on-Year (YoY) growth



Source: National Accounts Statistics (NAS), Ministry of Statistics and Programme Implementation (MoSPI)
Note: Estimates for FY23 are First Revised Estimates, and for FY24 are Provisional Estimates.

Post-COVID Recovery:

- The sector has almost recovered to pre-COVID levels in terms of GVA share.
- Growth outpaced overall GVA in FY23 and FY24, estimated at 7.6% for FY24.

High-Frequency Indicators:

- GST collections, e-way bill issuance, electronic toll collection, air passenger traffic, and rail freight all showed strong growth.
- Bank credit and deposits expanded, indicating buoyancy in financial services.

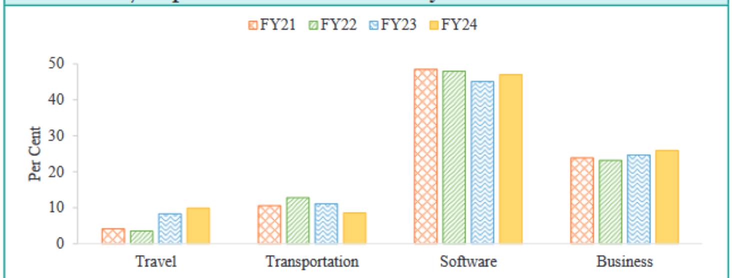
Purchasing Managers' Index (PMI):

- Services PMI averaged 60.3 in FY24, up from 57.3 in FY23.
- It has remained above 50 (indicating expansion) for 35 consecutive months.

Trade in Services:

- Services exports account for 44% of India's total exports in FY24.
- Growth decelerated to 4.8% in FY24 from 27.8% in the previous year.
- India ranks fifth globally in services exports.
- Computer and business services exports grew by 9.6%, while travel services grew by 24.6%.
- Transportation receipts declined by 19.1% due to decreased global freight rates.

Chart XI.7: Export contributions of four key sub-sectors within services



Source: RBI Handbook of Statistics on the Indian Economy (Table No.196 - India's Overall Balance of Payments-Quarterly- US Dollars)
Note: Other services not presented in the chart include- Insurance, Government not included elsewhere (G.n.i.e), Miscellaneous, financial and communication services.

Emerging Trends:

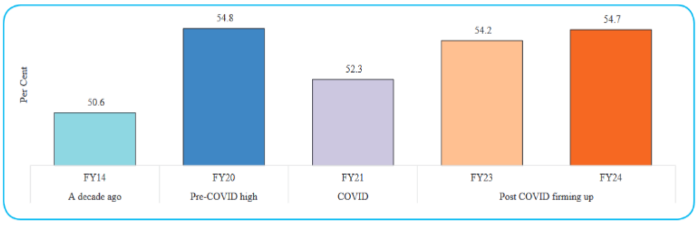
- Growth in 'other business services' driven by consultancy, engineering, and technical services.
- India's growing reputation as a destination for Global Capability Centres (GCCs).

- Increased share in digitally delivered services exports globally (6.0% in 2023, up from 4.4% in 2019).

Services Imports and Trade Balance:

- Services imports decreased by 2.1% in FY24.
- Net services receipts increased, helping to cushion India's current account deficit.

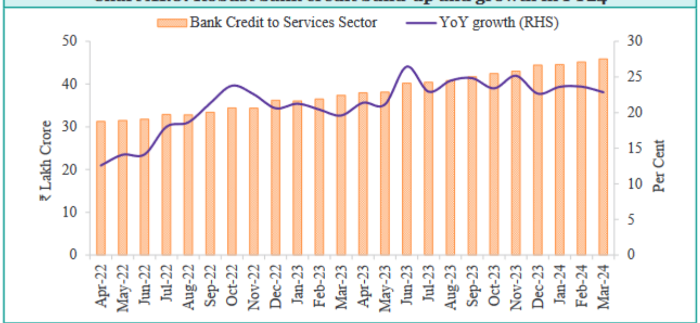
Post COVID firming up in the share of the services sector in overall GVA



Financing Sources for Services Sector Activity

- **Domestic Financing Sources:**
  - The services sector finances its activities through domestic bank credit and capital markets.
- **Bank Credit Growth:**
  - In FY24, the services sector experienced a continuous increase in bank credit, with year-on-year (YoY) growth rates exceeding 20% since April 2023.
  - By March 2024, the total outstanding credit for the services sector reached ₹45.9 lakh crore, indicating a YoY growth of 22.9%.

Chart XI.8: Robust bank credit build-up and growth in FY24



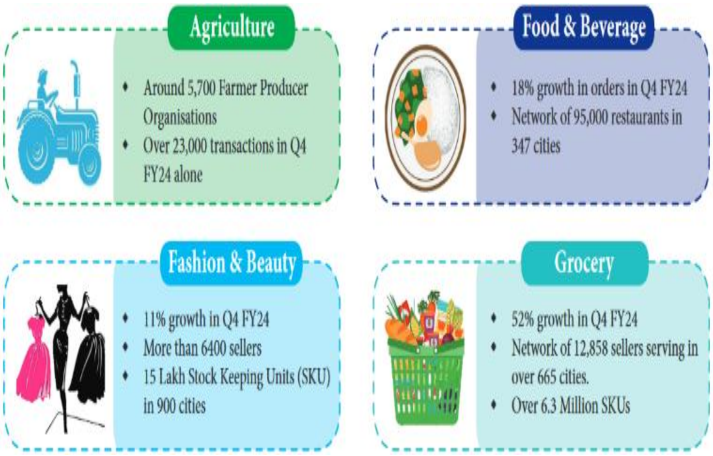
Source: RBI Handbook of Statistics on the Indian Economy (Table No.170- Deployment of Bank Credit by Major Sectors)

- **External Financing Sources:**
  - **Foreign Direct Investment (FDI):**
    - In the United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2024, India is ranked 15th for FDI inflows in 2023.
    - India is the second-largest host for international project finance deals and the fourth-largest for Greenfield project announcements.
    - FY24 saw a decline in FDI equity inflows to the services sector, influenced by higher interest rates, geopolitical issues, global uncertainties, and rising protectionism favoring domestic sourcing.
- **External Commercial Borrowings (ECBs):**
  - The services sector accounted for 53% of total ECB inflows in FY24.
  - It received USD 14.9 billion in ECB, reflecting a YoY growth of 58.3%, compared to 23.3% in FY23.

Challenges:

- Global factors affecting FDI inflows, including economic uncertainties and geopolitical issues

Major Services: Sector-wise Performance



Physical Connectivity-Based Services

- **Overview:** Encompasses services facilitating the movement of goods, people, and information across infrastructure.
- **Types of Transport:**
  - **Passenger transport** (trains, buses, taxis, airlines).
  - **Freight transport** (shipping companies, freight forwarders, courier services).
  - **Ancillary services** (vehicle maintenance, airport ground handling).

Roadways

- Cargo Transportation: A significant portion of cargo is transported via road; user convenience on National Highways (NH) is crucial.
- **Improvements:**
  - Toll digitization has reduced waiting times at toll plazas significantly.
  - The '4E' strategy by the Ministry of Road Transport and Highways focuses on engineering, enforcement, emergency care, and education for road safety.
  - The PM Gati Shakti portal enhances network planning and congestion projections.
- **Challenges**: Include ribbon development along highways and delays in project execution. The government aims to address these through better infrastructure and single-window clearances.

Indian Railways

- **Passenger Traffic:** Recorded 673 crore passengers in FY24, increasing by 5.2% YoY.
- **Freight Traffic**: Carried 158.8 crore tonnes of freight, showing a 5.3% increase YoY.
- **Upgrades:**

- Introduced Wi-Fi at 6,108 stations.
- Developed apps for better freight management and customer convenience.
- Comprehensive IT systems have digitized finance and procurement processes.

● Training Initiatives: 6.5 lakh railway officials trained in FY24.

Chart XI.10: Persistent progress in railway freight traffic

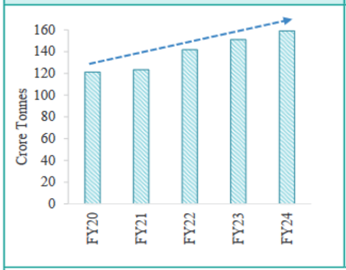
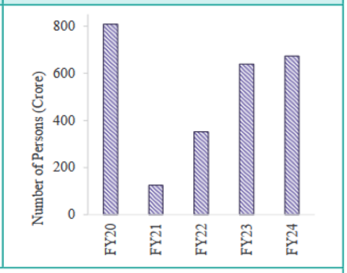


Chart XI.11: Railway passenger traffic on recovery path post-COVID



Source: Ministry of Railways
Note: Values for FY24 are provisional and, as per statement 7A, the monthly statistical statement of the Indian Railways.

Ports, Waterways, and Shipping

- **Management Improvements:** Decentralized decision-making and public-private partnerships have strengthened port management.
- **Technological Integration:** The Sagar Setu application streamlines vessel and cargo operations.
- **Cruise Tourism:** A push for river cruise tourism has resulted in a 100% surge in overnight cruise trips in FY24.

