



LAST MINUTE PRELIMS RECKONER 2025

**ECONOMIC SURVEY
2024-25**

Dear Aspirants,

The Economic Survey is an important document in understanding the national and global economic trends as well as the development path our country is on. A thorough understanding of the document will be a valuable addition **not only in your preparation for the preliminary exam** but also for the **Mains and interview stages as well.**

As the journey towards CSE 2025 intensifies, **reading the full Economic Survey document, spanning 500 pages, can seem like a daunting task.** But more than just reading the survey, what is required is an exam oriented analysis of the information in order to understand trends, various government initiatives, challenges, and opportunities.

In order to make this task easier for you and make your journey forward less burdensome, we have picked out the **important themes, data, and analysis in this document.** Each chapter has been carefully analysed to pick out the essential information and themes, presenting you with a **condensed version of the survey.** We hope that this aids and enriches your preparation and enables you to have a more holistic view of our economy and our country's development prospects.

Happy Learning!

Team iLearn IAS

List of Contents

CHAPTER 1: STATE OF THE ECONOMY: GETTING BACK INTO THE FAST LANE	3
CHAPTER 2: MONETARY AND FINANCIAL SECTOR DEVELOPMENTS : THE CART AND THE HORSE	12
CHAPTER 3: EXTERNAL SECTOR: GETTING FDI RIGHT	19
CHAPTER 4: PRICES AND INFLATION : UNDERSTANDING THE DYNAMICS	26
CHAPTER 5: MEDIUM TERM OUTLOOK : DEREGULATION DRIVES GROWTH.....	31
CHAPTER 6: INVESTMENT AND INFRASTRUCTURE: KEEPING IT GOING.....	37
CHAPTER 7: INDUSTRY: ALL ABOUT BUSINESS REFORMS	45
CHAPTER 8: SERVICES: NEW CHALLENGES FOR THE OLD WAR HORSE.....	51
CHAPTER 9: AGRICULTURE AND FOOD MANAGEMENT: SECTOR OF THE FUTURE	57
CHAPTER 10: CLIMATE AND ENVIRONMENT: ADAPTATION MATTERS.....	66
CHAPTER 11: SOCIAL SECTOR: EXTENDING REACH AND DRIVING EMPOWERMENT.....	78
CHAPTER 12: EMPLOYMENT AND SKILL DEVELOPMENT: EXISTENTIAL PRIORITIES.....	90
CHAPTER 13: LABOUR IN THE AI ERA: CRISIS OR CATALYST?	99



CHAPTER 1: STATE OF THE ECONOMY: GETTING BACK INTO THE FAST LANE



CHAPTER AT A GLANCE

- The first chapter gives an overview of both **global and domestic economic trends** and provides a closer look at how India's economy has been performing amid global uncertainties.
- The **global economy exhibited steady yet uneven growth** across regions in 2024, with **manufacturing slowing down** in Europe and parts of Asia, mainly due to supply chain disruptions and weak external demand. In contrast, the **services sector performed better**, supporting growth in many economies.
- Although inflationary pressures decreased, **trade risks, geopolitical tensions, and policy rate uncertainty still exist**.
- Against this global context, **the Indian economy displayed steady growth** driven by strong agricultural output, steady private consumption, and macroeconomic stability. As per the first advance estimates of national accounts, **India's real GDP is estimated to grow by 6.4 percent in FY25**. However, India's economic outlook is still shaped by global uncertainties, trade fluctuations, and inflation risks.
- This chapter is organised **broadly into four sections**. The first section outlines the global economic scenario comprehensively. The second section focuses on the domestic macroeconomic situation. The third section delves into the emerging trends in public finances, inflation, the external sector, financial markets, and employment. The concluding section presents the prospects and outlook for growth.

GLOBAL ECONOMIC SCENARIO

- Global economic growth has remained **fairly moderate** in 2024 despite political and geopolitical challenges.
- **Political uncertainty due to major elections** (with 50% of the global population voting in elections) affected economic stability, and conflicts like **Israel-Hamas and Russia-Ukraine increased inflation** by raising the cost of food and oil. Critical infrastructure was more vulnerable to **cyber-attacks**, and disruptions to international trade increased market volatility.

Economic Growth Trends and Projections

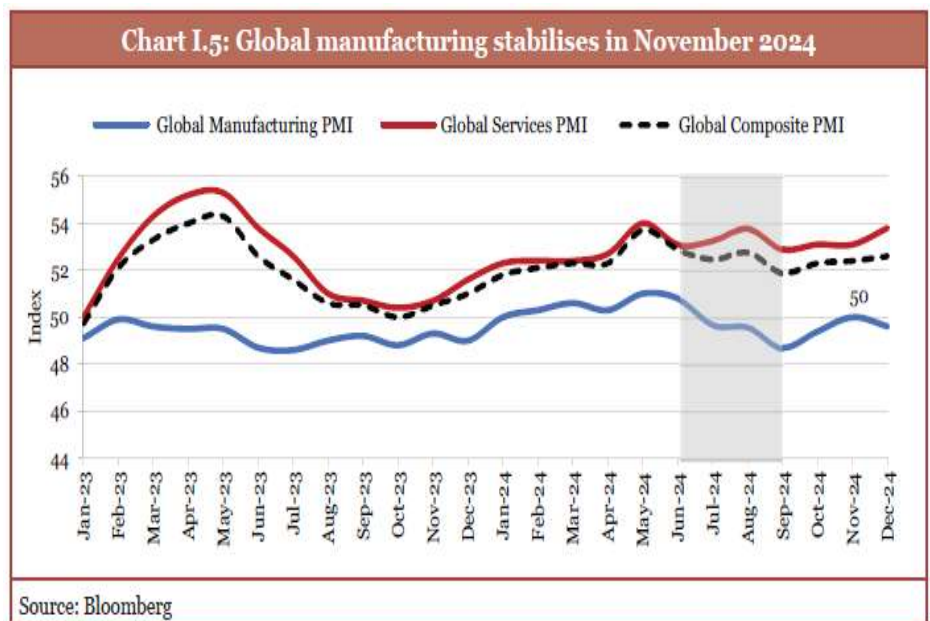
- The global economy grew by **3.3 per cent in 2023**.
- The **International Monetary Fund (IMF)** has projected growth of **3.2 per cent and 3.3 per cent for 2024 and 2025**, respectively.
- Over the next five years, global growth is expected to average around **3.2 per cent**, which is modest by historical standards. However, growth trajectories **varied significantly across regions**.

Steady global growth and varied regional dynamics

- While the **US maintained stable growth**, the **Euro area struggled** due to manufacturing weakness. **Asia saw mixed trends**, with Japan's growth hindered by domestic supply disruptions and China's growth affected by sluggish private consumption and investment, alongside challenges in the real estate sector.

Services sector growth steady; manufacturing faces challenges

- The global composite **Purchasing Managers' Index (PMI)** has stayed in the expansion zone for the fourteenth month in a row (as of December 2024). **The services sector continues to show strength, while the manufacturing PMI indicated contraction.**
- Manufacturing production trends varied by region. The **Eurozone saw the steepest contractions**, led by France, Germany, and Austria.
- North America showed mixed results, with Canada's growth offset by declines in the US and Mexico. **India reported the strongest expansion of output.**



The **Purchasing Managers' Index (PMI)** is a vital economic indicator that assesses business activity in the manufacturing and services sectors. **Globally, S&P Global releases PMI data** for over 30 countries, **including India**, while ISM independently compiles PMI for the U.S., and other institutions handle country-specific PMIs.

PMI Interpretation:

PMI > 50: Indicates economic expansion.

PMI < 50: Indicates economic contraction.

PMI = 50: Suggests no significant change in activity.

PMI is widely used by policymakers, investors, and businesses to track economic trends, business confidence, and sectoral performance, helping to gauge overall economic momentum across regions.

Inflation Eases, But Risks Remain

- Inflation rates** across economies have **trended downward** steadily, approaching central bank target levels due to **tighter monetary policy** regimes across the globe and supply chains adapting to higher levels of economic uncertainty.
- Shipping disruptions and higher freight costs** sustained inflationary pressures, though **commodity prices are expected to decline in 2025-26.**

Easing monetary policy stances amidst divergent expectations

- Central banks **began rate cuts**, but **pace varies across economies**.
- **Sovereign bond yields** dropped mid-year but rose in **Q4 2024** due to renewed inflation concerns. **China's bond yields fell further**, widening the **US-China yield gap**.

Geopolitical Risks and Trade Disruptions

- Geopolitical risks remain elevated due to **ongoing conflicts and trade disruptions**, which pose significant risks to the global economic outlook. These risks can influence growth, inflation, financial markets, and supply chains.
- An intensification of the evolving **conflicts in the Middle East, or the Russia-Ukraine conflict**, could lead to market **repricing of sovereign risk** in the affected regions and disrupt global energy markets.
- Tensions in the Middle East have disrupted trade through one of the critical shipping routes – **the Suez Canal**. About **15 per cent of global maritime trade volume** normally passes through the Suez Canal. In response, several shipping companies have diverted their ships around the **Cape of Good Hope**, which has **increased delivery times by 10 days or more**, on average.
- **G20 trade restrictions grew**, now affecting 12.7 percent of G20 imports—more than three times the coverage of such measures in 2015—raising concerns about **protectionism and slower global growth**.

Sovereign Risk

Any risk arising on chances of **a government failing to make debt repayments** or not honouring a loan agreement is a sovereign risk. **Repricing of sovereign risk** means that investors and financial markets **adjust their perception of a country's creditworthiness**, leading to changes in **borrowing costs, bond yields, and investment flows**.

DOMESTIC MACROECONOMIC SITUATION: STABILITY AMID GLOBAL UNCERTAINTY

- As per the first advance estimates released by the **National Statistical Office**, Ministry of Statistics & Programme Implementation (MoSPI), the **real gross domestic product (GDP) growth for FY25 is estimated to be 6.4 percent**, driven by aggregate demand in the economy with **private final consumption expenditure (PFCE)** at constant prices estimated to grow by **7.3 percent**, supported by a **rebound in rural demand**.
- **Gross Fixed Capital Formation (GFCF)**, an indicator of investment activity, is also expected to grow by **6.4%**.

The Private final consumption expenditure (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) refers to **investment in fixed assets like infrastructure, machinery, and buildings**, contributing to long-term economic growth.

Resilient Recovery

- The economy has surpassed its **pre-pandemic trajectory** across sectors. By **H1 (the first half) FY25**, aggregate **GVA** had exceeded **pre-pandemic levels**, with **agriculture and industry sustaining growth above long-term trends**. The **services sector** has nearly recovered, although **trade, hospitality, and transport** continue to lag.

Gross Value Added (GVA) measures the value producers add to goods and services by subtracting the cost of intermediate goods and services used in production.

GVA=GDP+Subsidies–Taxes on Products

Growth in H1 (the first half) FY25 Driven by Agriculture and Services Sector

- India's **GVA grew 6.2% in H1 FY25**, with **agriculture and services as key drivers**.
- While **manufacturing faced headwinds from weak global demand and supply chain disruptions**, agriculture **grew 3.5% in Q2**, supported by **above-normal monsoons and record Kharif production**.
- As per the first advanced estimates of agricultural production for 2024-25, total Kharif food grain production is estimated at a **record 1647.05 lakh metric tonnes (LMT)**, higher by 5.7 per cent compared to 2023-24 and 8.2 per cent higher than the average food grain production in the past five years.

Manufacturing Sector Growth Moderates But Shows Positive Expectations

- The **industrial sector grew 6% in H1 FY25**, with a **strong Q1 (8.3%) but slower Q2**. **Exports weakened**, and **festive season shifts** impacted demand. While oil, steel, and cement sectors faced challenges, government capital spending and post-monsoon recovery are expected to boost **manufacturing, mining, and construction**. India's **Manufacturing PMI remained strong**, driven by **new orders and external demand recovery**.

Robust Growth in the Services Sector

- The **services sector grew 7.1% in H1 FY25**, supported by **strong financial, real estate, and professional services growth**. **Trade, hospitality, and transport improved**, with hotel occupancy and air cargo activity rising. **IT sector performance rebounded**, and **services PMI stayed in the expansion zone**.

Analysis of GDP by Expenditure Categories

- India's GDP at constant (2011-12) prices grew by 6.7 per cent and 5.4 per cent in Q1 and Q2 FY25, respectively.
- This implied a **real GDP growth of 6.0 per cent** in the first half (H1) of the current fiscal (FY25), led by **rural demand**, reflected in higher **2-wheeler and tractor sales**. **Urban consumption showed mixed trends**, with **slower passenger vehicle sales but rising air traffic (7.7% YoY)**. GFCF growth slowed from 10.1% (H1 FY24) to 6.4% (H1 FY25) due to election-related public capex slowdown and weak private investment.

Chart I.29: GDP growth in H1 FY25 at 6.0 per cent

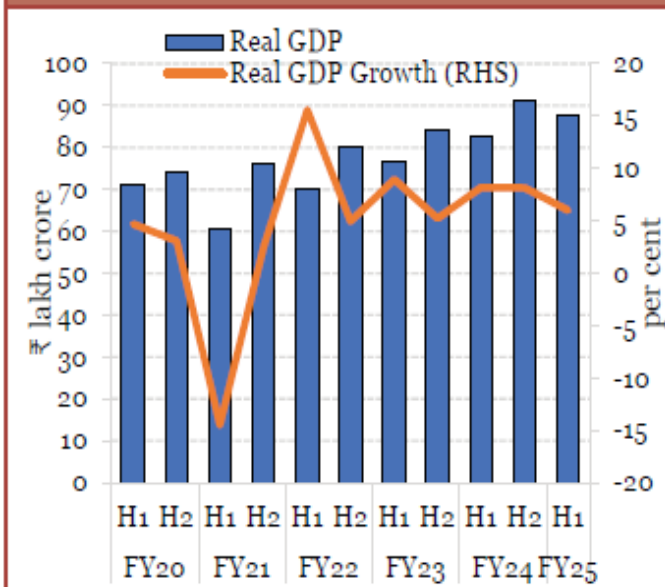
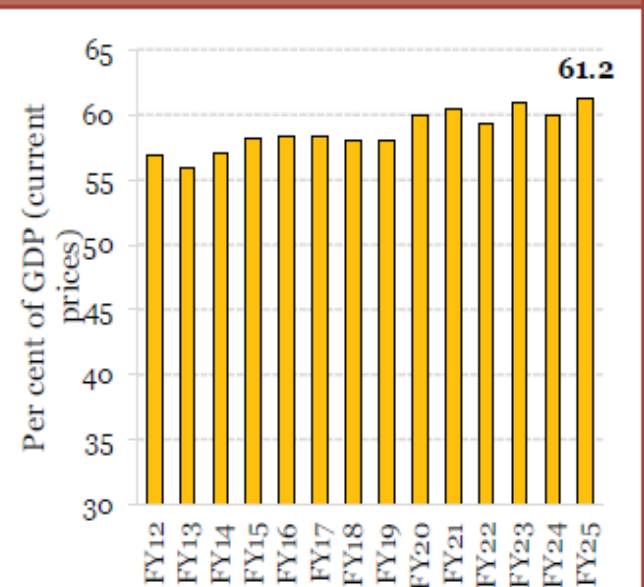


Chart I.30: Highest share of private consumption in H1 across all years



Source: Calculations based on Statement 13: Annual and Quarterly Estimates of GDP at constant prices and Statement 14: Annual and Quarterly Estimates of GDP at current prices, MoSPI

External Trade Performance

- Exports of goods and services grew 5.6% in H1 FY25, while imports rose only 0.7%. In Q2 FY25, imports declined 2.9%, mainly due to lower commodity prices, leading to a positive net export contribution to GDP.

ECONOMY CHARACTERISED BY STABILITY AND INCLUSIVITY ON MULTIPLE FRONTS

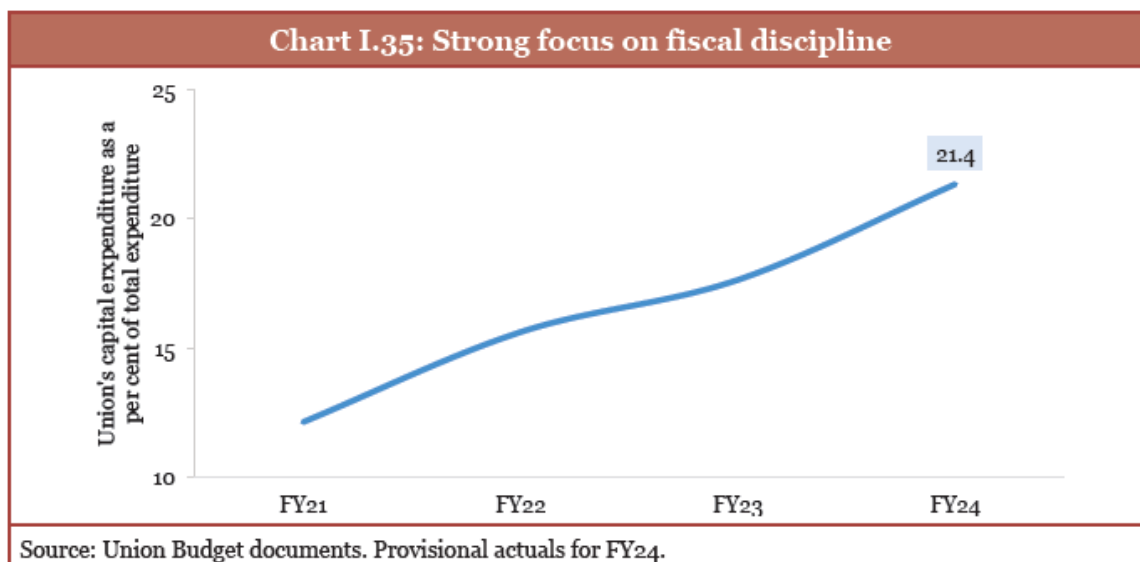
Improving Public Finances Support Macro Stability

- Fiscal prudence has contained general government dissavings, ensuring a stable savings-investment balance and avoiding excessive foreign funding reliance.
- Private corporate savings remain at 14% of GDP, while household savings moderated, but CAD remained stable.

Dissavings occur when **expenditures exceed income**, leading to a reduction in accumulated savings or an increase in debt. In government finances, it refers to a situation where **public spending surpasses revenue**, potentially requiring borrowing or foreign funding to cover the deficit.