Airways

- **Aviation Market Growth:** India's aviation sector is the third-largest domestic market, handling 37.6 crore air passengers in FY24, a 15% YoY increase.
- **Infrastructure Development**: Government policies support increased airport capacity and the operationalization of greenfield airports.
- **Technological Innovations:** Initiatives like Digi Yatra enhance efficiency and passenger experience.
- **Significant Female Participation:** Women constitute 15% of India's pilots, almost three times the global average.

Chart XI.15: Steady progress in India's ranking in International Tourist Arrivals (ITA)

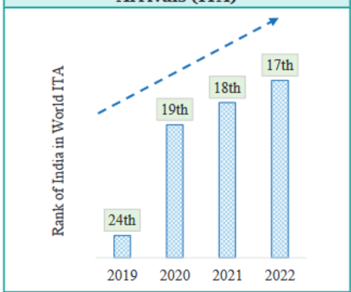
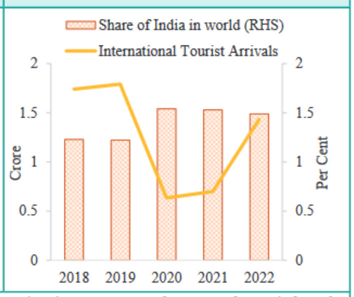


Chart XI.16: Resilient recovery of International Tourist Arrivals (ITA)



Source: Data for 2019 and 2020 is from the Bureau of Immigration Source. Data for 2021 and 2022 is from the UNWTO barometer for January 2024.
Note: (i) For chart XI.15, values for 2021 and 2022 are provisional
(ii) For chart XI.16, the value for 2022 is provisional.

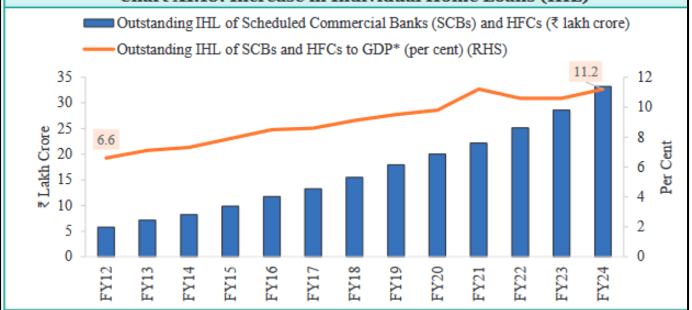
Tourism

- **Growth Indicators:** Ranked 39th in the World Economic Forum's Travel and Tourism Development Index (TTDI) 2024 with over 92 lakh foreign tourist arrivals in 2023, marking a 43.5% YoY increase.
- **Infrastructure Development:** The hospitality industry expanded with 14,000 new rooms added in 2023, leveraging technology for improved operations.
- **Government Initiatives:** Various schemes support tourism infrastructure development and promote collaboration among states.

Real Estate

- **Sector Recovery:** After the pandemic, the real estate sector showed robust recovery with a 33% YoY growth in residential sales in 2023.
- **Market Dynamics:** Rising demand for housing driven by urbanization, income levels, and the desire for home ownership.
- **Housing Finance Growth:** Housing loans as a percentage of GDP increased, with Housing Finance Companies (HFCs) complementing banks in providing housing credit.

Chart XI.18: Increase in Individual Home Loans (IHL)



Source: RBI & National Housing Bank (NHB)
*Note: GDP at current prices is considered.

Information Technology (IT) Services

- **Growth in GVA:** The share of information and computer-related services in total Gross Value Added (GVA) grew from 3.2% in FY13 to 5.9% in FY23, achieving a real growth rate of 10.4% in FY21 despite the pandemic.
- **Sector Contributions:** The IT and IT-enabled services sector plays a crucial role in maintaining India's external balance through export earnings.
- **Global Capability Centres (GCCs):**
  - GCCs in India expanded from over 1,000 in FY15 to more than 1,580 by FY23, employing over 16.6 lakh individuals.
  - Key areas of employment include engineering, research and development (ER&D), business process management (BPM), and IT services.
  - Revenue from GCCs grew from USD 19.4 billion in FY15 to USD 46 billion in FY23, with a CAGR of 11.4%.
- **Challenges and Opportunities**
  - **Talent Gap:** A notable shortage of skilled workers in IT, data science, and cybersecurity exists, with 76% of

IT employers globally reporting recruitment difficulties.
  - **Skill Development Initiatives:** Programs like 'Future Skills PRIME' and the Digital Skilling initiative aim to upskill IT professionals in emerging technologies.

Technology Start-ups

- Rise in Start-ups: The number of technology start-ups surged from around 2,000 in 2014 to approximately 31,000 in 2023, with 1,000 new start-ups launched in 2023.
- Key Sectors: Leading sectors for start-ups include EdTech (16%), EnterpriseTech (12%), and BFSI (10%).
- Government Support: The Start-up India initiative and various policies promote the growth of tech start-ups, including the National Deep Tech Start-up Policy.

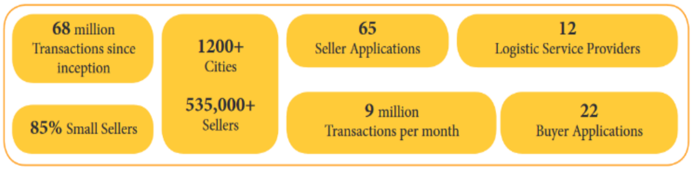
Telecommunications

- **Telecom Growth:** Teledensity increased to 85.7% by March 2024, with 116.5 crore wireless connections.
- **Internet Penetration:** Internet subscribers rose from 25.1 crore in March 2014 to 95.4 crore in March 2024.
- **5G and 6G Development:** India's 5G network is expanding rapidly, and the Bharat 6G Vision document aims to develop 6G technologies.

E-Commerce

- **Market Potential:** The Indian e-commerce industry is expected to exceed USD 350 billion by 2030, with modern retail's share projected to increase to 30-35%.
- **Government Initiatives:** The Digital India program and ONDC (Open Network for Digital Commerce) facilitate growth in e-commerce, promoting safe online practices and new business models.

Growth Map of ONDC (Open Network for Digital Commerce)



Challenges and Opportunities

- **Skill Gap in Workforce:**
  - Rapid digitization in the services sector requires a skilled workforce adept in digital and high-tech skills.
  - The government is implementing initiatives such as Skill India and the National Education Policy to address skill shortages and upskill the workforce.
- **Infrastructure and Logistics:**
  - Initiatives are underway to improve logistics, transport services, and infrastructure bottlenecks, which are vital for economic activities.
  - Leveraging India’s coastline and inland waterways, similar to successful practices in the Netherlands, can enhance efficiency and reduce transportation costs. For example, Kerala's Kochi Water Metro showcases the potential of inland water transport.
- **Access to Finance:**
  - Small and medium enterprises in the services sector face challenges in accessing finance.
  - Initiatives like Mudra Yojana, Start-up India, and Stand-up India aim to ease credit accessibility, but further improvements are needed in loan processes and project bankability.
- **Regulatory Landscape:**
  - The regulatory framework for the services sector is improving, with movements like GST simplification and sector-specific policies enhancing the business environment.
  - Continued efforts to streamline procedures through single-window systems and digitization can boost economic efficiency.
- **Data Privacy and Cybersecurity:**
  - With digitization, data privacy and cybersecurity have emerged as critical concerns.
  - The government is leading efforts to implement data protection laws and cybersecurity policies while promoting strong security measures and compliance with privacy regulations to foster confidence in technology use

Conclusion and Way Forward

- India's services sector has primarily thrived on low-cost offerings, but digitization and supportive policies have significantly transformed service delivery, especially post-pandemic.
- **Recovery of Contact-Intensive Services:** Contact-intensive sectors such as trade, transport, and real estate are rebounding, integrating more technology and digital content into their operations.
- **Diversification of Services Exports:** India is expanding its services exports beyond software to include Human Resources (HR), legal, and design services in response to global demands.
- **Emergence of Global Capability Centres:** India is becoming a hub for Global Capability Centres (GCCs), with start-ups driving innovation and improving access to resources. This trend is supporting greater reliance on embedded services in various economic activities.
- **Job Creation Goals:** To create millions of jobs by 2030, addressing the changing demand-supply dynamics of services is essential, requiring focused skills development in areas like AI, big data, cybersecurity, and more.
- **Importance of Tourism Sector:** Given potential slowdowns in service exports due to AI, boosting the relatively less skill-dependent tourism sector is crucial for employment generation, necessitating collaboration between public policy and the private sector.

- **Short-Term Challenges:** Global economic uncertainties and rising input costs pose challenges for service demand and pricing, making it important to sustain positive trends and manage competitive pressures.
- **Future Outlook:** The dynamism displayed by the economy and service sector post-pandemic should help navigate these challenges, fostering continued growth and resilience.

CHAPTER 12: INFRASTRUCTURE: LIFTING POTENTIAL GROWTH

- **Introduction**
- **Infrastructure financing: The public expenditure push**
- **Developments Across Infrastructure Sectors**
    - **Challenges and Opportunities**
    - **Facilitation and addressing the bottlenecks**

Introduction

- India's strategy for becoming Viksit Bharat by 2047 includes developing resilient, world-class infrastructure across physical, social, financial, and digital sectors.
- However, studies by the Asian Development Bank, World Bank, and CRISIL highlight investment gaps in various areas.
- This chapter reviews recent infrastructure developments in India, with a focus on FY24 progress.

Infrastructure Financing: The Public Expenditure Push

- Despite financial innovations, capital expenditure by the Union and State Governments remains central to funding large-scale infrastructure projects.
- New funding instruments have made infrastructure financing complex, and differing statistical methods hinder total fund flow aggregation.
- Government capital expenditure has seen a significant increase. Capital expenditure of the Union Government rose 2.2 times from FY21 to FY24, with major spending on Railways and the National Highway Authority of India.

Chart XII.1. Union Government's capital expenditure and its support for CPSEs and State Governments expands considerably

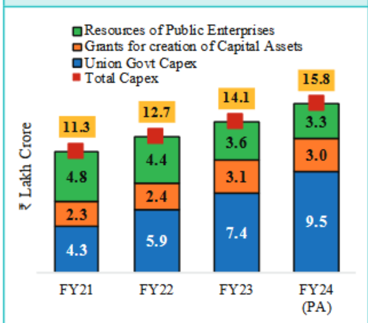
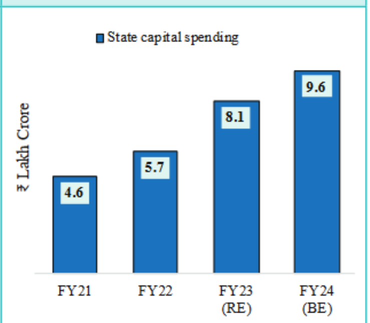


Chart XII.2. State Governments' combined capital spending* also expands robustly



- Capital expenditure of State Governments also increased 2.1 times in the same period.
- Union Government support for state capital expenditure grew by 31.6% from FY21 to FY24. However, consolidated data for State Public Sector Enterprises is unavailable.
- Public expenditure has primarily driven recent infrastructure growth, especially in connectivity projects.
- Between March 2023 and March 2024, bank credit to infrastructure sectors was around ₹79,000 crore, with notable increases in roads, airports, and power sectors.
- External commercial borrowings for infrastructure rose to USD 9.05 billion in FY24, while debt and equity issuances in the capital market exceeded ₹1,00,000 crore.

Chart XII.9. FDI equity inflows to infrastructure sectors during FY24

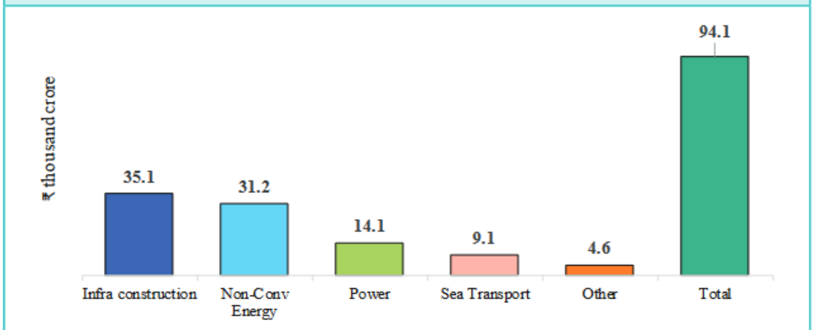


Table XII.1: Infrastructure-related FDI: key ratios

FDI Equity Inflows to Infrastructure Sectors as Per Cent of GDP: FY20 to FY24	0.28
FDI Equity Inflows to Infrastructure Sectors as Per Cent of GDP: FY24	0.32
FDI Equity Inflows to Infrastructure Sectors as Per Cent of Total FDI Equity Inflows: FY20 to FY24	17.3
FDI Equity Inflows to Infrastructure Sectors as Per Cent of Total FDI Equity Inflows: FY24	25.6

Sources: Calculations Based on Data Received from Department of Industrial Policy and Promotion
Note: The sectors considered include infrastructure construction, non-conventional energy, telecom, power, sea and air transport, railway components

- **National Monetisation Pipeline (NMP):**
    - Launched in August 2021, NMP aims to attract private investment for new infrastructure.
    - With a potential of ₹6.0 lakh crore from FY22 to FY25, NMP has already completed transactions worth ₹2.3 lakh crore in its first two years and ₹1.51 lakh crore in FY24.

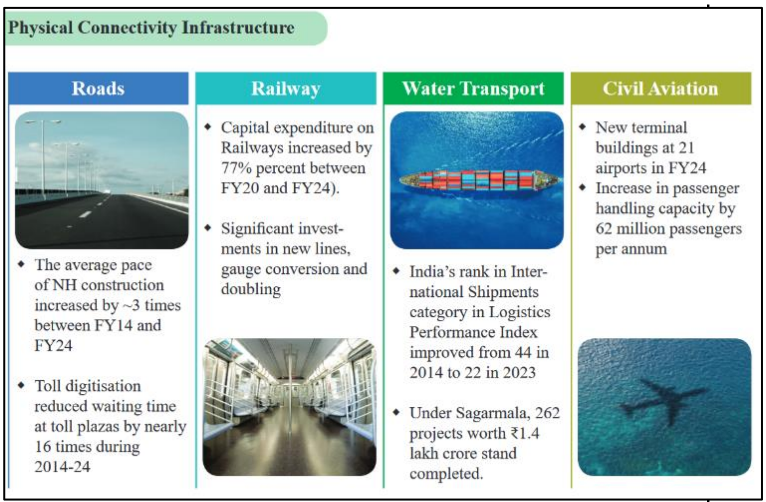
Developments Across Infrastructure Sectors

- This section covers progress, outlook, and challenges in key infrastructure sectors, including physical connectivity, electricity, water and sanitation, urban development, strategic, and digital infrastructure.

Physical Connectivity Infrastructure

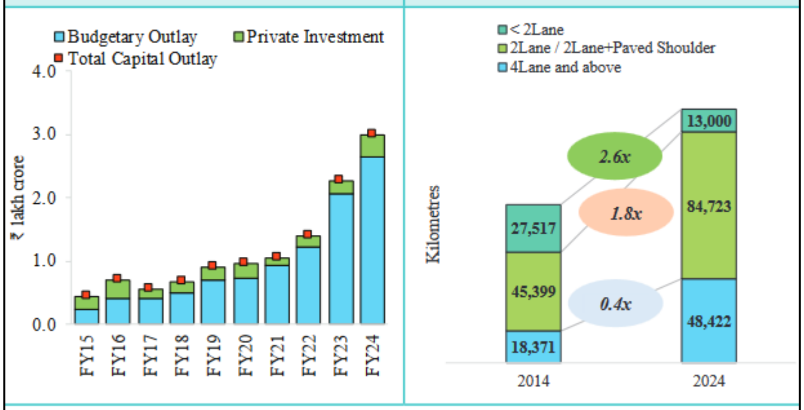
■ **Road Transport**

- **Investment Growth:** Government and private sector capital investment rose from 0.4% of GDP in FY15 to 1.0% (~₹3.01 lakh crore) in FY24.
- **Private Investment:** Highest-ever private investment in FY24, with asset monetisation in roads exceeding ₹1 lakh crore since FY19.



- **National Highways:** Expanded 1.6 times from 2014 to 2024; Bharatmala Pariyojana significantly boosted high-speed corridors and 4-lane roads.
- **Construction Efficiency:** Improved from 11.7 km/day in FY14 to ~34 km/day in FY24.
- **Logistics Efficiency:** India's Logistics Performance Index ranking improved from 54 (2014) to 38 (2023).
- **Multi-Modal Logistics Parks (MMLP):** Six MMLPs awarded by FY24; ₹2,505 crore for MMLPs in FY24; seven more planned for FY25.

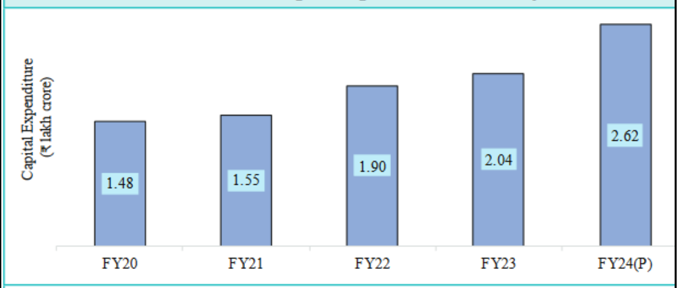
Chart XII.10: Total capital outlay for investment in road transport | **Chart XII.11: NH network - lane augmentation (values in kilometres)**



Source: Union Budget Documents, Inputs Received from Ministry of Road Transport and Highways

- **Challenges:**
  - Continuous ribbon development along NHs.
  - Slow onboarding of digital land records.
  - Delays in environmental clearances.
- **Rail Transport**

Chart XII.12: Capital expenditure on railways



Source: Ministry of Railways
Note: P stands for Provisional

- Network **and Employment:** Fourth largest network globally with 68,584 route km and 12.54 lakh employees.
- **Capital Expenditure:** Increased by 77% over the past five years to ₹2.62 lakh crore in FY24.
- **Production:** Highest-ever production of locomotives and wagons in FY24; 51 pairs of Vande Bharat trains introduced.
- **Innovations:** High-speed Vande sleeper trains and Vande metro trains under development.
- **Environmental Initiatives:** Bio-toilets, waste segregation, and use of renewable energy.
- **Modernization Focus:** Dedicated freight corridors, high-speed rail, modern passenger services, and last-mile rail linkages.
- **Carbon Footprint Reduction:** Renewable energy goals include 30 GW capacity by 2029-30; 231 MW solar and 103 MW wind power plants commissioned by March 2024.