Fiscal Discipline of the Union Government

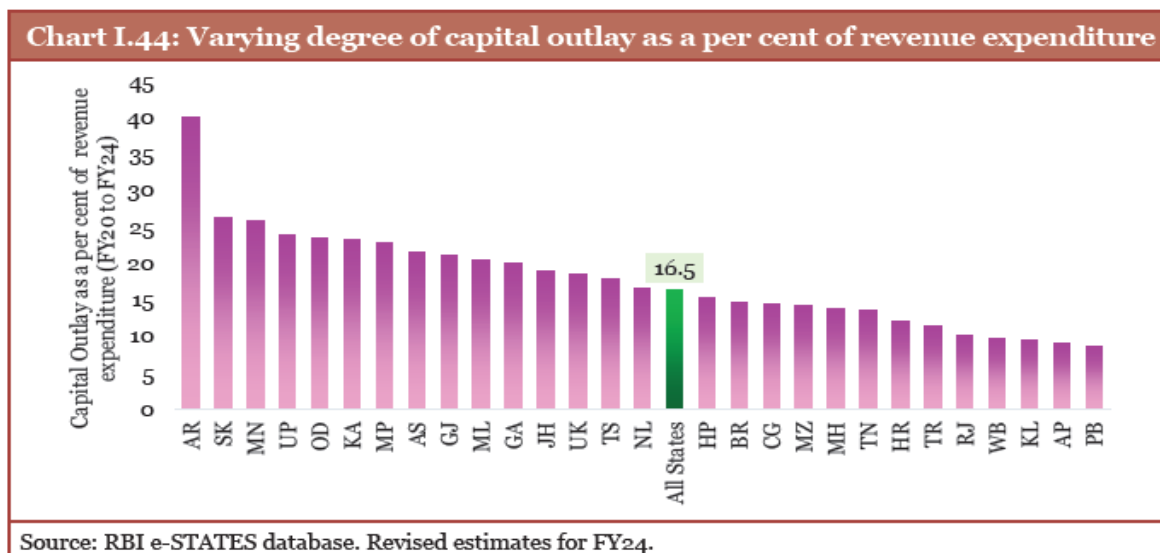
- The Union government's indicators of fiscal discipline have improved progressively. **Capital expenditure share in total spending has consistently increased since FY21**, enhancing long-term growth.



- **April-November 2024 trends:**
 - **Capex (Capital Expenditure) rebounded** after elections, with **75% directed to defence, railways, and road transport**.
 - **Gross Tax Revenue (GTR) grew 10.7% YoY**, but higher devolution to states kept net tax revenue stagnant.

Varying Patterns in State Finances

- **State tax revenues grew 10.8%**, while their share in central taxes surged **38.1%**, increasing reliance on devolution.
- **GST remains the main revenue source for 23 states**, with **Manipur (78%)** and **Nagaland (72%) most dependent**.
- In the quality of expenditure, measured by **capital outlay** as a per cent of revenue expenditure over the five years ending FY24, states exhibited **considerable variation**.



Inflation – Low and Stable Core Inflation Amid Volatile Food Prices

- **Retail headline inflation**, as measured by the change in the **Consumer Price Index (CPI)**, has **softened from 5.4 per cent in FY24 to 4.9 per cent** in April – December 2024. The decline is attributed to a **0.9 percentage point reduction** in core (non-food, nonfuel) inflation between FY24 and April – December 2024.

- **Food inflation (CFPI) rose to 8.4%**, driven by **vegetables and pulses**, with **TOP (Tomato, Onion, Potato) price fluctuations** adding volatility.

Retail Headline Inflation: The rate at which the **general price level of goods and services**, as measured by the Consumer Price Index (CPI), increases over a specific period, reflecting the overall inflation experienced by consumers.

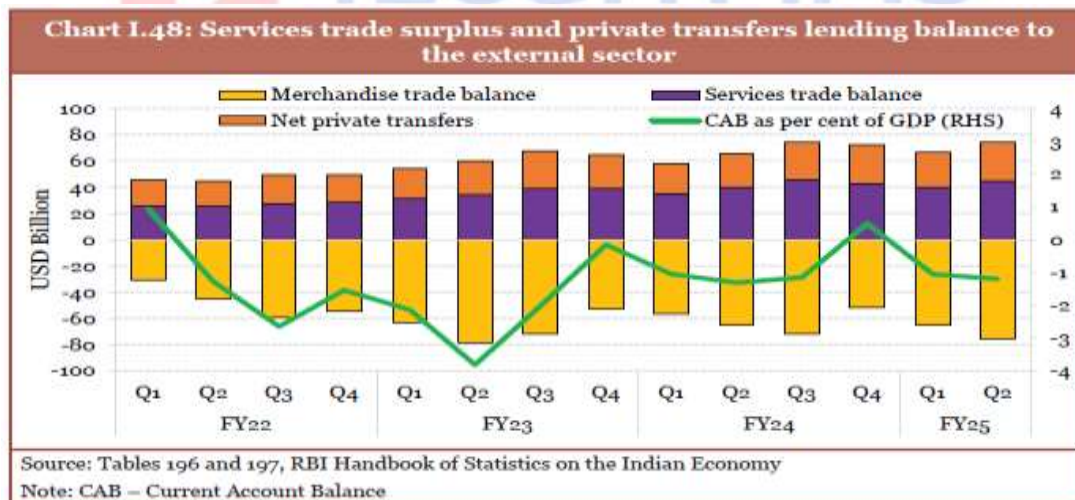
Consumer Price Index (CPI): The Consumer Price Index **measures change over time in the prices paid by consumers** for a representative basket of goods and services.

Core Inflation: The change in the cost of goods and services **excluding food and fuel prices, which are more volatile**, providing a clearer picture of underlying inflation trends.

CFPI :CFPI stands for **Consumer Food Price Index** and it measures the change in retail prices of food products consumed by a defined population group, with reference to a base year.

External Sector Stability Safeguarded by Services Trade and Record Remittances

- **Merchandise exports grew 1.6% YoY**, with non-petroleum exports up 7.1% and non-gems & jewellery exports up 9.1%. **Merchandise imports increased 5.2%**, led by higher gold imports and non-oil, non-gold demand.
- **India's merchandise trade deficit widened** as imports outpaced exports, but a **strong services trade surplus and remittances** helped balance the overall trade deficit. India was the **world's top remittance recipient** per the **World Bank**, driven by OECD job growth.
- **India ranked 7th in global services exports**, with **record remittances** keeping **CAD contained at 1.2% of GDP in Q2 FY25**.

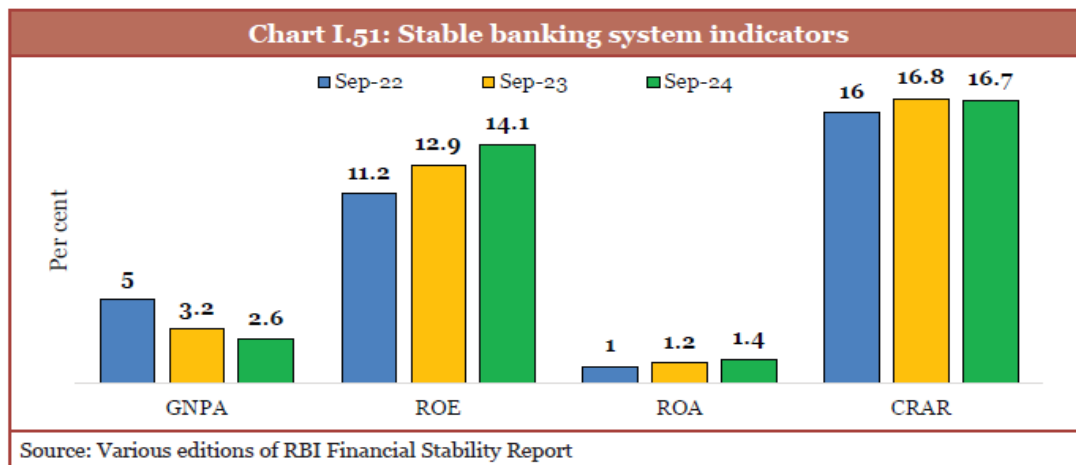


- **Forex reserves** remained strong at **\$634.6 billion (January 2025)**, covering **90% of external debt and 10+ months of imports**.

Financial Sector Prospects Amid a Moderation of Credit Growth

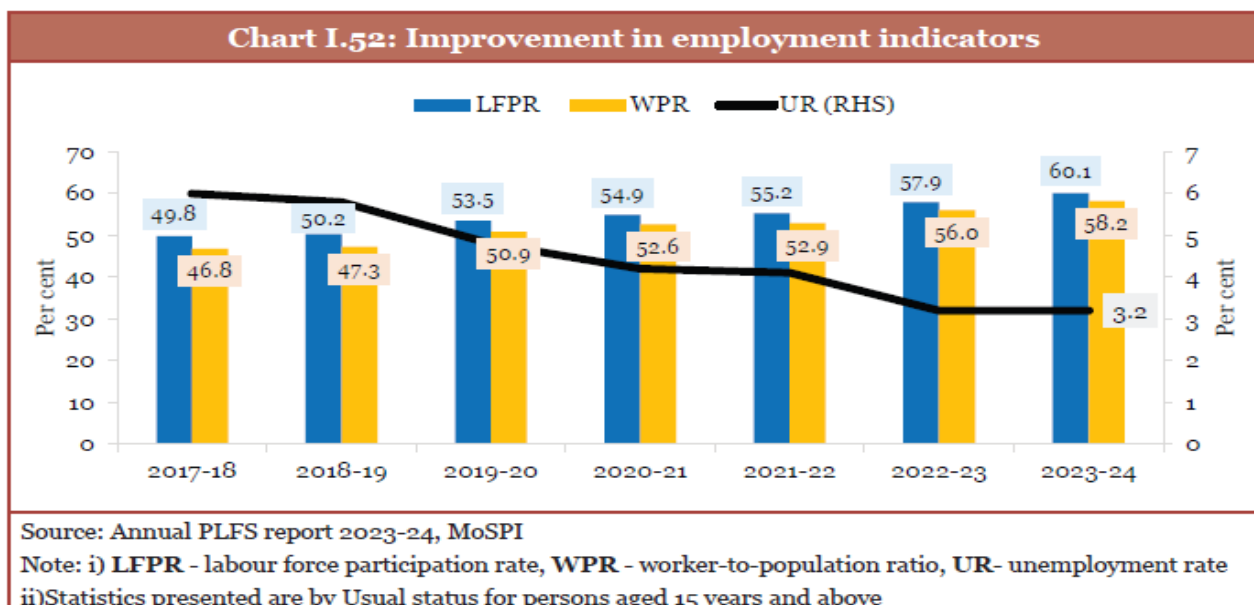
- **Banking sector remains stable**, well-capitalized, and continues credit expansion.
- Credit growth moderated due to a high base and regulatory tightening; housing loans remain the largest driver.
- **Asset quality improved:**
 - **Gross NPA ratio fell to 2.6% (12-year low).**
 - **Capital Adequacy Ratio (CRAR) at 16.7%.**

- Bank profitability surged 22.2% YoY in H1 FY25.
- Unsecured loans pose risks, with 51.9% of fresh NPAs stemming from personal loans and credit card defaults.



Employment Trends

- As per the 2023-24 annual **Periodic Labour Force Survey (PLFS)** report, the unemployment rate for individuals aged 15 years and above has **steadily declined from 6 per cent in 2017-18 to 3.2 per cent in 2023-24**; urban joblessness dropped to 6.4% (Q2 FY25).
- The **labour force participation rate (LFPR)** and the **worker-to-population ratio (WPR)** have also increased.
- The formal sector in India has seen significant growth, with net **Employees' Provident Fund Organisation (EPFO) subscriptions** more than **doubling** from 61 lakh in FY19 to 131 lakh in FY24.
- **AI's (Artificial Intelligence) impact on jobs** presents both challenges and opportunities, requiring strong policy and skill development focus.



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.

Worker Population Ratio (WPR): WPR is defined as the percentage of employed persons in the population.

Outlook and Way Forward

- **Global** growth in 2024 stays steady but uneven, with services thriving while manufacturing struggles, especially in Europe. Trade outlook remains uncertain.
- **Inflation** is cooling, but geopolitical risks like the Middle East crisis and Russia-Ukraine war pose challenges. Central banks are adjusting policies at different paces.
- In India, **rural demand and public investment** are fueling growth. Manufacturing is strong, but global overcapacity in sectors like steel could affect exports.
- **Food inflation should ease in Q4 FY25** with better harvests, though weather risks and global price swings remain concerns. Core inflation is stable but not risk-free.
- **India's fundamentals are solid**, with stable consumption, fiscal discipline, and a strong external position. Growth for FY26 is estimated at **6.3–6.8%**.
- Navigating global headwinds will require **strategic and prudent policy management** and reinforcing the domestic fundamentals. The **Budget 2024-25** focuses on deregulation, structural reforms, and boosting competitiveness to sustain long-term growth.



CHAPTER 2: MONETARY AND FINANCIAL SECTOR DEVELOPMENTS : THE CART AND THE HORSE



CHAPTER AT A GLANCE

- Exploring the key trends in banking, financial markets, and monetary policy decisions, the second chapter examines the **monetary policy and financial intermediation ecosystem** in the country.
- India's monetary and financial sectors have performed well in the first nine months of FY25, with **steady bank credit growth** and consistent improvement in the profitability of scheduled commercial banks (SCBs) as reflected in a **fall in gross non-performing assets (GNPAs)** accompanied by a **rise in the capital-to-risk weighted asset ratio (CRAR)**.
- There is significant **progress in financial inclusion**, with the **RBI's Financial Inclusion Index rising from 53.9 in March 2021 to 64.2 in March 2024**, aided by rural financial institutions (RFIs) and development financial institutions (DFIs).
- Emerging trends such as **rising consumer credit, increased non-bank financing, and expanding equity-based investment** pose new challenges for financial regulation.
- The chapter is divided broadly into two parts. In the first part, monetary policy developments and important financial indicators like Reserve Money (M0), Broad Money (M3), and the Money Multiplier (MM), are discussed. In the second part, banking, capital markets, insurance, pensions, financial regulation, cybersecurity, and the function of the FSDC are examined. An outlook on upcoming difficulties facing the financial industry concludes the chapter.

MONETARY DEVELOPMENTS

- The primary aim of monetary policy is to maintain **price stability** while supporting economic growth. The **RBI employs policy tools** such as interest rate adjustments, open market operations (OMO), cash reserve ratio (CRR), and statutory liquidity ratio (SLR) to manage inflation and liquidity.

Monetary Policy Decisions in FY25

- **Repo Rate:** The Monetary Policy Committee (MPC) kept the **policy repo rate unchanged at 6.5%** in the first nine months of FY25.
- **Policy Stance:**
 - Until **August 2024**, the RBI maintained its stance of "**withdrawal of accommodation**" to control inflation.
 - In **October 2024**, the stance shifted to "**neutral**", indicating a balanced approach between inflation and growth.
 - In **December 2024**, the **CRR was reduced from 4.5% to 4%**, infusing **₹1.16 lakh crore liquidity** into the banking system.

Withdrawal of Accommodation: Tightening policy to reduce liquidity and control inflation.

Neutral Stance: Balanced approach, allowing flexibility for both inflation control and growth.

Monetary Policy Tools of RBI

1. Quantitative Tools (Affect Money Supply Directly)

- **Repo Rate:** Interest rate at which RBI lends to banks, influencing borrowing costs.
- **Reverse Repo Rate:** Rate at which RBI borrows from banks to absorb excess liquidity.
- **Open Market Operations (OMO):** Buying/selling government securities to control liquidity.
- **Cash Reserve Ratio (CRR):** The percentage of a bank's deposits to be maintained with RBI, reducing/increasing funds available for lending.
- **Statutory Liquidity Ratio (SLR):** The percentage of deposits banks must invest in RBI-approved securities, ensuring stability.
- **Bank Rate:** The long-term lending rate for banks, influencing interest rates across the economy.
- **Liquidity Adjustment Facility (LAF):** Daily borrowing/lending facility for banks via repo and reverse repo operations.
- **Marginal Standing Facility (MSF):** Emergency borrowing window for banks at a higher interest rate than the repo rate.

2. Qualitative Tools (Affect Credit Flow & Distribution)

- **Credit Rationing:** RBI imposes limits on credit for specific sectors to control lending.
- **Moral Suasion:** RBI persuades banks to follow monetary policies voluntarily.
- **Direct Action:** RBI takes action against banks not complying with guidelines.

These tools help RBI **control inflation, ensure price stability, and promote economic growth.**

Trends in Money Supply

○ Money Aggregates:

- **M0 (Reserve Money / Monetary Base, the most liquid form of money):** Growth slowed to **3.6% YoY (Jan 2025)** from **6.3% YoY** a year ago.
- **M3 (Broad Money):** expanded by **9.3% YoY**, reflecting **moderate liquidity** in the economy.
- **Aggregate deposits** were the largest component of M3 growth, while **bank credit to the commercial sector** was the main source of its expansion.

M0 (Monetary Base): The most liquid form of money, consisting of currency in circulation, bankers' deposits with the RBI, and other deposits with RBI.

M1 (Narrow Money): Includes M0 plus demand deposits in banks (current and savings accounts) and other liquid deposits, representing money readily available for transactions.

M2: M1 plus post office savings deposits, which adds a slightly less liquid component but still easily accessible.

M3 (Broad Money): M1 plus time deposits in banks, representing the total money supply available in the economy, including both liquid and less liquid assets.

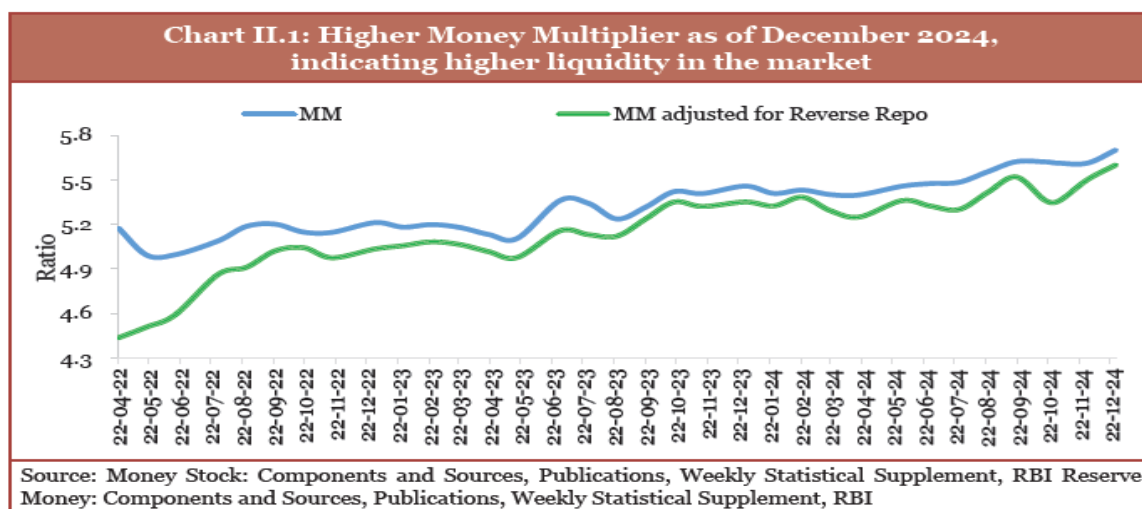
Money Multiplier (MM) Trends

- **Definition:** The **Money Multiplier (MM)** represents the amount of money generated in the economy from each unit of **Monetary Base (M0)**.
- **MM in FY25:**

- Increased to **5.7 in Dec 2024**, up from **5.5 a year ago**, indicating **higher liquidity** in the market.
- **Adjusted MM** (excluding reverse repo) stood at **5.6**.
- **Factors Affecting MM:**
 - **Higher Cash Holdings:** Reduces MM as less money enters the banking system.
 - **CRR Levels:** Higher CRR reduces MM as more reserves are held by banks.
 - **Financial Inclusion:** Expansion in formal banking has encouraged people to deposit more, leading to a **rise in MM**.