- **Challenges:**
  - Fast capacity augmentation.
  - Modernization of rolling stock and maintenance.
  - Improving service quality and energy efficiency.

- **Water Transport in India**
- **Port Development and Capacity Expansion:**
  - Major port capacity has nearly doubled since 2014.
  - Improved connectivity through PM Gati-Shakti and public-private partnerships has boosted maritime competitiveness.
  - India's rank in the World Bank Logistics Performance Index improved from 44th in 2014 to 22nd in 2023.
  - Policy reforms and new technology have enhanced port efficiency, reducing container turnaround time by 50% between 2014 and 2023-24.
  - Union capital expenditure for ports, shipping, and waterways increased by 27% between FY23 and FY24.
- **Sagarmala Programme (2015):**
  - 839 projects worth ₹5.8 lakh crore, covering port modernization, connectivity, industrialization, coastal community development, and inland water transport.
  - 262 projects worth ₹1.4 lakh crore completed, 217 projects worth ₹1.65 lakh crore under implementation, and 360 projects worth ₹2.7 lakh crore under development.
- **Island Development:**
  - Focus on Andaman & Nicobar and Lakshadweep islands under Maritime India Vision 2030.
  - Projects include eco-tourism, ship repair, seaplane building, maritime training, free trade zones, and bunkering terminals.

Chart XII.17: Capital expenditure by the Government towards ports, shipping, and waterways

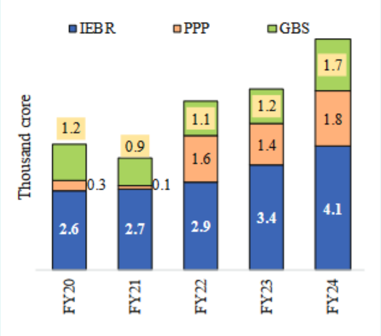
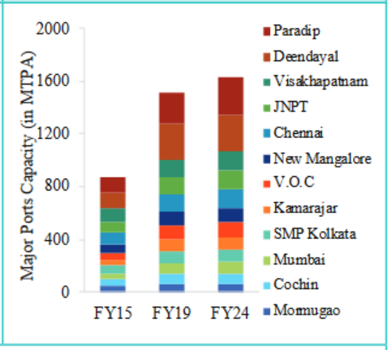


Chart XII.18: Major ports capacity



Source: Ministry of Ports, Shipping and Waterways; Port Capacity was re-rated based on Berthing Policy as per international norms.

- **Shipbuilding, Repair, and Recycling:**
  - Financial assistance for shipbuilding contracts from 2016 to 2026; 18 out of 39 registered shipyards utilized benefits.
  - Inauguration of International Ship Repair Facility at Cochin Shipyard Ltd. in January 2024.
  - Recycling of Ships Act, 2019, sets international standards for ship recycling.
- **Maritime Vision 2030 and Amrit Kaal Vision 2047:**
  - Over 150 initiatives in Maritime Vision 2030 and 300 initiatives in Amrit Kaal Vision 2047 to enhance ports, shipping, and inland waterways.
  - Targets include reducing vessel turnaround time and increasing ship daily output.
- **Coastal Shipping and Inland Water Transport:**
  - Gross tonnage via coastal shipping increased from 1.19 million GT in 2014 to 1.72 million GT in 2024.
  - India has around 14,500 km of navigable waterways.
  - Inland Vessels Act 2021 modernized the legislative framework.
  - Inland Waterways Authority of India (IWAI) capital expenditure for FY24 was ₹1010.5 crore.
  - Phase-I development of new National Waterways approved at a cost of ₹267 crore for 2025-2026.
  - Indo Bangladesh Protocol route enhances connectivity for North-eastern states, with significant cargo increase.
- **Civil Aviation in India**
  - India is one of the fastest-growing aviation markets globally.
  - The government has planned over ₹26,000 crore in capital expenditure from FY20 to FY25 to develop and modernize airports.
  - The Airport Authority of India (AAI) has already spent around ₹23,000 crore, while PPP and other operators have invested approximately ₹49,000 crore, totaling around ₹72,000 crore over the last five years.
  - 21 Greenfield airports approved, with 12 operationalized.
  - New terminal buildings at 21 airports in FY24 increased passenger capacity by 62 million per annum.
  - Under the UDAN Regional Connectivity Scheme (RCS), 579 routes connecting 85 unserved and underserved airports have been operationalized.
  - The number of airports in India has more than doubled since 2014.
  - Current passenger air traffic is at 0.13 trips per capita, indicating significant growth potential.
  - Focus areas include maintenance repair and operations (MRO), skill development, international aviation hub strategy, and global engagements.
  - Emphasis on improving airline efficiency, environmental sustainability, and enhancing long-haul connectivity from India.

New Segments – Drones, Leasing and MRO

- **Drones offer vast benefits across sectors like agriculture, healthcare, disaster relief, surveillance, and defence. The Government introduced liberalized drone rules in 2021.**
- Other measures include publishing drone airspace maps, implementing a PLI scheme, and introducing a drone certification scheme. Key progress includes the establishment of 109 training organisations and the issuance of 10,603 remote pilot certificates, 22,943 unique identification numbers for registered drones, and 67 DGCA-approved Type-Certificate for drone models.
- The Government is promoting aircraft leasing through the International Financial Services Centre (IFSC) at GIFT City. More than 28 aircraft lessors have already registered, which have together leased more than 20 aircraft and 49 aircraft engines. Recently, Air India has commenced leasing of its wide body aircrafts from the IFSC zone and other airlines are also in process of establishing leasing company in IFSC.
- Realising the potential of the MRO industry in India, the Government has introduced several policies and regulations to bring India's MRO sector at par with global peers. MROs in India have enhanced their capacities in traditional segments such as airframes and the industry is branching to other MRO segments such as engines in collaboration with global OEMs. After the announcement of the National Civil Aviation Policy (NCAP- 2016), the number of MROs in India has increased to 147, from 114 in 2016. The setting up of new MROs has increased employment in the sector. More airports are building MRO facilities to add capacity thereby addressing infrastructure constraints.

Energy Infrastructure

- **Power Sector**
  - **Unified Grid**: India's power transmission operates as a unified grid with a transfer capability of 1,18,740 MW.

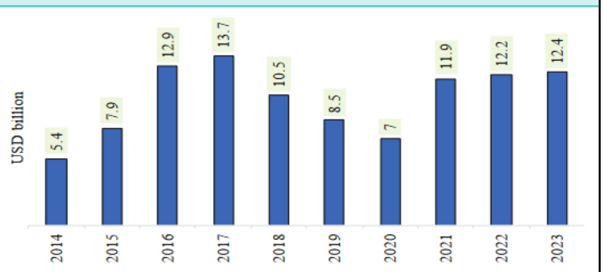
- **Expansion**: Transmission systems have grown to 4,85,544 circuit km and 12,51,080 MVA of transformation capacity by March 2024.
- **Demand Growth**: Peak electricity demand rose by 13% to 243 GW in FY24.
- **Electrification**: 2.86 crore households electrified since October 2017 under the Saubhagya scheme.
- **DISCOM Relief**: Electricity (late payment surcharge and related matters) Rules, 2022 helped settle ₹8.1 lakh crore of bills by April 2024.

Box XII. 9: Some Key Initiatives in the Power Sector

SAMARTH Mission	One Sun, One World, One Grid Initiative
• Launched in 2021, the Sustainable Agrarian Mission on Use of Agri-Residue in Thermal Power Plant (SAMARTH) has a full-time mission directorate to coordinate and monitor implementation. • Biomass co-firing in NCR thermal power plants has reached 1.68 per cent; efforts are underway to take it up to 5 per cent.	• A task force is studying the feasibility of interconnection of regional grids viz. Southeast Asia, South Asia, Middle East, Africa and Europe for exchange of renewable power. • Presently, discussions are going on with Saudi Arabia, UAE, Sri Lanka, Myanmar, Singapore, etc.
UJALA Scheme	**Street Lighting National Programme**
• Unnat Jyoti by Affordable LEDs for ALL (UJALA), launched in 2015, LED bulbs, LED tube lights and energy-efficient fans are sold to replace conventional and inefficient variants. • According to the Ministry of Power, this has resulted in an estimated energy savings of 48.42 billion kWh per year with avoided peak demand of 9,789 MW and GHG emission reduction of 39.30 million tonne CO_2 per year, and annual monetary savings of ₹19,335 crore in consumer electricity bills.	• This programme was launched in 2015 to replace conventional streetlights with smart and energy-efficient LED streetlights. Over 1.31 crore LED streetlights have been installed so far. • According to the Ministry of Power, this is estimated to have resulted in estimated energy savings of 8.80 billion kWh per year with avoided peak demand of 1,467 MW and GHG emission reduction of 6.06 million tonnes CO_2 per year and estimated annual monetary savings of ₹6,162 crore in electricity bills of municipalities.

- **Renewable Sector**
  - **Goals**: India aims for 50% of power capacity from non-fossil fuels by 2030.
  - **Current Capacity**: 190.57 GW of renewable energy installed, making up 43.12% of total capacity as of March 2024.
  - **Investments**: ₹8.5 lakh crore invested in clean energy (2014-2023), with an expected ₹30.5 lakh crore investment (2024-2030).
  - **FDI**: USD 17.88 billion received in the RE sector from April 2000 to March 2024.

Chart XII.22: Investment in Renewables



Source: REN21. Renewables 2024 Global Status Report

- **Future Targets**: Non-fossil fuel capacity to reach 349 GW by 2026-27 and 500.6 GW by 2029-30.

Major Programmes, Projects, and Initiatives in the Renewable Energy Sector

- **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM):** As of 31 March 2024, 166 MW decentralized solar capacity has been installed and 3.26 lakh agricultural pumps have been solarized under the Scheme.
- **Production Linked Incentive Scheme for National Programme on High Efficiency Solar Photovoltaic (PV) Modules**: To achieve manufacturing capacity of GW scale in High Efficiency Solar PV modules with outlay of ₹24,000 crore. As of 31 March 2024, four manufacturers have started manufacturing of solar PV modules.
- **Solar Parks Scheme:** To provide solar power developers with a plug and play model, by facilitating necessary infrastructure along with all statutory clearances. Scheme has a sanctioned capacity of 39.7 GW for the development of 56 Solar Parks in 13 States. Solar projects of capacity 11.59 GW have been commissioned in these parks and the remaining capacity is at various stages of implementation.
- **PM - Surya Ghar: Muft Bijli Yojana:** Aimed to install rooftop solar plants in one crore households with a total financial outlay of ₹75,021 crore and to be implemented until FY27. This is expected to enable an installation of around 30 GW of residential rooftop solar capacity and 40-45 GW of overall rooftop solar capacity addition by FY27.
- **CPSU Scheme Phase-II (Government Producer Scheme):** Aimed at setting up grid- connected solar PV power projects by PSUs and the Government organisations, using domestically manufactured solar PV cells and modules, with VGF support for self-use or use by the Government or Government entities. Out of the 8.2 GW capacity of solar PV power plants, about 1.66 GW capacity has been commissioned and the balance is under implementation as of 31 March 2024.
- **Wind Power:** Wind energy is led by indigenous wind power industry and strong project ecosystem, operation capabilities and a manufacturing base of 18 GW per annum. As of 31 March 2024, the wind power installed capacity has grown by about 2.1 times during the past 10 years to about 45.89 GW. As per REN21 Report, India stands fourth in wind power installed capacity in the world.
- **New Solar Power Scheme (for Particularly Vulnerable Tribal Groups (PVTG) Habitations/Villages:** Launched on 04 January 2024 under the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan for electrification of one lakh un-electrified PVTG households located in 18 States and one Union Territory by provision of off-grid solar systems where electricity supply through grid is not techno-economically feasible.
- **Green Energy Corridor (GEC) projects**: Initiated to facilitate renewable power evacuation and reshaping of the grid for future requirements. GEC-I is under implementation in eight States with cumulative achievement of 9,111 circuit kilometer (ckm) transmission

lines and 21,303 MVA substations. GEC-II is under implementation in seven States.

- **Bio Energy Programme: The National Bioenergy** Programme notified in November 2022 to be implemented from 1April 2022 to 31 March 2026 in two phases. As of 31 March 2024, installed capacity of biomass power and cogeneration projects was about 9.4 GW (grid-connected) and 0.92 GWeq. (off-grid), waste to energy projects capacity was 249.74 MW (grid-connected) and 336.06 MWeq. (off grid). Under biogas programme, about 51.04 lakhs of small biogas plants and 349 medium size biogas plants (10.6 MWeq.) have been installed.
- **National Green Hydrogen Mission**: Approved in January 2023 with outlay of ₹19,744 crore. The mission targets to achieve about 5 million metric tonne (MMT) of annual Green Hydrogen production capacity, associated renewable energy capacity of about 125 GW, ₹8 lakh crore in total investments, and 50 MMT CO_2 annual emission expected to be averted by year 2030.

Major Mechanisms for fostering Public Private Partnership (PPP)

Public Private Partnership Appraisal Committee (PPPAC)

- Apex body for appraisal of central sector PPP projects
- 77 projects with a total cost of ₹2.4 lakh crore were recommended from FY15 to FY24.

Viability Gap Funding (VGF)

- Assistance to financially unviable but socially/economically desirable PPP projects.
- 57 projects costing ₹64,926.1 crore were granted in-principle approval and 27 projects costing ₹25,263.8 crore were granted final approval from FY15 to FY24.
- Total VGF approval of ₹5,813.6 crore (both Union Government & State share) from FY15 to FY24.
- India Infrastructure Project Development Fund Scheme
- Financial support for project development of PPP Projects
- Notified in November 2022 with a total outlay of ₹150 crore for three years from FY23 to FY25.
- 28 proposals have been approved.
- Other Supportive instruments: Reference guides for setting up state PPP units, PPP project appraisal, and project implementation mode selection have been made. Web-based toolkits, post-award contract management toolkit and contingent liability for project sponsoring authorities have been developed to help them in PPP structuring.

Social and Economic Infrastructure

- **Sports Sector**
  - The Government supports states and union territories to enhance sports infrastructure.
  - Major Programmes, Projects, and Initiatives in Sports Sector
  - National Programme for Development of Sports (Khelo India) programme: 323 infrastructure projects have been sanctioned at a total cost of ₹3,073.7 crore. In FY24, 38 new infrastructure projects were sanctioned, and 58 projects were completed.
  - National Sports Development Fund: Ten (seven sports infrastructure and three sports promotion) projects have been sanctioned in FY24.
  - Sports Authority of India: Nine infrastructure projects were approved for different centres in FY24. 13 infrastructure projects completed during FY24.
  - National Sports University, Imphal: Development underway to enhance India's sports infrastructure and create world-class facilities for sports education, training, and research. The project has a sanctioned cost of ₹611.74 crore, which has reached an overall physical progress of 56 per cent.
  - Model Concession Agreement (MCA): To promote private participation in the development of sports infrastructure, Department of Sports has drafted an MCA for Development of Integrated Multi sports Arena on Design, Build, Finance Operate and Transfer (DBFOT) basis for development of integrated sports stadium complex (greenfield/brownfield) on PPP mode, in consultation with Infrastructure Finance Secretariat, Department of Economic Affairs, Ministry of Finance. Once finalised, States/UTs and Union Government departments can utilise the MCA to expedite the onboarding of private players for the development of sports infrastructure.
- **Water & Sanitation Sector**
  - **Swachh Bharat Mission – Grameen (SBM-G)**:

- **Phase I** (launched in October 2014): Achieved open defecation free (ODF) status.
- **Phase II**: Focus on sustaining ODF status and managing solid and liquid waste by 2024-25 with a ₹1.4 lakh crore outlay.
- **FY24 Achievements**:
- Solid waste management in 1,61,525 villages.
- Grey water management in 2,83,998 villages.
- Plastic waste management in 2,070 blocks.
- Faecal sludge management in 159 districts.
- ₹7,000 crore allocated, ₹6,802.58 crore utilized.

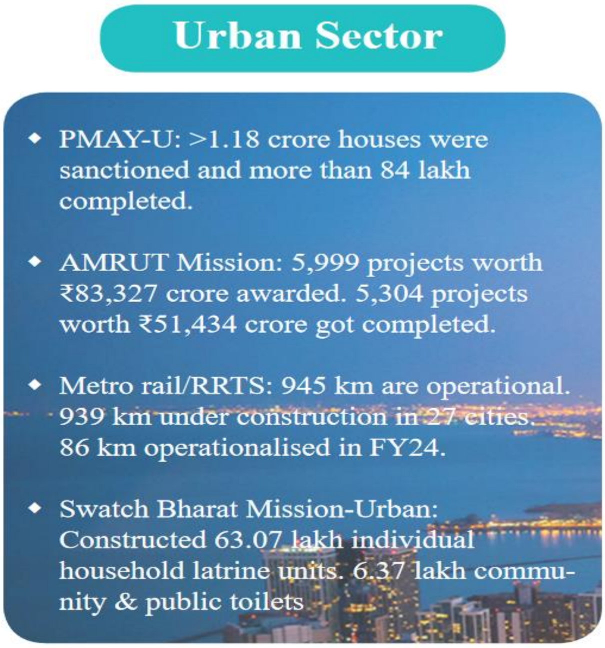
  - **Jal Jeevan Mission (JJM)**:

- Launched in August 2019 to provide tap water to every rural household by 2024 with a ₹3.6 lakh crore outlay.
- Tap water connections increased from 3.23 crore (17%) to 14.89 crore (76.12%) rural households.

  - **Water Resource Management Sector**
  - **Namami Gange Programme**:

- Launched in 2014-15 to conserve and rejuvenate the Ganga River.