Historical Trends in Money Multiplier

- MM declined during the **COVID-19 pandemic** due to economic uncertainty and increased cash hoarding.
- Since **FY22**, MM has been rising, reflecting **enhanced liquidity and financial sector development**.



FINANCIAL INTERMEDIATION

- **Role of Financial Intermediaries:** Banks, capital markets, insurance, and pension sectors facilitate monetary policy transmission and economic stability.

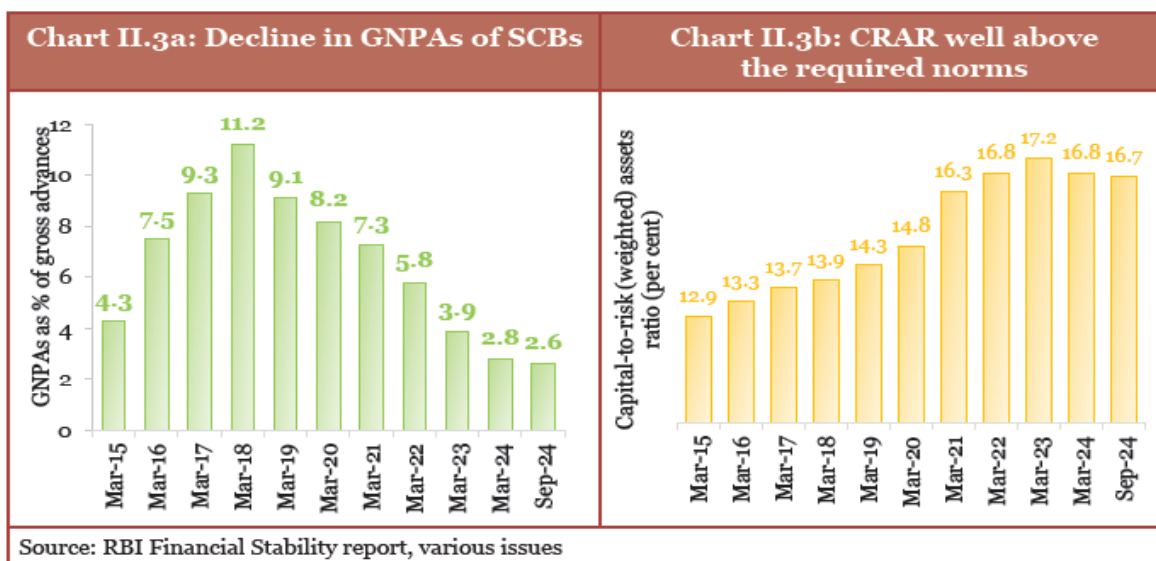
Performance of the Banking Sector and Credit Availability

- **Asset Quality:** **Gross Non-Performing Asset (GNPA)** ratio of scheduled commercial banks (SCBs) declined to **2.6%**, marking a **12-year low**. Net NPAs also reduced to 0.6%.
- **Capital Adequacy:** SCBs' Capital to **Risk-Weighted Assets Ratio (CRAR)** stood at 16.7%, indicating strong capital buffers.
- **Profitability:** SCBs' profit after tax (PAT) rose by 22.2% in H1 FY25.

Trends in Bank Credit

- **Deposit and Credit Growth:** Aggregate deposits grew 11.1% YoY (Nov 2024), while bank credit moderated to 11.8% YoY.
- **Sectoral Credit Growth:** MSME credit grew 13% YoY, outpacing large enterprises (6.1% YoY). Personal and services credit slowed due to policy changes.
- **Agriculture Credit:** Collateral-free loan limit raised from ₹1.6 lakh to ₹2 lakh to improve credit access for small farmers.

- **Credit/GDP Ratio:** Narrowed to (-)0.3% in Q1 FY25 from (-)10.3% in Q1 FY23, indicating sustainable credit growth.



Rural Financial Institutions

- **Regional Rural Banks (RRBs):** Number reduced from 133 (2006) to 43 (2023) post-mergers, improving financial health.
- **Recapitalisation:** ₹10,890 crore approved in FY22-23 to strengthen RRBs.
- **Performance:** GNPA of RRBs improved to 6.1% (FY24) from 7.3% (FY23). Credit-Deposit Ratio hit a 33-year high of 71.2%.

Development Financial Institutions (DFIs)

- **Key DFIs:** Infrastructure Development Finance Company (IDFC), India Infrastructure Finance Company Limited (IIFCL), and NaBFID play a critical role in funding infrastructure.
- **IIFCL:** Sanctioned ₹13.9 lakh crore for over 780 projects, including roads, energy, and ports.
- **NaBFID:** Sanctioned ₹1.3 lakh crore in loans as of Sep 2024, with a focus on infrastructure funding.

Development Financial Institutions (DFIs):

DFIs are specialized institutions that provide long-term financing and technical support for infrastructure and industrial development.

Rural Financial Institutions (RFIs): RFIs are financial entities, including RRBs and cooperative banks, that facilitate credit access and financial inclusion in rural areas.

Use of Artificial Intelligence by Banks

- **Applications:** AI/ML used in credit underwriting, risk management, fraud detection, and customer service.
- **Challenges:** Lack of transparency, accountability risks, cyber threats, and market manipulation concerns.
- **Regulation:** RBI working on an AI governance framework (FREE-AI) to ensure ethical AI adoption.

Efficacy of Insolvency Law

- The **Insolvency and Bankruptcy Code (IBC)** has improved debt resolution with **1,068 successful resolutions and a 33% recovery rate**.
- **Sector-Wide Impact:** IBC successfully resolved steel, real estate, and manufacturing sector cases.

- **Prevention of Default:** 28,818 CIRP applications withdrawn before admission, showing deterrence effect.

IBC and National Company Law Tribunals (NCLT)

- **Delays in Resolution:** Average time for CIRP completion extended to 582 days.
- **Judicial Backlog:** NCLT disposed of 98% of cases but 7,316 cases still pending.
- **Reforms Needed:** Faster admissions, better use of Information Utility (IU) records, and increased tribunal capacity.

Developments in Capital Markets

- **Stock Market Performance:** Investor base grew from 4.9 crore (FY20) to 13.2 crore (Dec 2024). India's share in global IPO listings rose to 30% in 2024.
- **Primary Market:** ₹11.1 lakh crore mobilized (Apr-Dec 2024), 5% higher than FY24. IPO count increased by 32.1% YoY.
- **Debt Market:** Corporate bond issuance reached ₹7.3 lakh crore. Private placements dominate at 99.1%.
- **Challenges:** India's corporate bond market remains underdeveloped (18% of GDP vs. Korea's 80%).

Secondary Market Performance

- **Volatility in FY25:** Driven by elections, global economic shifts, and policy changes.
- **Long-Term Growth:** Nifty 50 CAGR at 8.8% (USD-adjusted) over the past decade, outperforming China's Shanghai Composite (3.2%).
- **Retail Participation Surge:** Demat accounts rose to 18.5 crore. SIP investments crossed ₹10.9 lakh crore.

GIFT City Developments

- **GIFT City (Gujarat International Finance Tec-City)** is India's first International Financial Services Centre (IFSC), envisioned to compete with global financial hubs like Singapore, Dubai, and London.
- The **International Financial Services Centres Authority (IFSCA)** is the unified regulator for India's International Financial Services Centres (IFSCs), ensuring a globally competitive environment for financial institutions. It plays a key role in aligning India's financial sector with international standards, fostering investment, and driving India's Vision 2047.

Developments in the Insurance Sector

- **Growth:** Total premium grew 7.7% in FY24 to ₹11.2 lakh crore. Insurance penetration fell slightly to 3.7% of GDP.
- **Sector Outlook:** India projected to be the fastest-growing G20 insurance market (11.1% CAGR, 2024-28).
- **Challenges:** Low insurance penetration, rising longevity risks, and climate-related uncertainties.

Developments in the Pension Sector

- **Pension Coverage:** Subscribers grew to 783.4 lakh (Sep 2024), with APY comprising 80.3% of total enrollments.
- **Reforms:** Unified Pension Scheme (UPS) launched, guaranteeing 50% of the last drawn salary as pension.
- **Challenges:** India's pension assets at 17% of GDP, well below OECD average of 80%.

Regulators in the Financial Sector

- **Key Regulators:** RBI, SEBI, IRDAI, PFRDA, and IBBI govern different financial segments.
- **Regulatory Impact Assessment (RIA):** Suggested for improving regulatory effectiveness and transparency.
- **Proposed Reforms:** Independent evaluation of regulations, better public consultation processes.

Cybersecurity in India's Financial Sector

- **Rising Cyber Threats:** CERT-In handled 13.9 lakh cyber incidents in 2022.
- **Global Ranking:** India ranked Tier 1 in the Global Cybersecurity Index (2024) with a score of 98.49.
- **RBI Regulations:** Introduced cybersecurity norms, IT outsourcing oversight, and digital payment security guidelines.

RISKS PERTAINING TO INDIA'S FINANCIAL SECTOR

Financial Sector Transformation & Risks

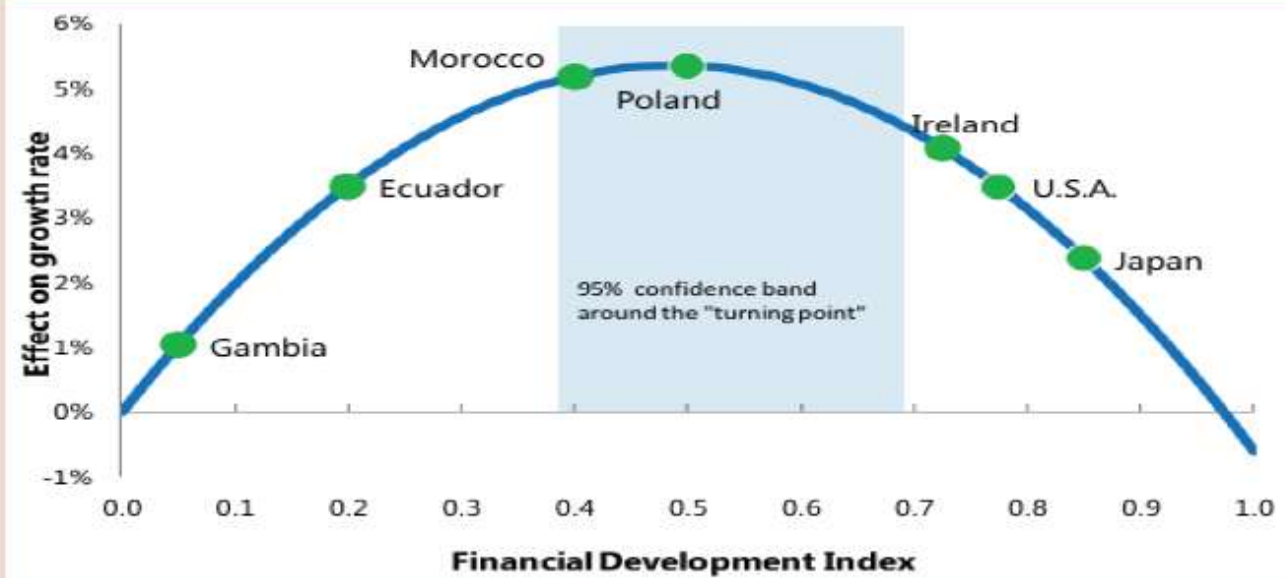
- Banks are no longer the sole credit providers; financial markets are playing a growing role.
- Innovations like **UPI, OCEN, T+1 settlement, and ULI** are improving credit access, especially for MSMEs.
- Financial markets must **align with economic growth** without outpacing capital needs to prevent instability.

Can the Growth of the Financial Sector Come at a Cost?

- Unregulated financial sector growth can **harm the real economy**, as seen in the **2008 global financial crisis**.
- Over-financialisation can **divert skilled labour, promote low-productivity projects, and create complex financial instruments with hidden risks**.

Optimal Financial Growth: The Bell Curve Relationship

- The relationship between **financial development and economic growth follows a bell curve**.
- **Early-stage financial growth** drives economic expansion, but **excessive financialisation** leads to diminishing returns and systemic risks.
- **Developed nations** like the USA and Japan have **crossed the peak**, where financial expansion does not contribute to economic growth.
- **Emerging economies** like India must balance financial development with regulatory quality to avoid over-financialisation.

Chart II.13: Financial development and growth – a bell-shaped relationship

Source – Rethinking financial deepening, IMF Staff Discussion Note, 2015

OUTLOOK

- **Banking Sector:** Strong financial performance, with narrowing gaps between **credit and deposit growth**.
- **Capital Markets:** Key drivers of **capital formation and wealth creation** due to **robust SIP inflows, formalisation, and digitisation**.
- **Insurance & Pension Sectors:** India's insurance sector is **set to be the fastest-growing among G20 nations (2024-2028)**, while pension growth will accelerate with economic development.

Emerging Trends in India's Financial Sector

- **Consumer Credit Boom:** Share of **consumer credit in bank lending** increased from **18.3% (FY14) to 32.4% (FY24)**.
- **Non-Bank Financing Rise:** Banks' **share in total credit** fell from **77% (FY11) to 58% (FY22)**; NBFCs and bond markets are growing.
- **Equity-Based Financing Growth:** India led the world in **IPO listings in FY24**, with retail investors under 30 driving equity market participation.

Guarding Against Financialisation Risks

- Excessive **financialisation** can lead to **debt dependence, rising inequality, and market-driven policy distortions**.
- India must **balance financial sector growth with economic development, financial literacy, and household savings**, ensuring incentives align with long-term national goals.

CHAPTER 3: EXTERNAL SECTOR: GETTING FDI RIGHT



CHAPTER AT A GLANCE

- India's external trade performance amid global uncertainties is explained in detail in this chapter, highlighting trends in exports, imports, and foreign investment.
- Increased global economic and political uncertainties that affect trade and investment are reflected in a number of risk indices, such as the Geopolitical Risk Index (GPR), Trade Policy Uncertainty Index (TPU), and Global Economic Policy Uncertainty (GEPU) Index.
- **India's external sector continued to display resilience** amidst global headwinds of economic and trade policy uncertainties. Total **exports (merchandise and services)** have registered a steady growth in the first nine months of FY25, **reaching USD 602.6 billion (6 percent)**, whereas the **total imports** during the same period reached **USD 682.2 billion, registering a growth of 6.9 percent**.
- On the capital front, foreign portfolio investments (FPIs) have shown a mixed trend in FY25 so far. **Gross foreign direct investment (FDI) inflows have shown signs of revival** in the first eight months of FY25, though net FDI inflows declined relative to April-November 2023 due to a rise in repatriation/disinvestment.
- **India's foreign exchange reserves stood at USD 640.3 billion** as of the end of December 2024, **sufficient to cover approximately 90 per cent of the country's external debt** of USD 711.8 billion as of September 2024, reflecting a strong buffer against external vulnerabilities.
- The chapter is broadly structured **under five sections**: Global Trade Dynamics, India's Trade Performance, Ease of Doing Business for Exporters, Balance of Payments Resilience, and Outlook on Future Risks and Opportunities.

GLOBAL TRADE DYNAMICS

- Global trade faces uncertainty due to **geopolitical conflicts, economic policy shifts, and climate events**.

Trade Disruptions and Supply Chain Shifts

- **Red Sea disruptions (Nov 2023)** increased **shipping costs and delivery times**, affecting **40% of Asia-Europe trade**.
- **Conflicts in the Hormuz Strait**, which channels **21 per cent of global petroleum liquid consumption**, have disrupted energy trade and increased prices.
- **Drought in the Panama Canal** reduced global maritime trade by **5%**.

Friend-shoring and Near-shoring Trends

- There has been a noticeable rise in the **political proximity of trade since late 2022**.
- This indicates a preference for bilateral trade between countries with **similar geopolitical stances, i.e., friend-shoring and nearshoring**.
- **Major shifts in trade dependencies**:
 - Russia and China reduced dependence on the EU and the US.
 - Russia and Vietnam increased dependence on China.

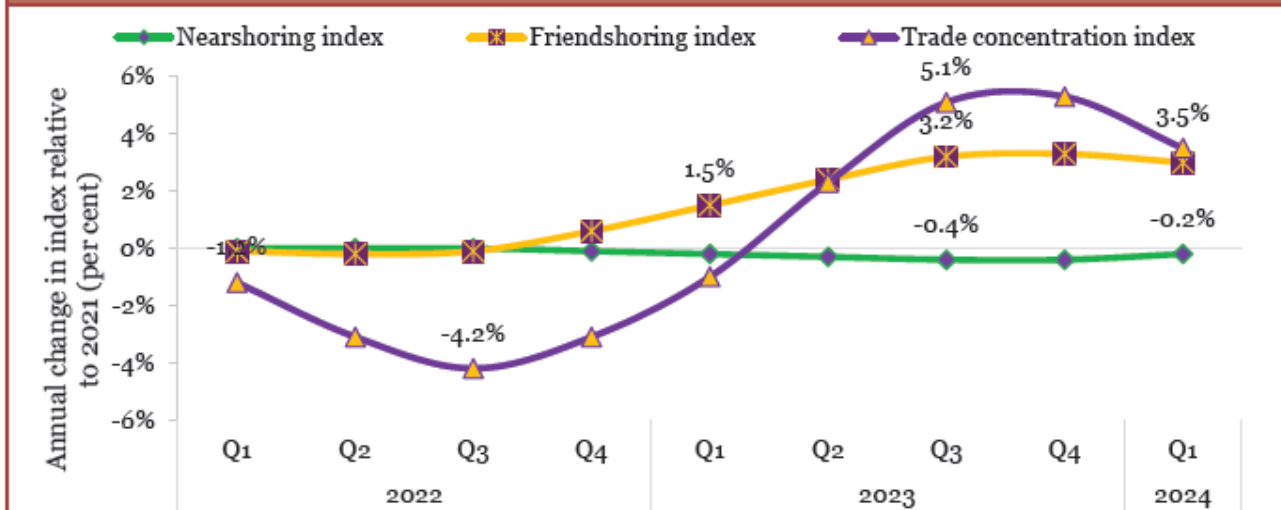
Friend-shoring: Relocating supply chains to **trusted allies** to enhance economic security and reduce dependence on geopolitical rivals.