- Budget increased from ₹20,000 crore (2014-2020) to ₹22,500 crore (2021-2026).
- Uses Hybrid Annuity Model (HAM) for sewage treatment plants.
- 33 projects sanctioned, integrating existing and new sewage treatment plants (STPs) under HAM-based PPP mode.
  - **Urban Sector**
    - **Housing for All**
    - **Pradhan Mantri Awas Yojana-Urban (PMAY-U)**:



- Launched in 2015 to provide pucca houses with basic amenities.
- Over 1.18 crore houses sanctioned; 1.14 crore started; 84 lakh completed.
- Scheme extended until December 31, 2024.
- Total investment: ₹8.07 lakh crore (Central, State/UT, and beneficiary contributions).
- ₹1.64 lakh crore of ₹2.00 lakh crore central assistance released.
  - **Affordable Rental Housing Complexes (ARHCs)**:
- First-time initiative to improve living conditions for urban migrants/poor.
- **Model 1**: 5,648 houses operational, 7,413 in process.
- **Model 2**: 82,273 units approved, 44,116 under construction, 3,969 completed.
  - **Swachh Bharat Mission Urban (SBM-U)**
- Aims for open defecation-free (ODF) and garbage-free urban areas.
- Achievements:
- 63.07 lakh individual household latrines (113.75% of target).
- 6.37 lakh community and public toilets (128% of target).

- **Future Urban Planning**

Chart XII.27: Value of projects completed under smart city mission (FY23 & FY24)

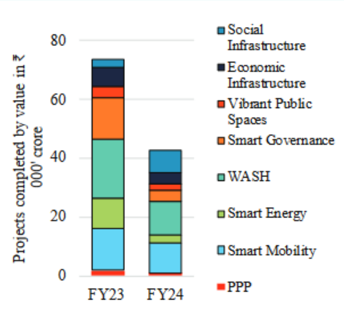
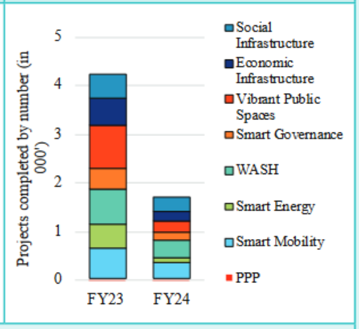


Chart XII.28: Number of projects completed under smart city mission (FY23 & FY24)



Source: Ministry of Housing and Urban Affairs

- By 2030, over 40% of India's population will live in urban areas.
- Cities to be transformed into economic growth centers.
- Requires efficient planning, robust project frameworks, and strengthened urban local bodies (ULBs).
- Project-based funding with ring-fenced revenue streams and value-for-money analysis.
  - **Tourism Sector**
    - Under the PRASHAD scheme, 29 new pilgrimage and heritage sites are being developed. ₹1,621.14 crore has been sanctioned, with 62.7% disbursed.
    - The Swadesh Darshan scheme, revamped as Swadesh Darshan 2.0, has an outlay of ₹3,800 crore. It targets the integrated development of 57 destinations across 32 states/UTs.

Implementation of NLP gains steam

India focuses on improving logistics infrastructure has led to an improvement of six places from 44 in 2018 to 38 in 2023 out of 139 countries in the Logistics Performance Index of the World Bank.

- National Logistics Policy (NLP) was launched in September 2022 to complement PMGS- NMP i.e., to drive business competitiveness through an integrated, efficient, sustainable, and cost-effective logistics network by leveraging best-in-class technology, and processes. The aim is to reduce the cost of logistics, improve the Logistics Performance Index ranking, and create a data-driven decision support mechanism for an efficient logistics ecosystem. NLP is being implemented through a comprehensive logistics action plan. The progress under each of these action areas is below:
- i. Integrated Digital Logistics Systems:
- Unified Logistics Integrated Platform, a single window platform, integrating 36 logistics-related digital systems/portals across eight Ministries and providing real-time information on 1,800 data fields has been developed.
- For tracking 100 per cent of India's containerised EXIM cargo, a Logistics Data Bank has been developed which uses Radio Frequency Identification (RFID), IoT, and Big

data analytics and is integrated with 28 port terminals of India, over 95 toll plazas, 407 container freight station/inland container depot and empty yards, 56 SEZs, three integrated check posts.

- ii. Service Quality Standards: An e-book has been developed on warehousing standards delineating existing standards issued by the Bureau of Indian Standards and Warehouse Development and Regulatory Authority.
- iii. Capacity Building: Training courses on logistics and PMGS-NMP are being integrated with central and state training institutes.
- iv. State engagement: States are developing State Logistics Plans aligned with NLP to give policy focus at the State level. 26 States have notified their State Logistics policies. An annual "Logistics Ease Across Different States (LEADS)" survey is also deployed in all State and Union Territories.
- v. EXIM Logistics: To streamline EXIM logistics, infrastructure gaps are addressed through action plans developed by the National Committee on Trade Facilitation (NCTF). NCTF Working Groups formulated a National Trade Facilitation Action Plan 2020-23. The action plan for 2024-26 is being developed.
- vi. Services Improvement Framework: The Service Improvement Group has been established with the involvement of over 30 business associations. Critical issues are raised by associations on the E-LoGS platform.
- vii. Sectoral Plans for Efficient Logistics: This aims to address the needs and challenges in the logistics sector, particularly of bulk and breakbulk cargo. Coal Logistics Plan and Policy was launched in February 2024. Comprehensive Port Connectivity Plan was prepared in 2022 that identified 107 port projects to strengthen connectivity between ports, railways, roadways, and inland waterways.
- viii. Facilitation of Development of Logistics Park: Guidelines for Multi-Modal Logistics Park are being reviewed.

Strategic Infrastructure

- **Space Sector**
  - India has made significant progress in the space sector, with 55 active space assets. These include communication, navigation, scientific, meteorological, and Earth observation satellites.
  - ISRO has added Launch Vehicle Mark-3 (LVM3) and Small Satellite Launch Vehicle (SSLV) to its fleet. Notable missions include Mars Orbiter Mission, ASTROSAT, Chandrayaan-2 Orbiter, Chandrayaan-3, and Aditya-L1.
  - The NavIC satellite navigation constellation was completed in 2016. New Space India Limited launched 72 OneWeb satellites, establishing LVM3 as a reliable global launch vehicle.
  - Technological gaps include the development of carbon **fibres**, semiconductor fabs, and major alloying elements. Challenges in commercialization include niche markets, pricing constraints, limited demand, and lack of long-term visibility.

Digital Infrastructure in India

Construction Sector and Digitalization

- Construction sector accounts for approximately 9% of India's annual Gross Value Added (GVA) in 2023-24.
  - Despite its significant economic contribution, it remains one of the least digitized sectors.

Recent technological integration in infrastructure development:

- **PM GatiShakti**: National Master Plan for multi-modal connectivity
- Bhuvan: ISRO's geoportal for Indian earth observation data products and services
- **BharatMaps**: Web mapping service by Survey of India
- Single Window Systems: For streamlining business approvals and permissions
- **PARIVESH portal:** For environmental, forest, wildlife and coastal regulation zone clearances
- **National Data Analytics Platform:** For data-driven policymaking
- **Unified Logistics Interface Platform:** To enhance logistics efficiency
- Pro-Active Governance and Timely Implementation (PRAGATI): For monitoring and reviewing important government projects
- India Investment Grid (IIG): Showcasing investment opportunities across India
- Various ministry-specific dashboards and data stacks for improved governance

Telecommunication Sector

- Telecommunications Act 2023 was enacted to amend and consolidate laws on telecommunication services and networks.
- It covers assignment of spectrum and related matters and aims to modernize the regulatory framework for the rapidly evolving telecom sector.
- Mobile network expansion:
  - Total mobile towers: 8.02 lakh
  - Base Transceiver Stations (BTSs): 29.37 lakh
  - 5G BTSs: 4.5 lakh, indicating significant progress in 5G rollout
- 4G saturation project:
- Total cost: ₹26,316 crore
  - Coverage: 24,680 uncovered villages in remote and difficult areas
  - Upgrading 6,279 villages from 2G/3G to 4G connectivity
  - Aims to bridge the digital divide in rural and remote areas

- Telecom equipment testing:
  - Over 69 labs designated as conformity assessment bodies
  - Testing areas: EMI/EMC, safety evaluations, technical requirements, and RF testing
  - Ensures functionality, reliability, and interoperability of telecommunications devices
- **Spectrum Regulatory Sandbox (SRS) or Wireless Test Zones (WiTe Zones):**
  - Part of the Millennium SRS initiative
  - Aims to foster innovation and promote "Make in India" in the telecom sector
  - Provides simplified regulatory framework for R&D activities
  - Categorized into urban and remote areas for various frequency band experiments
  - Eligible participants include academia, R&D labs, and telecom providers

Artificial Intelligence (AI)

India AI Programme

- **Vision:** Leveraging transformative technologies for inclusion, innovation, and social impact
- **Key pillars of the programme:**
  1. AI in Governance: Integrating AI into government processes and services
  2. AI IP & Innovation: Promoting intellectual property creation and innovative AI solutions
  3. AI Compute & Systems: Developing robust computing infrastructure for AI research and applications
  4. Data for AI: Ensuring availability and accessibility of quality data for AI development
  5. Skilling in AI: Building a skilled workforce capable of developing and implementing AI solutions
  6. AI Ethics & Governance: Establishing frameworks for responsible AI development and use

Global Partnership on Artificial Intelligence (GPAI)

- **India's involvement:**
  - Founding member since June 2020
  - Actively contributes to GPAI goals and objectives
  - Developing domestic initiatives for responsible AI development, deployment, and adoption