- **Example:** The U.S. shifting semiconductor production from China to Taiwan and South Korea.

Near-shoring: Moving production **closer to home** to cut logistics costs and reduce trade disruptions.

- **Example:** U.S. companies relocating manufacturing from Asia to Mexico.

Chart III.2: Friend shoring and trade concentration trends continue to shape global trade



Source: UNCTAD estimates based on national statistics

Global Trade Performance in 2024

- According to the latest trade update by **UNCTAD**, the gradual **increase in global trade** that began in the **second half (H2) of 2023** has persisted into 2024.
- The **World Trade Organisation (WTO)** database shows a year-on-year (YoY) growth of **3.5 per cent and 3 per cent**, respectively, in global merchandise export and import indices in Q3 of 2024.
- **Services trade outpaced goods trade**, growing at **7.9% (exports)** and **6.7% (imports)**.
- **Developed economies led trade growth**, while **East Asia's trade growth slowed**.

Trade Policies: Tariffs and Non-Tariff Measures (NTMs)

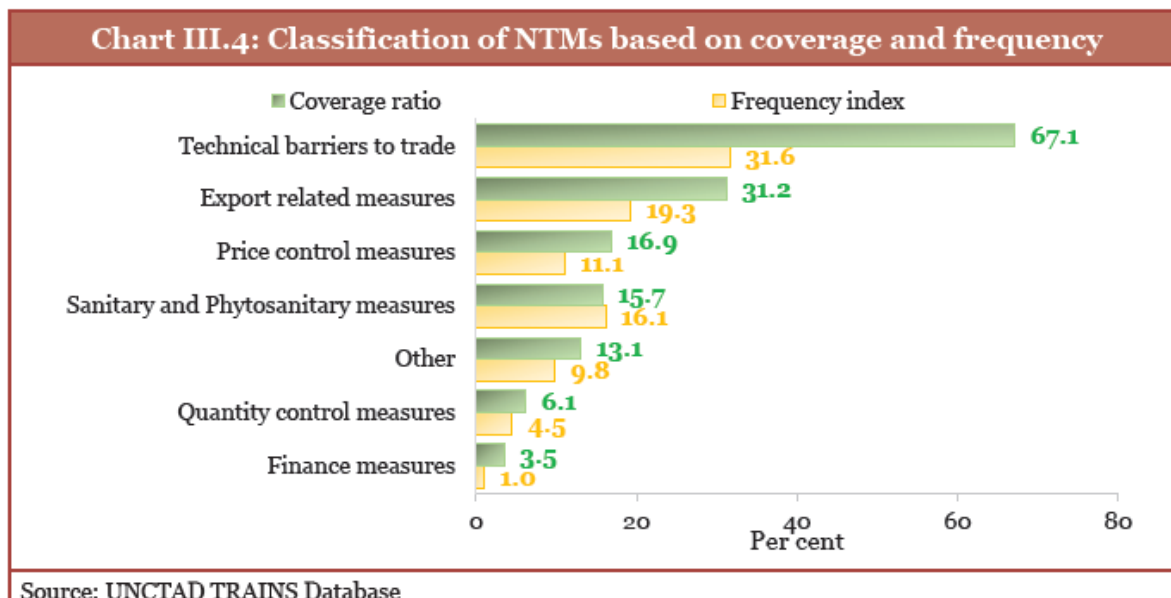
Declining Tariffs, Rising NTMs

- **Tariffs have declined globally**, with India's **average tariff rate falling from 48.9% (2000) to 17.3% (2024)**.
- A report by the United Nations Conference on Trade and Development (**UNCTAD**) indicates that **Non-Tariff Measures (NTMs)** impact over **30 per cent of products** and **nearly 70 per cent of global trade**.
- **Technical Barriers to Trade (TBT)** and **Export Restrictions** are the most common NTMs.

Non-Tariff Measures (NTMs): Trade regulations other than tariffs, such as quotas, licensing, and safety standards, impacting global trade.

Technical Barriers to Trade (TBT): Product regulations, standards, and testing requirements ensuring quality, safety, and environmental protection.

Export Restrictions: Government-imposed limits on exports, including bans, quotas, or licensing, often for economic or security reasons.



Environmental and Industrial Policy NTMs

- A report by UNCTAD shows evidence of increased **use of NTMs by countries to adapt and mitigate climate change**.
- As a result, **26.4 per cent of global trade**, valued at USD 6.5 trillion, is **covered by climate-change-related NTMs**.
- For instance, the **EU's Carbon Border Adjustment Mechanism (CBAM) and European Union Deforestation Regulation (EUDR)** pose challenges for Indian exports.
- **CBAM covers iron, steel, aluminum, cement, and fertilizers**, imposing carbon pricing on imports.
- **EUDR affects India's exports of coffee, paper, and leather by enforcing stricter deforestation controls**.

Both **Carbon Border Adjustment Mechanism (CBAM)** and **European Union Deforestation Regulation (EUDR)** are **Non-Tariff Measures (NTMs)** that regulate trade through compliance requirements rather than direct tariffs.

- **CBAM (a Technical Barrier to Trade - TBT)** applies carbon pricing to imports of iron, steel, aluminum, cement, and fertilizers, making them subject to the same environmental costs as EU-produced goods.
- **EUDR (a Sanitary and Phytosanitary - SPS measure and a TBT)** restricts imports of products like coffee, paper, and leather unless they meet strict deforestation-free and environmental compliance criteria.

TREND IN INDIA'S TRADE PERFORMANCE

- India's trade sector has demonstrated remarkable stability and growth, achieving milestones despite global economic headwinds.
- India's **total exports (merchandise+services)** have shown positive momentum in the first nine months of FY25, reaching **USD 602.6 billion**, witnessing a YoY growth of **6 per cent**.
- **Total imports** during April-December 2024 reached USD 682.2 billion, registering a YoY growth of **6.9 per cent**.
- Non-petroleum and non-gems & jewelry **exports grew 9.1%**.
- **Gold imports rose**, driven by **high international prices and festive demand**.

Textile Sector Performance

- **India is the 6th largest textile exporter**, contributing **2.3% to GDP and 12% to exports**.
- **Key challenges:**
 - **Fragmented production structure** increases costs.
 - **Stringent regulatory requirements** slow down exports.
 - **Competitors (China, Vietnam)** have vertically integrated industries with lower costs and better efficiency.
- **Opportunities:**
 - **Global demand shifting to Man-Made Fibers (MMF)** (77% of global fiber consumption).
 - **PLI scheme (₹10,683 crore) and Mega Textile Parks (PM-MITRA) to boost competitiveness.**

Export Diversification

- India expanded into **20+ new markets in FY25**, especially in **nuclear reactors, optical items, medical instruments, and machinery**.
- **Services exports (Apr-Dec 2024) grew 11.6%**, reaching USD 281 billion, with **strong IT and business service demand**.

E-Commerce Export Potential

- **India's e-commerce exports: USD 4-5 billion in FY23, projected to reach USD 200-300 billion by 2030.**
- **Challenges:**
 - High compliance costs.
 - Limited customs codes for e-commerce exports.
 - Foreign exchange rules restricting transaction timelines.
- **Government initiatives:**
 - E-commerce export hubs.
 - Niryat Bandhu Scheme, GST benefits, and Market Access Initiative (MAI).

PLI Scheme for Textiles: A ₹10,683 crore incentive scheme to promote domestic manufacturing and boost competitiveness in the textile sector.

PM-MITRA (Mega Integrated Textile Region and Apparel Parks): A government initiative to develop world-class textile infrastructure with integrated manufacturing clusters.

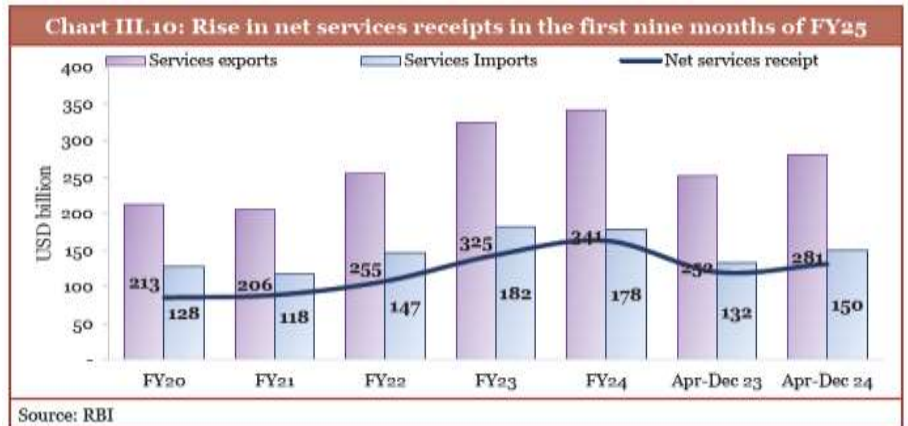
E-Commerce Export Hubs: Government-backed centers to support MSMEs and exporters with storage, packaging, and logistics for cross-border e-commerce.

Niryat Bandhu Scheme: A capacity-building initiative providing mentorship and training for new and small exporters.

Market Access Initiative (MAI): A scheme that provides financial assistance for export promotion activities, including marketing, trade fairs, and brand building.

Services trade remained resilient amidst global challenges

- **Services sector exports** have demonstrated resilience, while merchandise exports have witnessed moderation in recent months. They grew at 11.6 per cent in the first nine months of FY25 amidst unfavourable geopolitical conditions.
- The rise in services exports contributed to an increase in **net services receipts** from **USD 120.1 billion in the first nine months of FY24 to USD 131.3 billion** during the corresponding period of FY25



EASE OF DOING BUSINESS INITIATIVES FOR EXPORTERS

- **Enhancing Logistics Efficiency** – Investments in logistics hubs, infrastructure, and policy reforms under the **National Logistics Policy** aim to reduce costs and improve supply chain efficiency, making exports more competitive.
- **Paperless e-BRC System** – Streamlines export transactions, cutting costs for 2.5 million e-BRCs annually by over ₹125 crore, benefiting small exporters, especially in e-commerce.

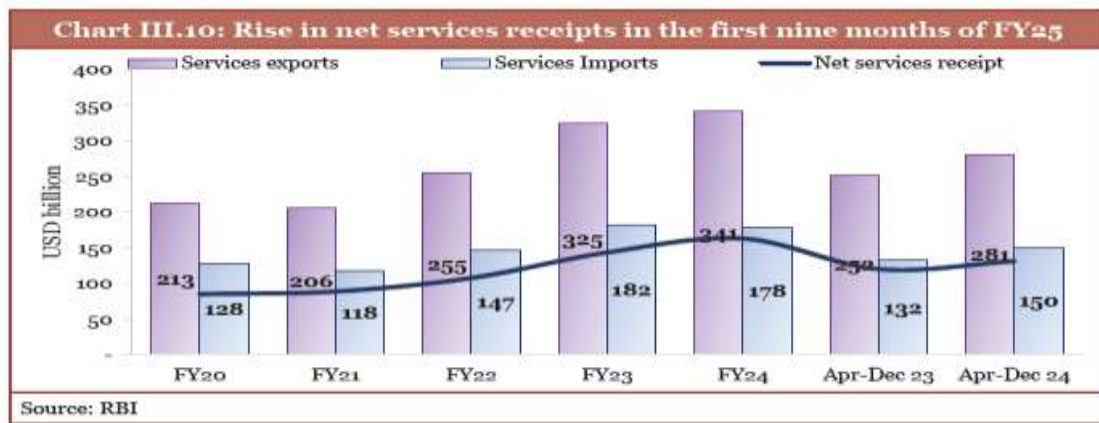
e-BRC System – Electronic Bank Realisation Certificate, a digital system that records foreign exchange realization for exports, simplifying compliance and refund processes.

- **Directorate General of Foreign Trade (DGFT) Trade Connect e-Platform** – A single-window digital platform developed in collaboration with the Ministry of MSME, EXIM Bank, Department of Financial Services, and Ministry of External Affairs to provide real-time trade-related information.
- **DGFT Trade Facilitation Mobile App** – Offers FTP updates, import/export policies, trade statistics, and virtual assistance. It features auto-generation of IEC (Importer Exporter Code), which is validated against CBDT, MCA, and PFMS systems, ensuring seamless and instant approvals without delays.

BALANCE OF PAYMENTS: RESILIENCE AMID CHALLENGES

Current Account Deficit (CAD)

- India's Current Account Deficit (CAD) **moderated to 1.2% of GDP** (USD 75.3 billion trade deficit) in Q2 FY25, aided by **rising services trade and remittances**.
- Remittance inflows increased from **USD 28.1 billion (Q2 FY24) to USD 31.9 billion (Q2 FY25)**.



Foreign Direct Investment (FDI)

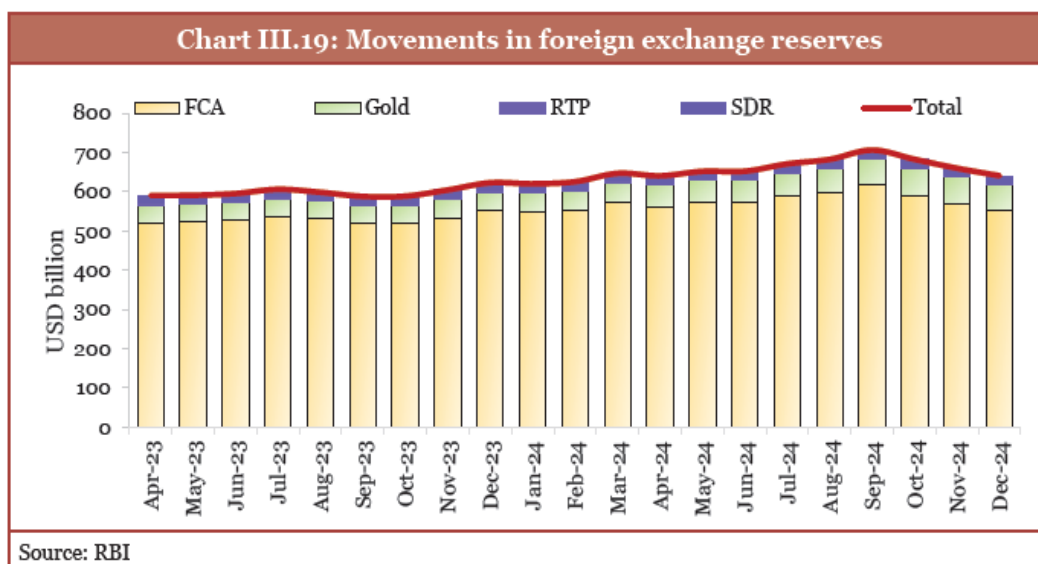
- Gross FDI inflows (Apr-Nov 2024): **USD 55.6 billion (+17.9%)**.
- Net FDI declined** due to high repatriation (USD 39.6 billion).
- Major sectors receiving FDI:**
 - Services (19.1%), IT (14.1%), Trading (9.1%), Non-conventional Energy (7%).

Foreign Portfolio Investments (FPIs)

- Net FPI inflows (Apr-Dec 2024): USD 10.6 billion (vs. USD 31.7 billion in FY24).**

Foreign Exchange Reserves and Exchange Rate

- Forex reserves: USD 640.3 billion** (covers **90% of external debt**). India's foreign exchange reserves comprise foreign currency assets (FCA), gold, special drawing rights (SDRs) and reserve tranche position (RTP) in the IMF.
- Rupee depreciation (Apr-Dec 2024): -2.9%.**
- Real Effective Exchange Rate (REER) appreciated**, indicating strong purchasing power.



External Debt

- Total external debt: USD 711.8 billion (Sep 2024).**
- Debt-to-GDP ratio: 19.4%.**
- USD dominates India's external debt (53.4%),** followed by INR (31.2%).

OUTLOOK

- **India** must navigate increasing **global trade protectionism with a strategic roadmap**.
- **Enhancing trade facilitation, reducing transaction costs, and improving logistics efficiency** are key to boosting exports.
- **FDI and portfolio inflows** remain crucial for financing the CAD, requiring **tax certainty and investment-friendly policies**.
- **Deregulation and 'Ease of Doing Business' reforms** can improve investment efficiency.

India's **external sector remains resilient**, but **proactive policy adjustments** are essential to **sustain long-term growth in trade, FDI, and capital inflows**.



CHAPTER 4: PRICES AND INFLATION : UNDERSTANDING THE DYNAMICS



CHAPTER AT A GLANCE

- Understanding the trends in inflation is essential in gauging the health of any economy. In this chapter, ***inflation trends in India are analysed***, along with domestic and international inflationary pressures and their effects on the economy.
- ***Global inflation peaked at 8.7 percent in 2022***, driven by supply chain disruptions and geopolitical tensions; it has declined since then, aided by policy measures, to ***5.7 percent in 2024***.
- ***India saw a similar trend***, with retail inflation moderating from ***5.4 percent in FY24 to 4.9 percent in FY25 (April-December)*** despite challenging food price dynamics. In recent years, ***food inflation*** has been a major contributor to headline inflation.
- ***Core inflation hit its lowest point in a decade***, but a handful of food items—mainly vegetables and pulses—drove inflation up. Though they ***make up just 8.42% of the CPI basket***, their ***contribution to overall inflation soared to 32.3%***.
- To combat food inflation, the government intervened by easing controls on imports, subsidising sales, creating buffer stocks, and setting stock limits. In the future, it is anticipated that inflation will approach target levels and commodity prices will cool. The RBI projects 4.8% in FY25 and 4.2% in FY26, provided no major shocks occur.
- The chapter is divided into Global Inflation Trends, Domestic Inflation and Way forward & Outlook.

GLOBAL INFLATION

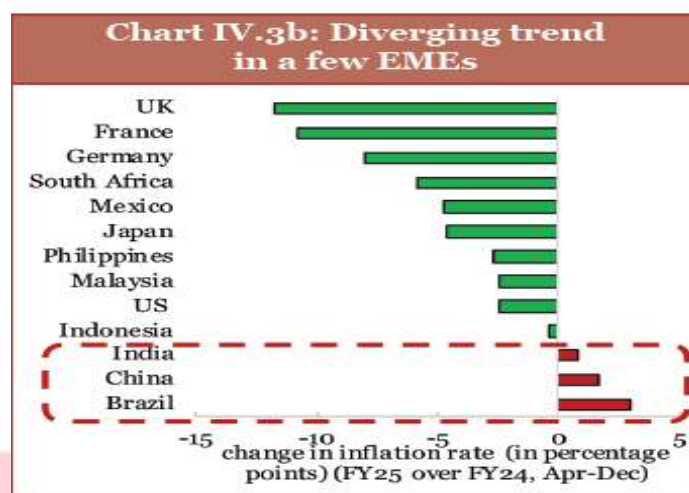
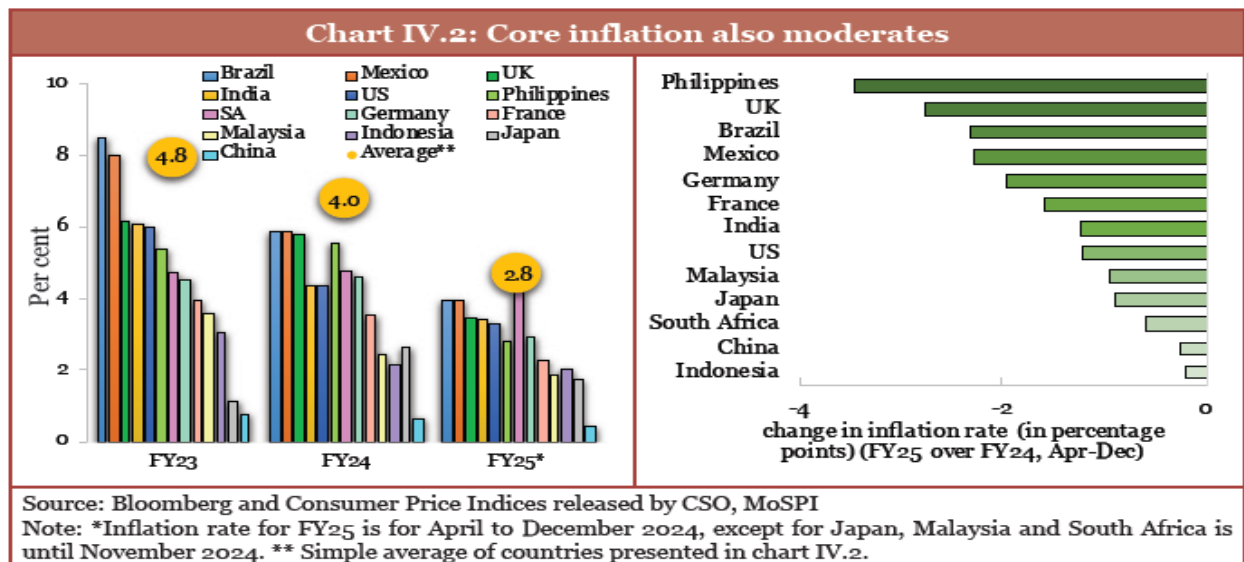
- Despite the sharp and synchronised tightening of monetary policy across countries, the global economy has demonstrated an unusual level of **resilience in output growth throughout the disinflationary process**. This resilience is reflected in the **steady decline of the headline inflation rate** in most countries during FY24 and the current year.
- **Central banks' rate hikes and policies** have significantly reduced inflation.

Decline in core inflation

- In alignment with the downward trend in headline inflation, **core inflation**, which excludes volatile food and energy prices has also **decreased in most countries**.
- The decline is mainly due to **lower commodity prices and effective policies**.

Global Food Inflation Eases, But Emerging Markets (EMEs) Show Divergence

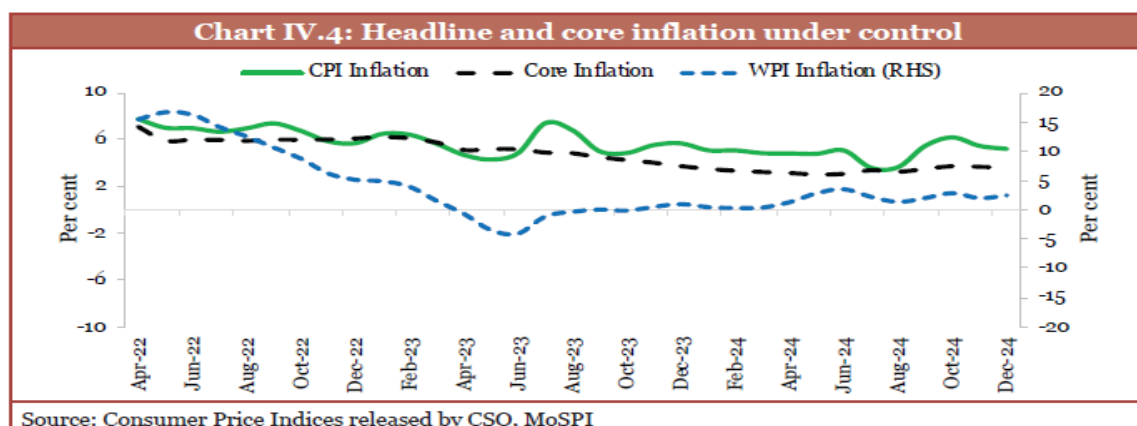
- Global **food inflation is on a downward trend**, aligning with the patterns observed in both headline and core inflation.
- However, some EMEs, including **India, Brazil, and China**, continue to **face food price pressures** despite the global decline.



DOMESTIC INFLATION

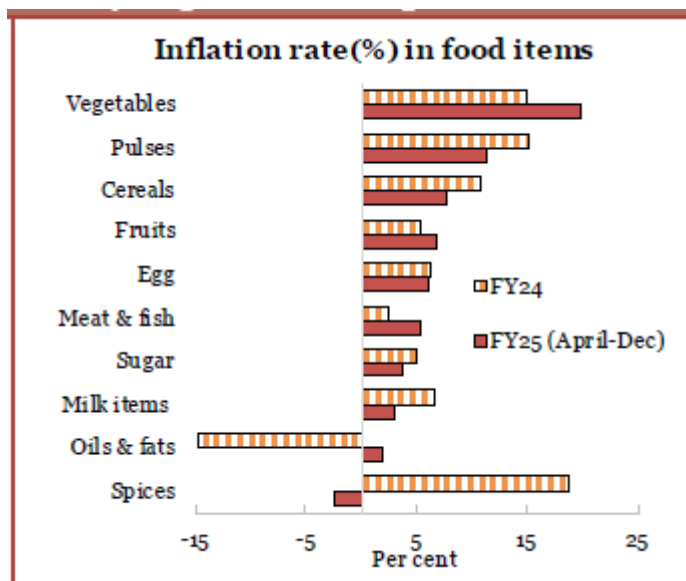
Softening core inflation cools headline inflation

- India's retail inflation moderated from 5.4% in FY24 to 4.9% in FY25 (April-December), driven by a **decline in core inflation** and lower fuel prices.
- Core inflation reached its **lowest level in a decade**, but food inflation remained elevated due to **supply disruptions and weather conditions**.



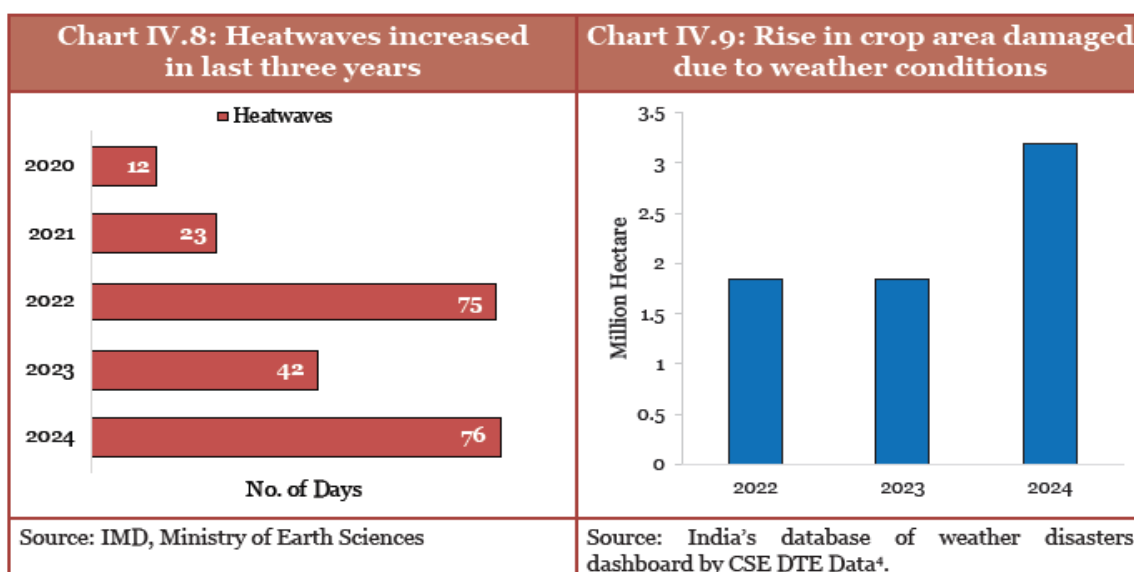
Food Inflation is majorly driven by very few food items

- Over the past two years, **India's food inflation rate has remained firm**, diverging from global trends of stable or declining food inflation.
- This can be attributed to factors such as supply chain disruptions **exacerbated by extreme weather events and reduced harvest** of some food items.
- Food inflation was **mainly driven by vegetables and pulses**.
- Vegetables and pulses** together holds a total **weightage of 8.42 per cent** in CPI basket. However, their **contribution to the overall inflation stood at 32.3 per cent** in FY25 (April to December).
- When these items are excluded, the average food inflation rate for FY25 (April-December) was 4.3 per cent, which is 4.1 per cent lower than the overall food inflation.
- Uneven monsoon-induced supply disruptions** in certain regions caused price pressures, mainly in **tomatoes and onions**, contributing to higher inflation rates in vegetables and overall food inflation.



Extreme weather conditions impact vegetable production and prices

- Vegetables are more **susceptible to uneven weather** compared to food grains, as highlighted by various studies. Extreme weather events such as **cyclones, heavy rains, floods, thunderstorms, hailstorms, and droughts** impact vegetable prices.
- The data from the India Meteorological Department (IMD) indicates a notable **increase in the frequency** of extreme weather conditions, particularly **heatwaves**. On an average, during 2022-2024, India experienced heatwaves on **18 per cent of days** compared to **5 per cent of days** in 2020 and 2021.



- Data published by the Centre for Science and Environment (CSE) and Down to Earth (DTE) finds that the **total crop area damaged in 2024 was higher** compared to the last two years due to extreme weather events.

Trends in onion and tomato production and prices

- Onion inflation remained high due to **reduced production in 2022-23 and 2023-24**, affecting supply.
- Tomatoes saw intermittent price spikes due to **short crop cycles, perishability, and concentrated production regions**.
- **Seasonal fluctuations in onion and tomato production** contributed to inflationary pressures.

Consumption and Seasonality in Production of Onion and Tomato

- **Household consumption** of onions and tomatoes is **lower than production**, but seasonal shortages and post-harvest losses drive price volatility.
- **Imports are not a viable option** due to limited global production (India and China produce half of the world's onions).
- **Seasonal price fluctuations** are common:
 - **Tomato prices peak from July to September** (monsoon season).
 - **Onion prices rise from October to December** (lean production season).

Trends in Production and Inflation Rate of Tur

- Tur dal production **declined by 13.6% in 2022-23 and 10.8% in 2023-24**, driving price increases. A strong negative correlation (-0.8) exists between production and inflation, meaning lower production in one year leads to higher inflation the next year. Despite import efforts, price pressures remain due to supply constraints.

Box IV.1: Administrative measures to control food inflation

Food items	Measures undertaken
Cereals	<ul style="list-style-type: none"> • Stock limits on wheat from 24 June 2024 to 31 March 2025. • Open Market Sale Scheme: Offloaded wheat and rice from the central pool • Sale of wheat flour and rice under Bharat brand
Pulses	<ul style="list-style-type: none"> • Sale of chana dal, moong dal and masur dal under Bharat brand • Stock limits on tur and desi chana from 21 June 2024 to 30 September 2024 • Allowed duty-free import of desi chana, tur, urad and masur until 31 March 2025. • Allowed duty free import of yellow peas until 20 February 2025.
Vegetables	<ul style="list-style-type: none"> • Buffer Stock of Onion: A total of 4.7 lakh MT of rabi onion has been procured under Price Stabilisation Fund. • 20 per cent export duty on onion since 13 September 2024. • Subsidised sale of onion at ₹35 per kg from September -December 2024. • Subsidised sale of Tomato at ₹65 per kg in October 2024

Source: Various PIB releases

Activate Win
Go to Settings to

OUTLOOK AND WAY FORWARD

Inflation Projections

- **RBI and IMF project India's inflation to decline further in FY26.**
 - RBI's inflation forecast for FY25: **4.8%**, for FY26: **4.2%**.
 - IMF's inflation forecast for FY25: **4.4%**, for FY26: **4.1%**.
- **Global commodity prices** are expected to **decline by 5.1% in 2025** and **1.7% in 2026**, benefiting India's inflation outlook.

Impact of Agricultural Production on Inflation

- **A normal monsoon** in 2024 has **improved water availability**, aiding rabi crop production.
- **Kharif food grain production is expected to rise by 5.7%**, with increases in **rice (5.9%) and tur (2.5%)**, which could help ease food inflation.
- International vegetable oil prices remain an inflation risk.

Key Policy Recommendations for Long-Term Price Stability

- **Enhance production of pulses and oilseeds** through **climate-resilient crop varieties** and better yields.
- **Expand pulses cultivation in rice-fallow regions** to reduce import dependence.
- Improve **farmer training and extension services** to increase productivity and resilience.
- **Develop robust data systems** for monitoring **prices, stocks, and processing facilities** to improve supply chain efficiency.
- **Strengthen price monitoring from farm to consumer** by linking high-frequency data from different agencies.

India's long-term inflation management will depend on **strengthening supply chains, enhancing agricultural productivity, and improving real-time data systems** to anticipate and respond to market fluctuations effectively.

CHAPTER 5: MEDIUM TERM OUTLOOK : DEREGULATION DRIVES GROWTH



CHAPTER AT A GLANCE

- In light of **global economic realignments and the retreat of globalisation**, the chapter examines India's medium-term growth prospects.
- Worldwide, there is a **backsliding of economic integration with geo-economic fragmentation replacing globalisation**.
- The medium-term growth outlook for India is examined in the chapter with a focus on the need for economic freedom and deregulation to maintain **8% annual growth and achieve Viksit Bharat by 2047**.
- **China's rise as a manufacturing giant** has reshaped global industry, influencing how other nations, including India, plan their own manufacturing growth. Its **control over key minerals, materials, machinery, and equipment** needed for the energy transition adds another layer of complexity to India's economic future.

INDIA'S MEDIUM-TERM OUTLOOK

- To realise its economic aspirations of becoming **Viksit Bharat by 2047**, India needs to achieve a **growth rate of around 8 per cent** at constant prices, on average, for about a decade or two.
- The IMF **World Economic Outlook (WEO)** projects India to become a **USD 5 trillion economy by FY28** and reach a size of USD 6.307 trillion by FY30.
- This translates into an annual **nominal growth rate of nearly 10.2 per cent** in USD terms for FY25 to FY30.
- To put this in context, in the thirty years between FY94 and FY24, India's dollar gross domestic product (GDP) grew at a compounded annual rate of **8.9 per cent**.
- **Current account deficit (CAD)** is expected to **rise to 2.2% of GDP by FY30**, but this remains manageable given India's strong fundamentals.



Geo-Economic Fragmentation

- The world is experiencing a **major shift from hyper-globalization to geo-economic fragmentation (GEF)**, marked by **rising trade barriers, investment restrictions, and strategic economic decoupling**. Unlike past cycles of economic protectionism, **this fragmentation is more severe, complex, and policy-driven**, reflecting the realignment of global economic power.

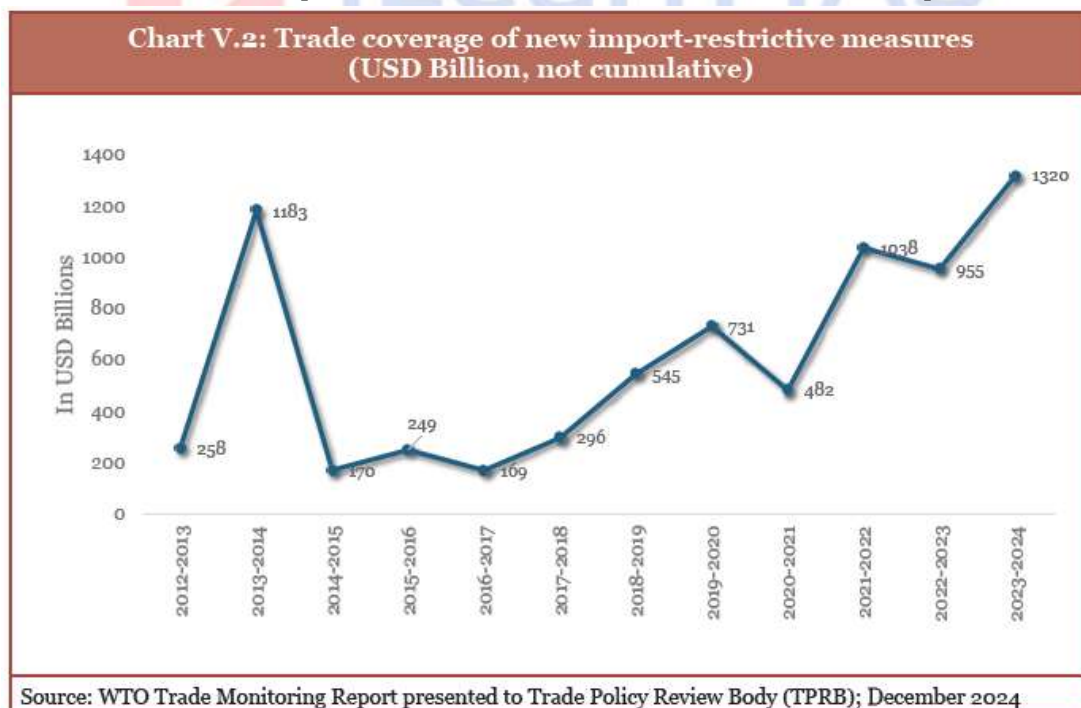
A Historical Parallel: Keynes and the Global Economic Order

In his seminal work, *The Economic Consequences of the Peace* (1919), **John Maynard Keynes described the remarkable economic integration of early 20th-century London**, where a citizen could, from the comfort of their home, order products from across the world and invest in businesses anywhere with minimal restrictions. This period of global economic openness was abruptly disrupted by **the rise of militarism, imperialism, monopolies, and protectionist policies**, leading to economic stagnation and political turmoil.