Investments and Initiatives

- **IndiaAI Mission:**
  - Allocated budget: Over ₹10,300 crore
  - Objectives: Democratize access to AI innovation pillars and ensure global competitiveness of India's AI ecosystem
- **AI Research Analytics and Knowledge Dissemination Platform (AIRAWAT):**
  - AI Supercomputer installed at C-DAC, Pune
  - Ranked 75th in top 500 global supercomputing list at the International Supercomputing Conference 2023 in Germany
  - Demonstrates India's growing capabilities in high-performance computing for AI research

Digital India Programme

Key Initiatives

1. **MeriPehchaan (National Single Sign-On):**
   - User authentication service for multiple online applications and services
   - Over 9,600 services of various Ministries/States integrated
   - Simplifies access to government services for citizens
2. **DigiLocker:**
   - Digital platform for document storage, issuance, and verification
   - Over 26.28 crore registered users
   - More than 674 crore documents stored
   - Facilitates paperless governance and easy access to official documents
3. **UMANG (Unified Mobile Application for New-age Governance):**
   - Single mobile app for major government services
   - 2,019 services available
   - Covers 207 Central and State Government departments
   - Enhances accessibility of government services through mobile devices

BharatNet Project:

- **BharatNet aims to provide broadband connectivity to all 2,50,000 Gram Panchayats (GPs) in India.**
  - **As of April 30, 2024, 6,85,501 km of optical fiber cable has been laid, with 2,12,229 GPs service-ready (via OFC or satellite).**
- **The project has been expanded to focus on service utilization, employing professional agencies for network construction, upgradation, and maintenance.**
- **Future plans include Fibre to Home (FTTH) connections and pilot projects to increase data usage in rural areas.**

GI Cloud - 'MeghRaj'

To harness the benefits of Cloud Computing, the Government has embarked upon an ambitious initiative – 'GI Cloud'.

- The objective of the initiative is to deliver information and communications technology (ICT) services over the Cloud to all the Departments/Ministries at the Centre and States/UTs to ensure the proliferation of Cloud ecosystem in the country.

- Presently, 25,806 virtual machines are running on GI Cloud and it is being used by more than 1,767 applications of the Government departments.
- To proliferate the MeghRaj ecosystem, the Government has also empanelled cloud service offerings of domestic and international cloud service providers (CSPs). Until date, 22 CSPs are empanelled and so far, more than 250 central and state departments are using the cloud services of empanelled CSPs.

Challenges and Opportunities:

Land-related issues:

- Delays in land acquisition and clearances are common across sectors.
- Slow adoption of digital land records.
- Greenfield airport projects face time-intensive challenges in site selection and approvals.

Skill demands:

- Aviation sector lacks widespread technical knowledge in areas like MRO operations.
- Infrastructure projects require specialized skills in project development, feasibility assessment, and financial analysis.
- Need for public-private partnerships to nurture these skills.

Limited private sector participation:

- Challenges include large capital requirements, long payback periods, risk allocation issues.
- Regulatory and contractual concerns, including lack of independent regulators in some sectors.
- New PPP models introduced, but adoption limited to specific sectors like roads and water.

Environmental and climate sustainability:

- Increasing importance in infrastructure development.
- Aviation sector faces challenges with upcoming CORSIA compliance (Carbon Offsetting and Reduction Scheme for International Aviation).
- Lack of ICAO-approved emissions unit programs in India and high costs of sustainable aviation fuel.

Data and reporting challenges:

- Lack of aggregated financial flow data into infrastructure due to complex financing structures.
- Inconsistent reporting formats and definitions across different sources.
- Limited information on capital expenditure by local self-governments and state public sector enterprises.
- Difficulty in avoiding double-counting of financial flows.

Absence of comprehensive infrastructure project tracking:

- No single source provides an inventory of all infrastructure projects in the country.
- Lack of a unified system to evaluate progress against targets across sectors and sub-sectors.
- Requires coordination between central, state, and local governments, as well as public and private project authorities.

Facilitation and Addressing the Bottlenecks:

- **National Infrastructure Pipeline (NIP):** Launched with a projected investment of ₹111 lakh crore for FY20-25, NIP includes over 9,666 projects covering 37 sub-sectors, with a focus on transportation, energy, and water sectors. It serves as a centralized portal for tracking and showcasing investment opportunities.
- **Project Monitoring Group (PMG):** An institutional mechanism for resolving issues in projects worth ₹500 crores and above, PMG has facilitated the resolution of 6,867 issues in 1,443 projects valued at ₹46.1 lakh crore.
- **PM GatiShakti National Master Plan (PMGS-NMP):** A collaborative government approach to planning multimodal infrastructure, enhancing logistics efficiency, and addressing last-mile connectivity gaps. By March 2024, 43 Ministries and all States/UTs were onboarded, with 1,530 data layers uploaded and 533 projects planned on the NMP portal.

Conclusion:

- **Infrastructure Growth:** Over the past decade, India has seen transformative changes in its infrastructure landscape, particularly in road, rail, air connectivity, sanitation, and digital infrastructure. However, infrastructure creation remains largely public sector-led, with the Central and State Governments contributing 78% of total investments between 2019 and 2023, while the private sector accounted for only 22%.
- **Need for Private Sector Involvement:** To sustain infrastructure development, increased private sector financing and resource mobilization from new sources are crucial. The Central, State, and Local Governments must provide policy and institutional support to facilitate this, learning from international examples like pooled financing, asset recycling, and land sales.
- **Data and Reporting Gaps:** There is a need to improve data capture and reporting mechanisms to better assess infrastructure demand, utilization rates, and financial flows. Current databases lack consistency and uniformity, leading to challenges in tracking infrastructure development and spending over time. Developing a consolidated, regularly updated mechanism for infrastructure data collection would help policymakers allocate resources more effectively.

Glossary

TERMS	MEANINGS
GBS (Gross Budgetary Support)	The financial assistance provided by the central government to public sector enterprises.
HAM	PPP model for infrastructure development where the government pays 40% of the

(Hybrid Annuity Model)	project cost during construction and the remaining 60% over 15 years as annuity payments.
IN-SPACe (Indian National Space Promotion and Authorisation Centre)	Single window agency to promote and authorize space activities in the private sector.
NSIL (New Space India Limited)	Public sector enterprise under the Department of Space to commercially exploit the research and development work of ISRO.

CHAPTER 13: CLIMATE CHANGE AND INDIA: WHY WE MUST LOOK AT THE PROBLEM THROUGH OUR LENS

- **Introduction**
- **Why is the Current Approach Flawed?**
- **Adopting the Dominant Climate Narrative has Negative Implications for the Developing World**
- **The Indian Way: A Sustainable Lifestyle**

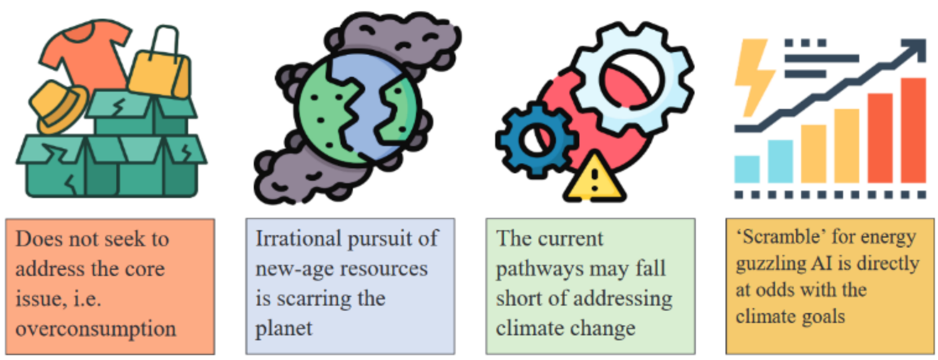
Introduction

- Taking a critical view of the Western approach of tackling Climate Change, the Economic Survey 2023-24 gives a clarion call to all developing countries to look at the climate change problem from a 'local lens'.
- It states that a 'one-size-fits-all' approach will not work, and developing countries need to be free to choose their own pathways since they are tasked with balancing developmental goals with meaningful climate action.

Why is the Current Approach against Climate Change Flawed?

There are inherent inconsistencies where the prescriptions to tackle Climate Change from the developed world do not hold ground globally. These are:

Issues with the current global approaches to addressing Climate Change



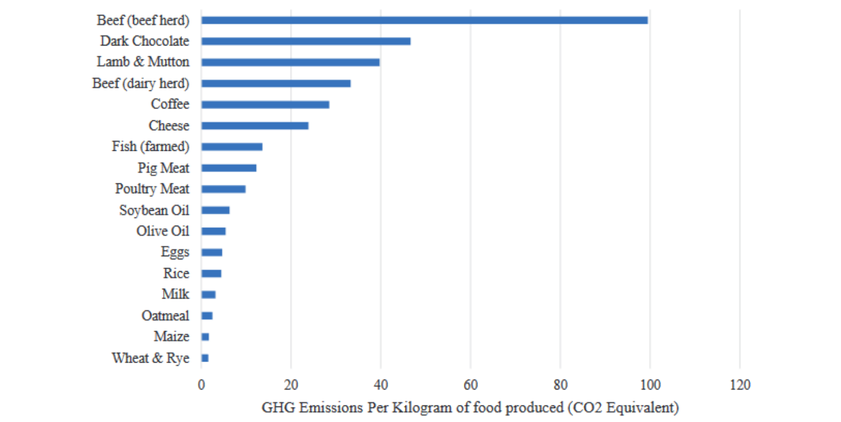
- The Western approach does not seek to address the root of the problem, i.e. overconsumption, but rather chooses to substitute the means to achieve overconsumption.
- The global pursuit of energy-guzzling technologies such as Artificial Intelligence and mining rare earth minerals in large quantities has only contributed to higher fossil fuel consumption. This is directly at odds with the stated objectives of climate change mitigation.
- Lifestyles in developed countries ignore humans' underlying relationship with Nature, with other people, with materiality and with themselves.