Today, **a similar trend is unfolding**. Over the past few decades, the forces of **hyper-globalization** have shaped the world economy, **tripling its size and lifting 1.3 billion people out of poverty**. However, the global economic system is now **reversing toward fragmentation**, as geopolitical tensions, protectionist trade policies, and economic nationalism disrupt long-standing global supply chains.

From Integration to Fragmentation: The Global Trade Shift

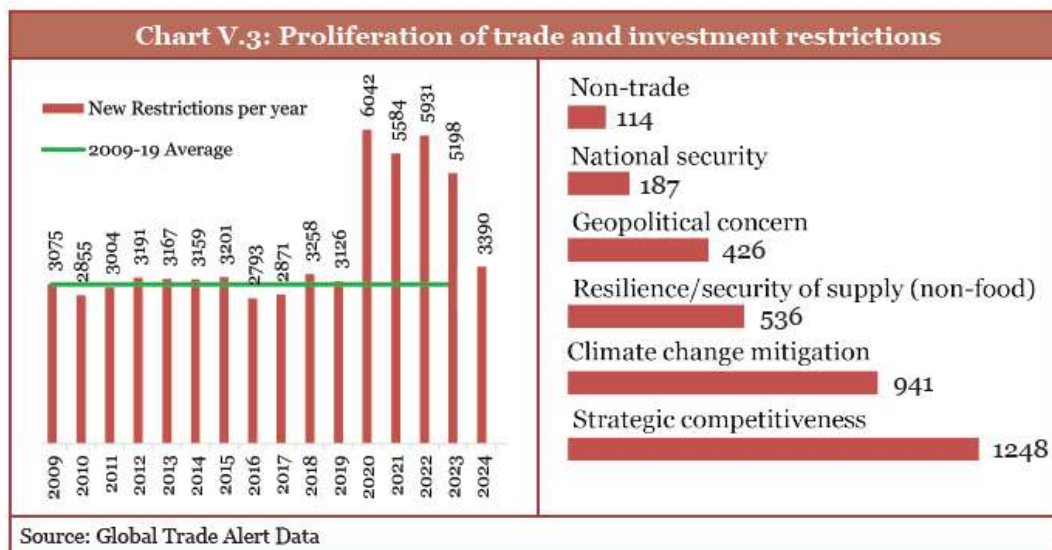
- In **1980, global trade accounted for 39% of world GDP**; by **2012, this peaked at 60%**, reflecting deep international economic integration.
- Since 2012, however, **protectionism and strategic economic realignments have led to stagnation and reversal**.
- Between **2023 and 2024, 169 new trade restrictions** were imposed globally, covering trade worth **USD 887.7 billion**—a massive jump from **USD 337.1 billion in the previous year**.
- One way to visualise trade restrictiveness is to quantify the **trade coverage of new import-restrictive measures**, apart from the number of restrictive measures presented earlier.



- IMF estimates **GEF could shrink global GDP by up to 7%**, with technological decoupling raising losses to 8-12% in certain economies.
- Global capital is now **shifting towards resilient economies, and India must capitalize on this by focusing on domestic growth drivers**.

THE ELEPHANT AND THE DRAGON IN THE ROOM

- Fundamental shifts in global economic engagement are underway with the **proliferation of trade and investment restrictions**. Between 2020 and 2024, over **24000 new restrictions** related to trade and investments have gone into place globally.

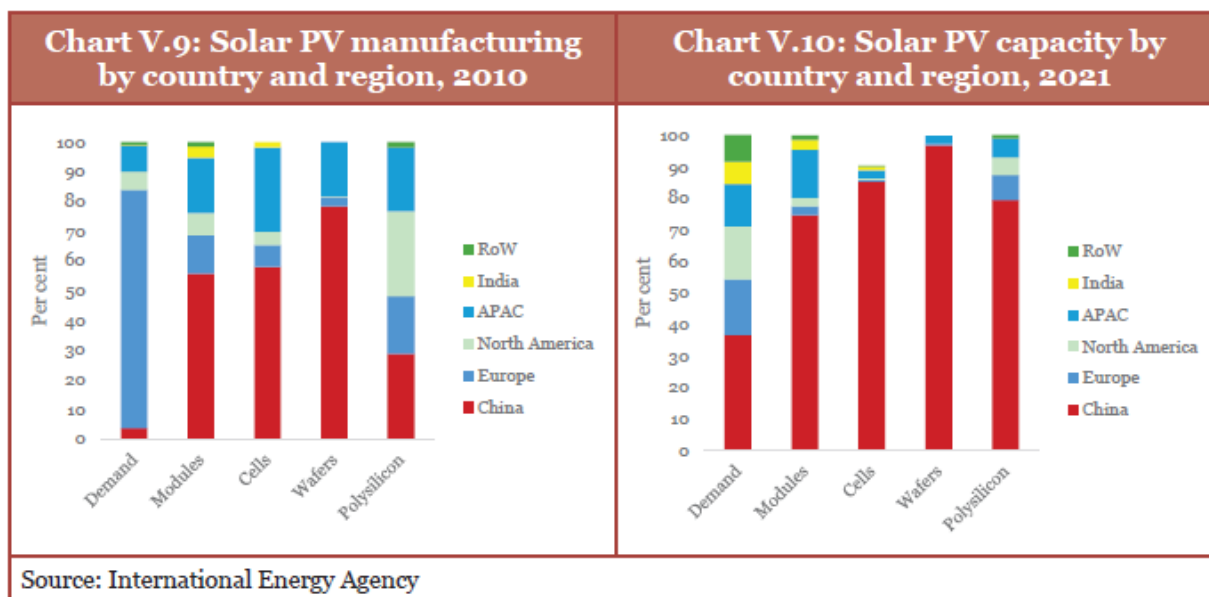


- Adding to this shift is China's prominent role in global supply chains, which continues to reshape the economic landscape.
- China's dominance in global manufacturing is reshaping economic order, **controlling 45% of global industrial production by 2030**.
- China's dominance is most visible in:
 - **Electric vehicle (EV) manufacturing**, where it has disrupted traditional auto giants.
 - **Control over global supply chains of critical minerals** such as **copper, lithium, nickel, cobalt, and graphite**, essential for high-tech industries.
 - **Monopoly over clean energy equipment**, such as solar panels, wind turbines, and battery storage.
- China's strategic control over these industries is **creating long-term dependencies**, affecting **global energy transitions and India's push for self-sufficiency**.

CLIMATE TRANSITION, CHINA AND GEOPOLITICS

- Climate change poses one of the most **significant economic risks of the 21st century**.
- Studies show that a **1°C rise in global temperature can reduce global GDP by up to 12%**, with extreme weather events, rising sea levels, and disruptions to agriculture and infrastructure compounding these economic losses.
- China leads global renewable energy manufacturing, dominating **solar, wind, EVs, and battery technologies**, creating **supply chain risks** for nations like India.
 - **Solar Industry**: China **controls 80%** of the global **solar panel supply chain**, including **polysilicon, ingots, wafers, cells, and modules**, lowering costs but increasing dependency.
 - **Wind Power**: **60% of global wind turbine installations** come from Chinese firms, solidifying its role in **wind energy infrastructure**.
 - **Battery Technology & EVs**: China **commands 80%** of the world's **battery manufacturing**, supplying most **lithium-ion batteries** for EVs and energy storage.

- **Critical Minerals:** China processes **65% of nickel, 68% of cobalt, 60% of lithium, and 70% of rare earth minerals**, crucial for EVs and clean energy.



- India's renewable energy push is strong, but **it still depends on China for lithium-ion batteries (75% imports) and lacks key domestic production capacity** for solar PV components like polysilicon, ingots, and wafers.

IMPLICATIONS FOR INDIA'S GROWTH PROSPECTS

- To **sustain 8% growth**, India must:
 - **Increase investment to 35% of GDP** (from the current 31%).
 - **Expand manufacturing, AI, robotics, and biotechnology.**
 - **Create 78.5 lakh non-farm jobs annually until 2030.**
 - **Achieve 100% literacy and develop high-quality infrastructure.**
- **MSMEs remain burdened by regulatory compliance**, limiting their potential for job creation and innovation.
- **Firms stay small to avoid regulatory hurdles**, impacting labor productivity and economic growth.
- The government has **begun easing compliance burdens** through:
 - **PAN 2.0:** A digital identity framework reducing paperwork for businesses.
 - **Jan Vishwas Act (2023):** Decriminalized **183 provisions** across **42 central laws**, reducing legal uncertainties for businesses.
 - **Jan Vishwas 2.0:** Proposed expansion of decriminalization efforts to modernize India's regulatory framework.
- However, given **India's size and evolving economy**, regulations must **continuously adapt** to remain relevant.

Structural Reforms Driving Growth

- Over the past decade, **major reforms** have strengthened India's economic foundations:
 - **Goods and Services Tax (GST):** Unified indirect taxation, simplifying compliance and integrating markets.
 - **Insolvency and Bankruptcy Code (IBC):** Streamlined corporate restructuring and improved financial health of firms.

- **Real Estate (Regulation and Development) Act (RERA):** Boosted transparency and efficiency in real estate.
- **India Stack (UID, UPI, DBT):** Enhanced digital financial inclusion and streamlined government service delivery.
- These reforms **improved ease of doing business, accelerated formalization, and enhanced the buoyancy of tax revenues.**

REINVIGORATING THE INTERNAL ENGINES OF GROWTH - ENHANCING ECONOMIC FREEDOM THROUGH DEREGULATION

- The **global economic environment** is shifting, requiring India to **boost domestic economic levers** and **reduce reliance on external demand.**
- Investment must focus on **efficiency rather than just quantity**, ensuring **faster returns and better output.**
- **Systematic deregulation** is essential to enhance economic freedom and **remove obstacles** for businesses.

Deregulation and Economic Freedom: A Catalyst for Growth

- MSMEs face high compliance costs that **hinder scaling**, unlike larger firms with better regulatory navigation. Over the past decade, India has simplified taxation, labour laws, and business regulations, including the **Forest Conservation (Amendment) Act, 2023** to ease land access.
- States are actively deregulating:
 - **Haryana, Tamil Nadu:** Amended building rules to ease approvals.
 - **Punjab:** Liberalized labour, fire, and building norms.
 - **Andhra Pradesh, Karnataka, Haryana:** Allowed night shifts for women in IT.

Structural Barriers to Growth and the Need for Further Deregulation

- **Factory Laws:** Encourage fragmentation to avoid strict regulations.
- **Labour Laws:** Overtime restrictions push workers into informal jobs.
- **Land & Zoning:** Costly conversion and setback rules raise expenses.

Systematic Deregulation – A Three-Step Framework

- 1. Identifying Areas for Deregulation:**
 - States should **relax licensing norms, compliance costs, and regulatory thresholds** in key areas like land, labour, and environmental laws (**Table V.1**).
- 2. Comparing Regulations Across States and Globally**
 - India: Some states eased **night shifts, hotel construction, and factory norms.**
 - **Global:** **Japan** promotes mixed-use spaces, **South Korea** allows flexible work hours, **U.S.** simplifies real estate laws.
- 3. Assessing the Costs of Regulation**
 - Regulations should be **quantified before enforcement.**
 - **Example:** Factories in some states **lose 69% of land** due to setback rules, raising costs and reducing jobs.

Table V.1: List of areas of regulation and provisions affecting businesses

Area	Examples of regulations
Legal Status and admin	Municipal laws, citizen charters, accountability in public service delivery
Land	Land revenue, land reform, town and country planning, land ceiling
Building and Construction	Town and country planning, building bye-laws, fire safety laws
Labour	Rules under Union Codes, factories, contract labour, shops laws
Utilities	Water, electricity, building bye-laws, municipal laws
Transport	Motor vehicles laws, motor transport workers laws, carriage of goods
Logistics	Warehousing and logistics policies, building bye-laws
Buying and Selling	Agricultural Produce and Livestock Market Committee laws
Environment	Laws for prevention and control of pollution of water, air
Sector Specific	Excise, food safety, legal metrology

RENEWED PARADIGM FOR MEDIUM-TERM GROWTH

States as the Key Drivers of Deregulation

- States must lead reforms in **land, labour, and building laws**, using **data-driven assessments** of compliance burdens.

International Lessons on Deregulation

- **U.S.:** Regulatory cost assessment.
- **UK:** "One-in, two-out" rule for regulations.
- **New Zealand:** Ongoing legal simplifications.
- **Argentina:** Deregulation to boost business efficiency.

Strategic Importance of Deregulation for India

- Deregulation is key to unlocking MSME growth and maximizing the benefits of infrastructure and policy reforms. The **multiple benefits** of deregulation include:
 - **Strengthening Trust and Compliance** – Deregulation fosters confidence in governance, improves compliance, and transforms the relationship between businesses and regulators into a partnership.
 - **Progressive Simplification** – Removing some regulations makes further simplifications easier, like peeling an onion, revealing new opportunities for streamlining.
 - **Triggering the Butterfly Effect** – The butterfly effect **means that small actions can have large consequences**. Small deregulatory actions can create significant economic waves, driving entrepreneurship, investment, and innovation.

CHAPTER 6: INVESTMENT AND INFRASTRUCTURE: KEEPING IT GOING



CHAPTER AT A GLANCE

- *Infrastructure includes physical, digital and social which have been the central focus of Government in the last 5 years. This explains the increase in public spending on infrastructure, creation of institutions to de-bottleneck approvals*
- *Towards the goal of VikshiBharat@2047, India needs to focus on increasing private participation, boost capex and maintain efficiency in investment.'*

OVERVIEW

- The capital expenditure by the union government on major infrastructure sectors⁴ has been increased at a trend rate of 38.8% from FY20 to FY24.
- The National Infrastructure Pipeline (NIP) was launched with a **forward-looking approach**, targeting a projected infrastructure investment of around ₹111 lakh crore from FY20 to FY25.
- **The NIP serves as a centralised platform** for hosting projects of states, union territories and central ministries to facilitate their monitoring and review.
- To boost private investment in brownfield assets, the **National Monetisation Pipeline (NMP)** was launched in August 2021.
- While this is typical of a dynamic, developing economy, India's goal of Viksit Bharat necessitates the progressive filling of this gap with innovative modes of financing and greater private participation.

PHYSICAL CONNECTIVITY

Railways

- **Net zero carbon emission:** Target of generating **30 GW of renewable energy by 2029-30**.
- **Railway corridors:** 434 projects valued at ₹11.17 lakh crore have been identified under three railway corridors, mapped on the **PM GatiShakti portal**.
- **Amrit Bharat Station Scheme:** 1337 stations have been identified for redevelopment.
- **Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs):** providing affordable medications and healthcare services at railway stations.
- **One Station One Product Scheme:** featuring outlets that benefit local artisans by providing sales opportunities for their products.
- Elimination of mechanical signalling and replacing it with Electrical/Electronic Interlocking systems. In FY25, 9 zonal railways are now free from mechanical signalling.
- **Kavach:** This indigenously developed Automated Train Protection system provides real-time monitoring to avoid train collisions.
- **Gati Shakti Multi-model Cargo Terminal (GCT):** 91 GCT commissioned and 234 locations approved.

- **Mumbai-Ahmedabad High-Speed Rail Project:** Sanctioned in December 2015, this 508 km project, supported by Japan, has a revised cost of ₹1.08 lakh crore. As of October 2024, it has achieved 47.17% physical progress with an expenditure of ₹67,486 crore.
- **Dedicated Freight Corridors (DFCs):** As of November 2024, 2,741 km (96.4%) of the planned 2,843 km DFC network has been commissioned. DFCs have transformed logistics in India by facilitating increased freight volumes without passenger train interference.

Road Transport

- India has a total road network of 63.4 lakh km, including National highway (NH) network of 146,195 km.
- **NH network comprises only 2%** of total road network yet it carries about 40% of the overall road freight traffic.
- The National Industrial Corridor Development Programme aims to create advanced industrial cities in India, positioning them as major manufacturing and investment hubs.
- There has been a shift of development of national highways – progress from a project-based approach to a corridor-based approach.
 - **Bharatmala Pariyojana:** Launched in October 2017, it aims to develop 34,800 km of National Highways. By 2024, approximately 76% of the projects (26,425 km) has been awarded, and 18,926 km have been constructed.
 - **Char Dham Mahamarg Pariyojna:** As of 2024, road project to connect all four dhams through highway with total length of 825 km and 620 km has been completed.
 - **National High-Speed Corridors (HSCs):** Length of HSCs expanded from 93 km in 2014 to 2,474 km in 2024.
 - **4-lane and above:** National Highways (excluding HSCs): The length grew approximately 2.5 times, from about 18,300 km to 45,900 km between 2014 and 2024.
- To improve road connectivity, key initiatives undertaken include advanced traffic management on highways, establishment of logistics parks, sustainable vehicle scrapping, and ongoing ropeway projects.
 - **Advanced traffic management system:** Installed about 4,000 km of national highways for efficient traffic management and emergency response.
 - **Multi-Modal Logistics Parks (MMLP):** Till December 2024, Six MMLPs in Chennai, Indore, Nagpur, Jalna, Jogighopa and Bangalore have been awarded.
 - **National highway maintenance policy:** Contractual maintenance for the entire NH network is managed through Performance-Based Maintenance Contracts (PBMC) of 5-7 years or Short-Term Maintenance Contracts (STMC) of 1-2 years. Additionally, long-term maintenance contracts of around 20 years are undertaken through the Toll Operate and Transfer mode and Investment Trust.
 - **Vehicle scrapping policy:** Incentive/disincentive-based policy with 82 Registered Vehicle Scrapping Facilities (RVSFs) operational across 19 States/UTs, having scrapped about 1.62 lakh vehicles. An additional 65 RVSFs are under construction, which will add one more State.
 - **Ropeways projects development:** Fifteen projects are in progress. Projects at Varanasi, Dhosi Hill, Bijli Mahadev, and Ujjain have been awarded, and ten more are under bidding.

Civil Aviation

- Airport operators and developers, including the Airports Authority of India, are pursuing a capital expenditure plan exceeding ₹91,000 crore from FY20 to FY25.
- The initiatives in this sector and their achievements are mentioned below:
 - **Under the Regional Connectivity Scheme:** UDAN, 619 routes connecting 88 airports, including two water aerodromes and 13 heliports, have been operationalised so far.
 - The airport's cargo handling capacity has been gradually increasing, reaching 8.0 million MT in FY24.