Main Arguments

Need for a Local Approach

- India calls for a "local lens" rather than a "one-size-fits-all" Western approach to climate change.
    - The survey argues that strategies effective in developed countries may not be suitable for developing nations.

Chart XIII.1: Greenhouse gas emissions across the supply chain for various food products (2018)



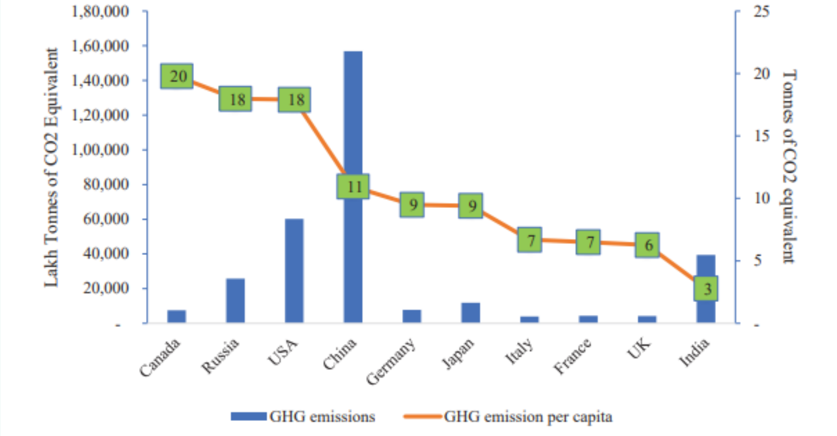
Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science, 360(6392), 987-992.– processed by Our World in Data (https://tinyurl.com/3xja4ajs)

- Each country's unique environmental, economic, and cultural contexts must be considered while making climate policies.
- Developing countries should have the freedom to balance developmental goals with climate action.
    - This point acknowledges the challenge of pursuing economic growth while also implementing meaningful climate initiatives.
    - It suggests that developing nations need flexibility to create strategies that address both poverty alleviation and environmental protection.

Criticism of Western Solutions

- Current global strategies for climate change are described as flawed and not universally applicable.

Chart XIII.5: Major Economies with their total and per-capita GHG emissions (CO2 equivalent)



Source: EDGAR (Emissions Database for Global Atmospheric Research) Community GHG Database, a collaboration between the European Commission, Joint Research Centre (JRC), the International Energy Agency (IEA), and comprising IEA-EDGAR CO2, EDGAR CH4, EDGAR N2O, EDGAR F-GASES version 8.0, (2023) European Commission, JRC (Datasets)

- ○ Many Western solutions fail to consider the diverse realities of developing countries.
- ○ These strategies adopted by western world often prioritize technological fixes over fundamental lifestyle changes.

Chart XIII.7: International Declarations that committed to different ideas

- 2005 G20 meet discarded one size fit all model [OSFA] of development
- In 2010-13 UN which had proposed OSFA in 1951 explicitly discarded it
- In 2015 MDG goals explicitly said Economic Development has to be founded on culture
- In 2015 NITI Aayog formation resolution the Union cabinet said that we need Bharatiya Model of Development and do what works in and for India

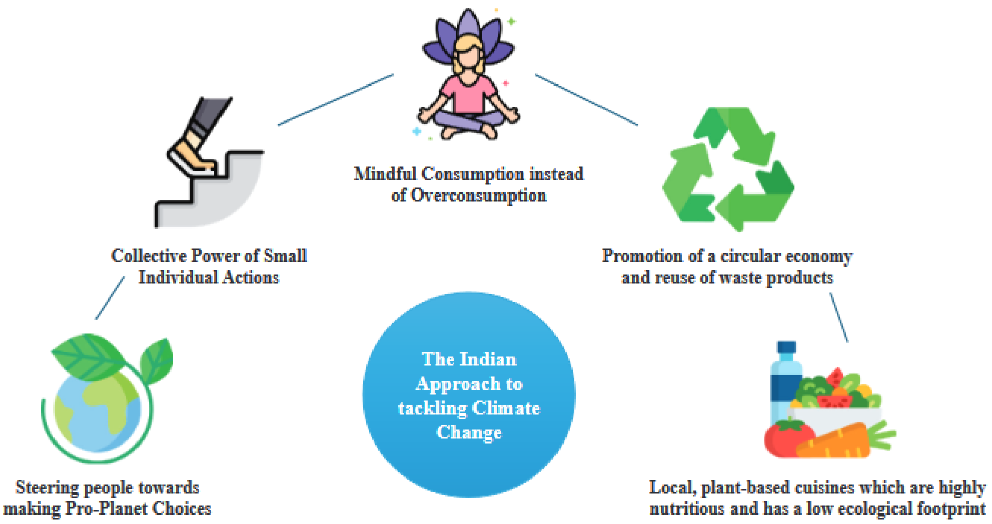
- Western solutions often fail to account for India's unique social and cultural fabric.
  - ○ India's traditions and cultural practices often inherently align with sustainable living.
  - ○ Imposing Western solutions on India and the larger global south could disrupt these existing sustainable practices.

Inconsistencies in Western Prescriptions

- The Western approach doesn't address overconsumption, seen as the root problem.
  - ○ The survey criticizes the focus on changing energy sources without addressing excessive consumption patterns.
  - ○ The true sustainability requires a fundamental shift in consumption habits, not just technological solutions.
- Energy-intensive technologies (e.g., AI, rare earth mineral mining) contradict climate change mitigation goals.
  - ○ The document points out the irony in promoting energy-intensive technologies as solutions to climate change.
  - ○ It highlights how the pursuit of these technologies often leads to increased fossil fuel consumption.
- Western lifestyles often ignore the human relationship with nature and other people.
  - ○ The survey suggests that Western approaches often treat nature as a resource to be exploited rather than a system to be in harmony with.
  - ○ It argues for a more holistic approach that considers the interconnectedness of humans, society, and the environment.

India's Sustainable Alternatives

- India emphasizes a harmonious relationship with nature, contrasting with Western overconsumption. Indian cultural values often promote living in balance with the environment.
  - ○ These values could serve as a model for more sustainable global practices.
- Traditional practices can be more sustainable alternatives:
  - ○ Integrated farming with livestock rearing:
    - ■ This practice reduces the competition between food for humans and feed for animals.
    - ■ It promotes efficient use of resources and reduces waste.



- ○ Multi-generational households to reduce urban sprawl and energy consumption:
  - ■ This living arrangement can decrease the demand for new urban development.
  - ■ It potentially reduces per-capita energy consumption through shared resources.

Mission LiFE (Lifestyle for Environment)

- Initiated by Prime Minister Narendra Modi
  - ○ This initiative aims to bring individual responsibility to the forefront of climate action.
  - ○ It proposes 75 LiFE Actions for individuals to adopt more sustainable lifestyles.

- Focuses on individual responsibility in fighting climate change
  - ○ The mission emphasizes that collective individual actions can lead to significant environmental impact.
  - ○ It aims to make sustainable living a mass movement.
- Promotes:
  - ○ Mindful consumption: Encouraging people to buy only what they need and use products fully.
  - ○ Circular economy: Promoting reuse, recycling, and repurposing of materials.
  - ○ Local, plant-based diets: Reducing the carbon footprint of food consumption.
  - ○ Energy and water conservation: Promoting efficient use of resources in daily life.

- The International Energy Agency estimates these measures could significantly reduce global CO2 emissions and generate consumer savings.
  - ○ The survey cites potential reductions of over 2 billion tonnes of CO2 emissions by 2030.
  - ○ It also mentions possible consumer savings of about $440 billion.

Conclusion

The Economic Survey argues that global climate change efforts should:

- Accommodate sovereign choices and economic needs recognizing that different countries have different priorities and capacities.
- Focus on changing individual behavior emphasizing that sustainable living starts with personal choices and habits.
- Rebuild societies with equanimity suggesting a more balanced approach to development that considers both human and environmental needs.

India's stance emphasizes the need for culturally appropriate solutions and challenges the universality of Western approaches to environmental issues. It proposes a path forward that integrates traditional wisdom with modern challenges, aiming for a more holistic and locally relevant approach to combating climate change.

India's achievements against targets for climate change:

- Successfully reduced the emission intensity vis-à-vis its GDP by 33% between 2005 and 2019, thus achieving the initial NDC target for 2030, 11 years ahead of scheduled time.
- Also achieved 40% of electric installed capacity through non-fossil fuel sources, nine years ahead of the target for 2030. Between 2017 and 2023, India has added around 100 GW of installed electric capacity, of which around 80% is attributed to non-fossil fuel based resources.
- India's contribution to climate action is significant through its international efforts International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI), creation of LeadIT, Infrastructure for Resilient Island States (IRIS), and Big Cat Alliance.