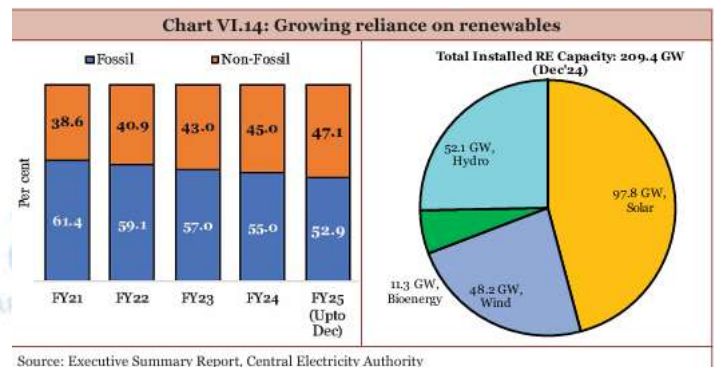
Ports And Shipping

- **Infrastructure Development:**
 - **Vadhavan Mega Port:** The port is being developed with over ₹76,000 crore investment; this port will have nine container terminals and various berths.
 - **Tuticorin International Container Terminal:** Inaugurated in September 2024, it is designed to handle 6 lakh twenty-foot equivalent units (TEUs) annually and accommodate container vessels up to 10,000 TEUs.
 - **Outer harbour at Tuticorin:** This project aims to boost port capacity by 4 million TEUs with two 1,000-meter terminals.
- **Port-Led Industrialisation:**
 - Union Cabinet approved 12 **new industrial smart cities** with an investment of ₹ 28,602 crore across 10 states, along with 8 additional sanctioned projects.
 - **Utilisation of salt lands:** Around 25,000 acres of salt lands have been identified to enhance port sector infrastructure.
- **International Linkages:**
 - **Chabahar Port and INSTC:** Shahid Beheshti Port at Chabahar connects Mumbai to Eurasia via the INSTC, reducing transport costs and time, leading to a 43 % increase in vessel traffic and a 34 % rise in container traffic for FY24.
 - **Sittwe Port, Myanmar:** Sittwe Port, part of the **Kaladan Project**, offers an alternative route to north-eastern states, reducing transport costs between Kolkata and Mizoram.
- **PPP Projects:**
 - The Central Government approved 98 PPP projects, including 23 captive projects, worth around ₹69,800 crore, excluding the Vadhavan Port Project with a PPP investment of ₹38,000 crore. Currently, 56 projects valued at ₹41,480 crore are operational, increasing port capacity by approximately 550 million tonnes per annum (MTPA).
- **National Maritime Heritage Complex** in Lothal was approved, featuring a museum with 14 galleries, the tallest lighthouse museum, India's largest Navy gallery and themed amusement parks.
- The **international container transshipment port at Galathea Bay**, Great Nicobar Island, has been planned to enhance cargo transshipment from Indian East Coast ports and neighbouring countries.
- India is enhancing waterway connectivity to the North-East by developing waterways in Bangladesh and funding 80% of the ₹305 crore project.

- India is also investing ₹1,010 crore to improve the Brahmaputra and Barak rivers and the Indo-Bangladesh Protocol route. Key initiatives include:
 - **Harit nauka Guidelines:** Launched in January 2024, these guidelines aim to green 1,000 inland vessels over the next ten years.
 - **Cargo promotion Scheme:** This initiative encourages cargo owners to switch from rail and road to inland waterways transport, promoting it as a sustainable alternative.
 - **River cruise tourism:** Improved waterways have benefited both cargo and tourism, with 82,587 passengers on day cruises by October 2024 and a fivefold increase in night cruise passengers to 11,431 in FY24 compared to FY19.
 - **Jal Marg Vikas Project on NW-1:** This project enhances cargo transport on the Ganga-Bhagirathi-Hooghly river system, achieving 65 % physical progress with a revised cost of ₹5,061.15 crore.
 - **Jal Marg Vikas Project II (Arth Ganga):** Focused on sustainable development, this project includes the construction of community jetties and navigation improvements, with 49 out of 60 approved community jetties already commissioned

Power Sector

- By the end of December 2024, the country's total renewable energy installed capacity increased by 15.8 % year-on year, reaching 209.4 GW, up from 180.8 GW in December 2023.
- **Renewable energy now constitutes about 47 % of India's total installed capacity.**
- Under the **Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)**, Integrated Power Development Scheme (IPDS) introduced in 2014, and the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), introduced in 2017, about ₹1.85 lakh crore has been invested to boost distribution infrastructure across various states.
- Consequently, 18,374 villages have been electrified under DDUGJY, and 2.9 crore households have gained access to electricity through SAUBHAGYA.



DIGITAL CONNECTIVITY

Telecommunications

- By October, 2024, **5G services were launched in all states and union territories.**
- Over 4.6 lakh 5G Base Transceiver Stations (BTSSs) have been installed nationwide.
- **Bharat Net Project** to connect all Gram Panchayats and villages with broadband.
- **Digital Bharat Nidhi** will replace the Universal Service Obligation Fund (USOF). It is aimed at boosting digital and telecommunication services in rural and underserved areas of India
- **Bharat Net Project to connect all Gram Panchayats and villages with broadband.** As of December 2024, 6.92 lakh km of **Optical Fibre Cable (OFC)** has been laid, 2.14 lakh GPs are service-ready (including 5,032 via satellite, 12.04 lakh FTTH connections have been installed.
- **Comprehensive telecom development plan for north-eastern region:**

- Mobile Services: 1,358 sites providing services in uncovered villages and highways.
- Arunachal Pradesh and Assam: 671 towers cover 1,178 villages.
- Meghalaya: 433 towers cover 622 villages and 3 highways.
- **Telecom development for islands:**
 - Andaman & Nicobar Islands: Submarine OFC connectivity completed, with 205 Gbps bandwidth utilised and satellite bandwidth increased from 2 Gbps to 4 Gbps.
 - Lakshadweep Islands: Submarine OFC project (1,869 km) commissioned in January 2024, enabling 5G and FTTH services.
- **Mobile services in uncovered areas:**
 - Border Villages Scheme: 319 villages covered with 4G (295 towers).
 - Aspirational districts scheme: 502-Village Scheme: 215 towers commissioned, covering 251 villages across 112 districts in 4 states. 7,287-Village Scheme: 2,497 sites commissioned, covering 3,804 villages in 5 states.

Information Technology

- The **GI Cloud initiative**, known as **MeghRaj**, is a key component of India's information technology strategy.
- India's co-location data centre capacity reached 977 MW in 2023. The total capacity under construction for 2024-2028 is 1.03 GW, with an additional 1.29 GW planned.
- The data centre market in India is expected to grow from US\$4.5 billion in 2023 to US\$11.6 billion by 2032, at a CAGR of 10.98 %.
- India benefits from lower construction costs, its well-established IT sector, digitally enabled services ecosystem, and relatively affordable real estate.

RURAL INFRASTRUCTURE

Rural Drinking Water And Sanitation

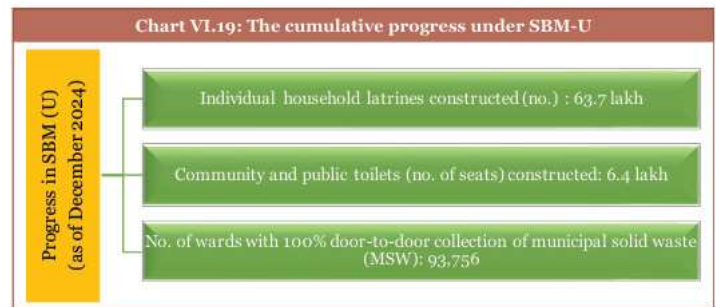
- **The Jal Jeevan Mission (JJM)** aims to ensure long-term water security for rural households by providing reliable access to safe piped drinking water.
 - Presently, eight states, namely, Arunachal Pradesh, Goa, Haryana, Himachal Pradesh, Gujarat, Punjab, Telangana and Mizoram, and three union territories, namely, Andaman & Nicobar Islands, Dadra Nagar Haveli & Daman Diu and Puducherry have achieved 100 % coverage.
- **Swachh Bharat Mission Grameen (SBM-G)** achieved open defecation-free (ODF) status in the first phase. Phase II (2020-21 to 2024-25) focused on converting the villages from ODF to ODF Plus.
 - An **ODF plus** progress is captured in three categories namely aspiring, rising and model. The goal of SBM-G Phase-II is to make all the villages ODF Plus, i.e. "Model Category."
 - In 2024, 1.92 lakh villages were incrementally declared ODF Plus under the model category, taking the total number of ODF Plus villages to 3.64 lakh
- Success stories of waste management initiatives:
 - **Model of sustainable development and community empowerment in Erattayar Gram Panchayat, Idukki, Kerala:** By focusing on waste management, the Panchayat preserves the environment and creates jobs, particularly for women. The Haritha

Karma Sena does door-to-door collection, generating approximately ₹2.5 lakh per month.

- **Transforming Waste into Wealth: NADEP Composting, Chhindwara, Madhya Pradesh:** This district has prioritised biodegradable waste management through NADEP (a method of organic composting that produces fertiliser from organic materials) compost pits. Each NADEP pit is projected to yield 500 kg of compost per cycle, generating an estimated income of ₹30,000 annually for farmers through three composting cycles.

Urban Infrastructure

- Building on the success of the **Open Defecation Free (ODF)** nation through the **Swachh Bharat Mission (SBM-U)**, SBM-Urban 2.0 was launched in 2021. It envisions creating 'garbage-free cities', integrating waste management and sanitation practices aligned with sustainability and circular economy principles.



- As per the 78th round report of NSS, 97 % of households in urban areas report access to toilets.
- The **Swachhata App** effectively allows citizens to report grievances, directing them to the relevant municipal corporation for resolution.
- The **Google toilet locator** allows users to upload information about community and public toilets in their cities as 'SBM Toilet' on Google Maps and provide feedback. To date, 67,407 toilets across 3,326 cities are mapped on Google Maps, including those in hospitals, malls, bus stands, railway stations, metro stations, markets, and more.
- **The Pradhan Mantri Awas Yojana – Urban (PMAY-U)**, launched in 2015, aims to provide permanent housing in urban areas. Currently, 29 states and union territories have signed agreements to implement PMAY-U 2.0, with approval having been granted for 6 lakh houses in FY25.
- **Metro rail and rapid rail transit systems** are operational or under construction in 29 cities across India, with 1010 kilometres currently operational in 23 cities and an additional 980 kilometres underway.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT):** AMRUT scheme was launched in 2015 to focus on improving urban water management in 500 cities. As a result, tap water coverage has increased to 70%, and sewerage coverage has risen to 62%.
- **Climate Smart Cities Assessment Framework (CSCAF):** Launched in 2019, this public assessment framework aims to enhance climate-sensitive development in cities. CSCAF 2.0 was introduced in 2020, evaluating 126 cities via 28 indicators across five thematic areas. The upcoming CSCAF 3.0 is currently being developed.

Table VI.1: Achievement under the standard uniform framework to evaluate cities

Protocol	Description	Progress
ODF certified	Complete access to toilets by citizens and ensuring that nobody goes out for open defecation at any time of day or night.	4,576 ULBs
ODF+	ODF and all community and public toilets are clean, hygienic and functional while following basic cleanliness criteria.	3,913 ULBs
ODF++	ODF+ and complete faecal sludge from toilets is safely contained, transported, and treated while ensuring that no untreated sludge is discharged in the open.	1,429 ULBs
Water+	ODF++ and ensuring that no untreated liquid waste (including wastewater) is discharged without proper treatment and ensuring maximum reuse of treated wastewater.	64 ULBs

- **DataSmart Cities Strategy:** promotes data-driven governance with the data maturity assessment framework to assess cities' readiness to adopt data solutions, focusing on systemic and sectoral pillars.
- **National Urban Innovation Stack:** facilitates collaboration within urban ecosystems by leveraging urban data, supporting data-driven governance.
- **National Urban Learning Platform:** A scalable platform designed for capacity building among urban local bodies, offering a comprehensive approach to improve urban management capabilities.
- **City investments to innovate, integrate and sustain challenge:** supports innovative urban projects with significant funding, promoting circular economy practices. The second phase was approved in 2023 to fund climate-resilient infrastructure in a maximum of 18 cities.
- **Urban Learning Internship Programme:** Launched in 2020, TULIP connects urban local bodies with youth, offering internship opportunities to enhance skills and experience in urban transformation. As of now, more than 49,000 internship opportunities have been posted across the nation, out of which over 14,500 internships are ongoing and completed.
- **National Urban Digital Mission:** seeks to establish shared digital infrastructure across cities, enhancing citizen-centric governance and service delivery by 2024.
- **Real Estate Development:** Rules under the Real Estate (Regulation & Development) Act, 2016 (RERA) have been notified in all States and Union Territories except Nagaland, with various regulatory authorities established.

TOURISM INFRASTRUCTURE

- **Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASHAD)** aims to develop tourism infrastructure at identified pilgrimage destinations and heritage cities.
- **Swadesh Darshan Scheme** is aimed at the integrated development of tourism destinations, including theme-based tourist circuits.
- Swadesh Darshan Scheme 2.0 (SD 2.0) was launched in 2022, with the vision to develop sustainable and responsible tourism destinations. Under this scheme, 34 projects have been approved, with a total funding of ₹793.2 crore.
- Moreover, in line with the FY25 budget announcement, 40 projects across 23 states have been approved for interest-free loans for 50 years for an amount of ₹3,295.8 crore under the special assistance to states for capital investment. This initiative aims to create iconic tourist centres of global standards by supporting their development and marketing.

SPACE INFRASTRUCTURE

- India currently operates 56 active space assets, including 19 communication satellites, 9 navigation satellites, 4 scientific satellites, and 24 earth observation satellites.
- ISRO has enhanced its capabilities by adding a Small Satellite Launch Vehicle (SSLV) to its fleet.
- **New Space India Limited (NSIL)** successfully fulfilled its contract to launch 72 OneWeb satellites into low earth orbit. Recently it also launched the GSAT-20 satellite in collaboration with SpaceX.
- ISRO has advanced its geospatial platforms which are playing a pivotal role in infrastructural monitoring and management. For example, ISRO's Bhuvan Platform supports infrastructure surveillance under schemes like MGNREGA and the watershed component of PMKSY at different stages of implementation.

- As part of India's Space Vision 2047, the Union Cabinet has approved four key projects:
 - Gaganyaan follow-on mission, which will pave the way for the establishment of the first module of the Bhartiya Antariksh Station
 - Chandrayaan-4 Lunar Sample Return Mission
 - Venus Orbiter Mission
 - The development of the Next Generation Launch Vehicle.
- **NyayaVikas Portal** for judicial infrastructure: Developed in collaboration with the Department of Justice, this portal monitors 2,840 judicial projects using Web GIS and mobile geotagging, with over 7,900 geotags created to track progress.
- **Urban geospatial databases for AMRUT Cities:** ISRO has created large-scale 2D urban geospatial databases for 238 AMRUT cities, assisting in developing GIS-based master plans for urban planning.

WAY FORWARD

- India's **infrastructure development** remains central to its **fiscal and public policy agenda**, with **capital expenditure in FY25 reaching 3.3 times the FY20 level**.
- Despite **Q1FY25 constraints** from elections and monsoons, **capex picked up from July to November 2024**, ensuring **steady infrastructure build-up**.
- Moving forward, India must prioritize **sustainable materials, modernized physical assets, multi-modal transport, disaster-resilient urbanization, public transport, and rural connectivity** to sustain **high growth**.
- Given **budget constraints**, **private sector participation** must increase in **project planning, financing, construction, and monetization**.
- **PPP models** such as **build-operate-transfer, hybrid annuity, and toll-operate-transfer** need better implementation.
- **National Infrastructure Pipeline, National Monetisation Pipeline, and PM-Gati Shakti** have de-bottlenecked processes, but **private investment remains limited**.
- A **coordinated strategy** involving **government, financial market players, project planners, and private enterprises** is crucial.
- **Capacity building in project conceptualization, execution strategies, risk sharing, contract management, and conflict resolution** must improve.
- **Public-private partnerships (PPPs) must be embraced nationwide** to meet infrastructure demands, ensure efficient execution, and drive long-term **economic growth and sustainability**.

CHAPTER 7: INDUSTRY: ALL ABOUT BUSINESS REFORMS

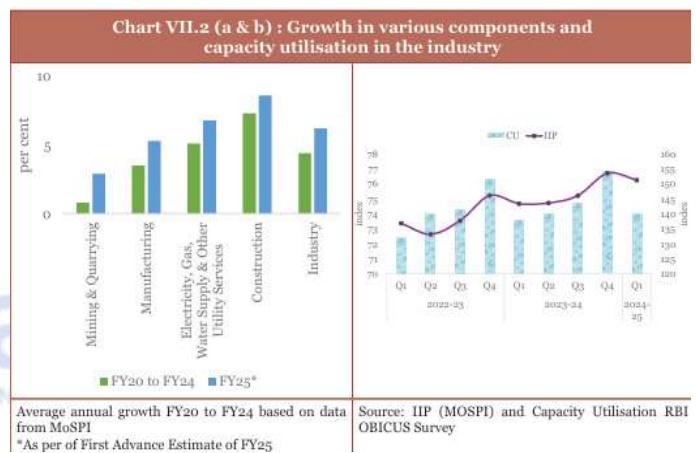


CHAPTER AT A GLANCE

- The significant shifts across global manufacturing landscape over the decade in terms of geopolitical tensions, aggressive trade policies, supply chain disruptions, global trade slowdown are being discussed.
- Major industries such as steel, cement, chemicals and petrochemicals have stabilised industrial growth while, consumer focussed sectors like automobiles, electronics and pharmaceuticals have emerged as growth drivers.

OVERVIEW

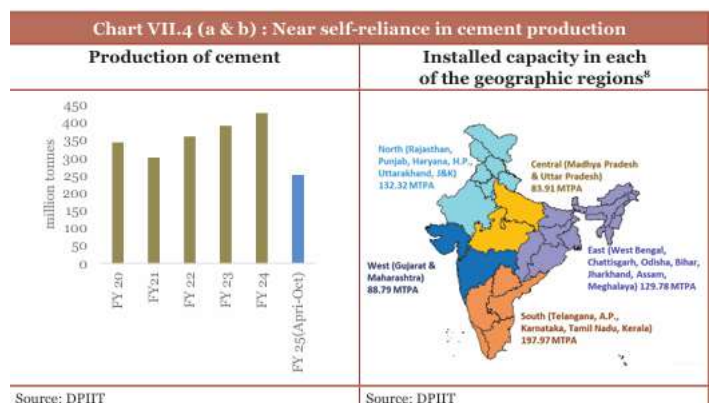
- India holds **2.8% of the global manufacturing share**, compared to China's 28.8%, offering significant growth potential.
- India's manufacturing sector is showing growth, with a projected **6.2% increase in FY25**.
- IMF observes that manufacturing production is increasingly shifting towards emerging market economies, particularly China and India. India stands a good chance of benefitting from the trends in global industrial diversification.
- The industrial sector (including four sub-sectors, i.e., mining and quarrying; electricity, gas, water supply and utilities; manufacturing and construction) was affected significantly by the pandemic, leading to a contraction in FY21.



CORE INPUT INDUSTRIES

Cement

- India is the **second largest cement producer in the world after China**.
- The current annual installed capacity of the cement industry is about 639 million tonnes, with cement production of around 427 million tonnes in FY24.
- Most of the cement plants in India are located in proximity to **the raw material source**.
- About 87% of the cement industry is concentrated in the States of Rajasthan, Andhra Pradesh, Telangana, Karnataka, Madhya



Pradesh, Gujarat, Tamil Nadu, Maharashtra, Uttar Pradesh, Chhattisgarh, Odisha, Meghalaya and West Bengal.

- Domestic cement consumption is around 290 kg per capita against a global average of 540 kilograms per capita.

Steel Industry

- The country's crude steel and finished steel production registered a growth of 3.3% and 4.6%.
- There has been an overall upward trend in steel production and consumption during April-November FY25 despite some month-on-month fluctuations.
- In FY24, construction, and infrastructure accounted for an estimated 68% of total steel consumption, followed by engineering and packaging at 22% and automobiles at nine per cent.
- **India has been a net importer of steel** from April to November FY25.
- The decline in India's export of finished steel during FY25 was mainly driven by gaps between international and domestic prices.
- The total domestic consumption of steel scrap in India is approximately 30 Million Tonnes (MT), of which around 5 MT is imported.
- The use of scrap significantly reduces specific energy consumption. It also reduces the water consumption by 40%, and greenhouse gas emissions by 58%.
- National Steel Policy 2017, envisages a **steel production capacity of 300 MT (Million Tonnes) by 2030 by enhancing domestic per capita consumption to 160 kg by 2030**. Currently the crude steel capacity of the country is 161.30 MT in 2022-23.

Chemical and Petrochemical sector

- The country is a net importer of these products, with a dependence on imports of around 45 per cent of petrochemical intermediates

Capital Goods

- The government has been actively promoting Smart Manufacturing and Industry 4.0, supporting the establishment of **Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH)** Udyog centres at various institutions.
- These centres aim to foster an ecosystem where manufacturing industries, especially SMEs, can learn about and adopt new technologies.

Automobile Industry

- In FY24, the industry recorded auto mobile domestic sales growth of 12.5%. Recognising the sector's potential, the government has extended the PLI Scheme by one year.

White Goods

- Traditionally refer to large home appliances such as stoves, refrigerators, freezers and washing machines.
- Today, the same goods are offered in an array of colours but are still collectively referred to as white goods.
- White goods are also used in a different connotation within other categories.
- In fabrics, white goods can refer to home products made from linen, cotton, or other white base materials. This includes curtains, towels, and

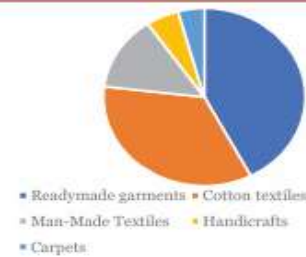
Electronics Industry

- The country has also **drastically reduced its dependence on smartphone imports**, with 99% now manufactured domestically.
- In FY24, the country produced approximately 33 crore mobile phone units, with over 75% of the models being 5G enabled. The key drivers of growth have been the large domestic market, the availability of skilled talent, and low-cost labour.
- **India's electronics market represents 4% of the global market.**

Textiles Industry

- The textile industry is a major employment generator and it accounts for about 11% of India's manufacturing GVA.
- India is a leading producer of jute and ranks second globally in cotton, silk, and man-made fibre production.
- India is the sixth largest exporter of textiles and apparel and has a share of about 4% of the global trade in this segment.
- The share of textiles and apparel, including handicrafts, in India's total merchandise exports stood at about 8% in FY24.
- India's technical textile industry is rapidly growing, ranking fifth globally. Indian technical textiles market stands at US\$26.8 billion in FY24. India is a net exporter of technical textiles, with exports valuing US\$2.58 billion in FY24.

Share of components in India's textile exports in FY24



Pharmaceuticals

- **The Indian pharmaceutical industry is the world's third-largest by volume.**
- The industry boasts of a diverse product portfolio encompassing generic drugs, bulk drugs, over-the-counter medications, vaccines, biosimilars, and biologics, establishing a strong global presence.
- The medical devices industry in India is experiencing rapid growth, with a CAGR of approximately 15%.
- Currently, **India holds an estimated 1.5% share of the global medical devices market.** Within Asia, India ranks fourth in terms of market size, following Japan, China, and South Korea. On a global scale, India is recognised as one of the top twenty medical device markets.
- In October 2023, **the Central Drugs Standard Control Organisation approved India's first indigenously developed CAR-T cell therapy.**

Innovation Ecosystem

- As per the WIPO Report 2022, **India ranks sixth among the top 10 patent filing offices globally.**
- Patent applications are largely in computer & electronics, mechanical & biomedical, and communication fields.
- Since the National IPR Policy 2016, amendments to rules governing patents, designs, copyrights, and trademarks have streamlined application processes and reduced compliance. The Patent (Amendment) Rules 2024 has further simplified patent processing, filing and maintenance.

- **Start-Up Intellectual Property Protection Scheme:** It provides financial and technical assistance to start-ups in filing and processing patent, design, and trademark applications, which has been extended till March 2026.
- **IP Saarthi Chatbot:** offers instant support and guidance to users regarding IP registration and grant processes.
- There is a more than 2-fold increase in patent filing since 2014-15, and patent grants have increased by more than 17-fold from 2014-15.
- The patent filings by domestic educational institutes have tripled from 7405 in 2021-22 to 23306 in FY24.
- **Patent filings by women applicants increased from 15 in FY15 to 5183 in FY24.**
- India's rank in the **Global Innovation Index has improved to 39th in 2024** among 133 economies from 81st position in 2015. It ranks 1st among the 38 lower middle-income group economies and 1st among the 10 economies in Central and Southern Asia.
- **India holds the 7th position in intangible asset intensity**, surpassing the growth rates of many high-income economies and matching the intangible investment intensity of Germany and Japan (as a share of GDP).
- **India holds 4th position in Science and Technology Cluster Ranking 2024 by WIPO** with 4 cities among the world's top 100 science and technology clusters.
- India's R&D incentives include grants, loans, patent related incentives, tax exemptions. It does not give tax credits, tax deductions and tax holidays.

Micro Small and Medium Enterprises

- By fostering entrepreneurship and creating a large number of jobs at relatively low capital costs, the sector plays a crucial role, second only to agriculture.
- As of November 26, 2024, MSMEs have reported employing 23.24 crore individuals.
- The launch of TReDS has been an important step taken by Government of India for benefitting the MSMEs and helping them realize their receivables in a time-bound manner at a relatively lower financing cost.
- **TReDS, regulated by the RBI**, is a marketplace that enables buyers such as government departments, public sector undertakings, corporates etc. to honour timely payments to their MSME suppliers as per MSMED Act 2006.
- Several central public sector enterprises and government entities have been using the TReDS platform since its inception to facilitate timely payments to MSME suppliers. Active participants like BHEL, NTPC, ONGC, BPCL, HPCL, IOCL and others help MSMEs maintain their working capital cycles while enabling them to benefit from lower interest rates.

STATE-WISE PERFORMANCE

- Four states—the western states of **Gujarat and Maharashtra** and the southern states of **Karnataka and Tamil Nadu**— account for about **43% of the total industrial GSVA**.
- In contrast, six states of the Northeast (excluding Sikkim and Assam), account for only 0.7 per cent of the industrial GVA.
- The **Business Reform Action Plan (BRAP)** formulated by the Department for Promotion of Industry and Internal Trade aims to assess and enhance the ease of doing business across states.

- **Tamil Nadu is a leader in the traditional leather sector and now championing the growth of non-leather footwear.** The state contributes to 38% share in India's footwear and leather products output, contributing to about 47% share in India's total leather export.
- Tamil Nadu (TN) also houses technical and academic institutions like **Central Leather Research Institute, Council for Leather Exports, Footwear Design and Development Institute.**

PLI SCHEME

- Aims to enhance India's manufacturing capabilities and attract global companies to set up production facilities in the country.
- The PLI scheme was launched with the following key objectives:
 - Boost domestic manufacturing and reduce import dependence.
 - Attract **original equipment manufacturers (OEMs)** and contract manufacturers.
 - Encourage investment in **high-tech sectors like electronics, semiconductors, pharmaceuticals, and specialty steel.**
 - Enhance **India's participation in global supply chains.**
 - Create employment and promote skill development in manufacturing
- The **14 sectors** are:
 1. Mobile Manufacturing and Specified Electronic Components,
 2. Critical Key Starting Materials/Drug Intermediaries & Active Pharmaceutical Ingredients,
 3. Manufacturing of Medical Devices
 4. Automobiles and Auto Components,
 5. Pharmaceuticals Drugs,
 6. Specialty Steel,
 7. Telecom & Networking Products,
 8. Electronic/Technology Products,
 9. White Goods (ACs and LEDs),
 10. Food Products,
 11. Textile Products: MMF segment and technical textiles,
 12. High efficiency solar PV modules,
 13. Advanced Chemistry Cell (ACC) Battery,
 14. Drones and Drone Components.

CONCLUSION

- India's **industrial growth** is shaped by shifting **output shares**, favouring sectors like **chemicals, pharmaceuticals, automobiles, and steel**, while **import dependency in coal, capital goods, and chemicals** persists.
- **Global uncertainties** and **import-intensive raw material costs** pose challenges to domestic production.
- The path to **industrialization** requires **deregulation, R&D, innovation, and workforce skilling**, fostering **global competitiveness and profitability** beyond fiscal incentives.
- **MSMEs and textiles** need **market access, financial support, and compliance simplification.**

- The **unsupportive global environment** has caused **manufacturing deceleration in H1 FY25**, impacted by **seasonal factors, global trade policies, and investment slowdowns**. However, **business surveys and PMI data** indicate **growing optimism**.
- A **vigorous focus on deregulation, R&D, skilling, and MSME support** is essential for **competitiveness**.
- **State-wise industrial analysis** highlights **business reform variations**, affecting **industrial progress**.
- Moving forward, **synchronization among governments, private sector, skilling ecosystems, R&D institutions, and financial stakeholders** is critical to making **India a global manufacturing powerhouse**.
- By **enhancing industrial policies and fostering innovation**, India can **withstand global headwinds** and accelerate its **manufacturing ambitions**.



CHAPTER 8: SERVICES: NEW CHALLENGES FOR THE OLD WAR HORSE

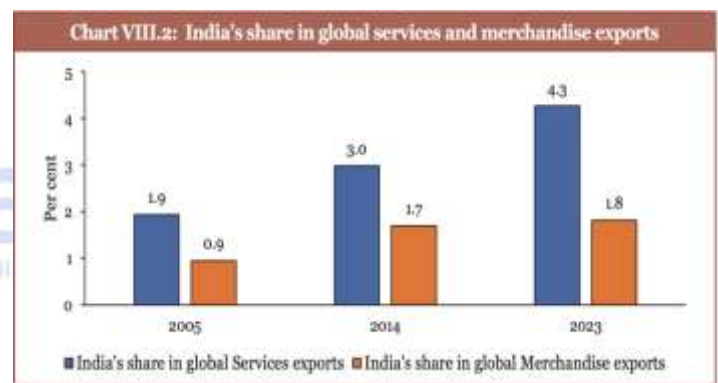


CHAPTER AT A GLANCE

- In FY25 so far, services propped up GDP growth when manufacturing has been affected by dampening global merchandise trade.
- This chapter looks at the contributions of the Indian services sector in the past year, its sources of financing, progress across various sectors and provides an outlook to the future.

CURRENT STATUS

- Services value added accounts for about **62%** of the global GDP.
- While the services sector has been expanding globally, supply chains continue to face significant disruptions due to geo-political uncertainty, i.e., the rise of protectionism, wars, and climate related challenges.
- **India's share in global services exports** has been **steadily rising** for the last two decades.
- In 2023, the **United States led global services exports** with a dominant **13%** share, followed by the **United Kingdom** with **7.4%**, **Germany** with **5.5%** and **Ireland, China, and France**, each accounting for approximately **5%**.
- **India ranks seventh** globally, representing a **4.3%** share in the global services export.



SERVICES SECTOR PERFORMANCE IN INDIA

- **Contribution to GVA:** The service sector's contribution to the total GVA at current prices has increased from 50.6% in FY14 to about 55% in FY25.
- It provides employment to approximately **30% of the workforce**.
- Services indirectly contribute to GDP through the **servicification of manufacturing**, i.e., **increasing utilization of services in manufacturing production and post-production value addition**.
- **Growth:** Year on year growth in the service sector (based on real GVA) has been **above 6%** for every year in the last decade, **except FY21 (the Covid year)**.
 - The average services growth rate in **pre-pandemic years was 8%**, this has **risen to 8.3%** in the post pandemic years (FY23-25).



Trade in the services

- The **export of services** grew at a **trend rate of 11%** during **FY14 to FY23**, at constant prices.
- **Computer services and business services exports** account for around **70% of India's services exports**.
- India remained amongst the **top five major countries in terms of growth in services exports** in FY25 (April-September).

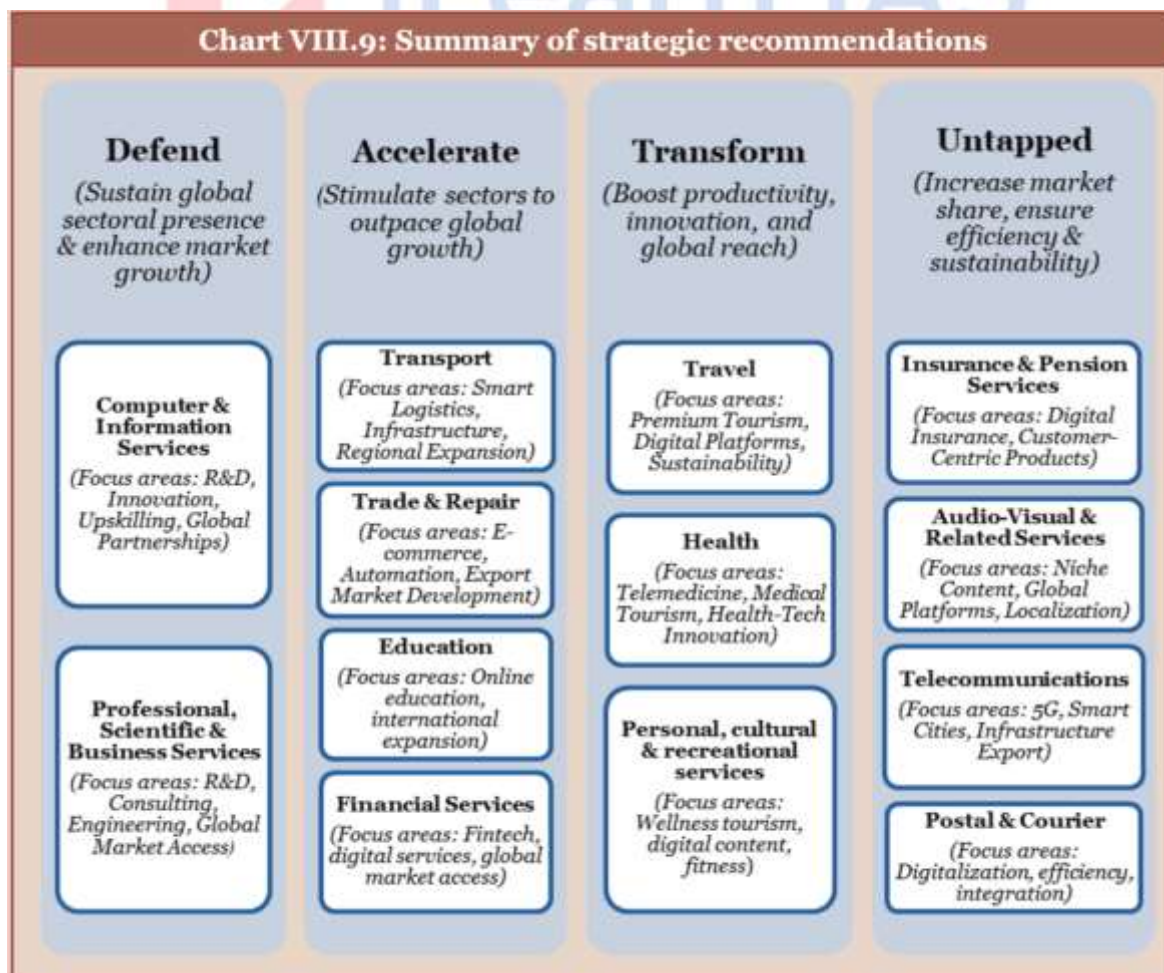
Sources of Financing

- **Bank Credit:** The year on year (YoY) growth in credit to the services sector was recorded at **13%**.
 - **Computer software and professional services** recorded the highest YoY credit growth.
- **FDI:** FDI equity inflows stood at **USD 29.8 billion** in FY25 (April- September), while. the services sector witnessed **USD 5.7 billion inflow** in the same period.
 - **Insurance services** received the highest FDI inflows within services (over 62%), followed by the **financial sector** (18%).

Purchasing Manager's Index

- It is a **survey-based measure** that asks the respondents about changes in their perception about key business variables as compared with the previous month.
- It is **calculated** separately for the **manufacturing and services sectors** and then a composite index is also constructed.
- The **PMI** is a number from **0 to 100**.
- A print above **50** means expansion, while a score below that denotes contraction.
- A reading at **50** indicates no change.

NITI Aayog's strategic recommendations for services sector



PROGRESS IN LOGISTICS AND PHYSICAL CONNECTIVITY BASED SERVICES

Railways

- Indian Railways (IR) is the **fourth largest network in the world**.
- **Passenger traffic** originating in IR achieved a growth of **8%** over the previous year.
- **Revenue-earning freight** in FY24, achieved a growth of **5.2%**.
- **Digitalisation push in railways:** E-ticketing has touched **86%** in the **reserved sector** as of October 2024.
 - **Ticketing through digital means** in the **unreserved sector** has increased from **28%** at the beginning of the current financial year to around **33% in October 2024**.
- **Bharat Gaurav Trains:** It offers **theme-based tourist circuit trains** designed to showcase India's rich cultural heritage and historical landmarks. These trains provide **comprehensive tour packages** that include comfortable rail journeys, off-board excursions, hotel accommodations, guided tours, meals, and travel insurance.

Road Transport

- **Road transport** generates the **highest GVA within transport services**.
 - During FY23, road transport accounted for **78% of the total GVA of transport services**.
- **Enhancing user convenience on national highways:** Traditional ways of tolling have been replaced with digitised tolling through adoption of **electronic toll collection through FASTag**.
 - This has reduced the average waiting time at toll plazas from 734 seconds to 47 seconds.
 - **Barrier free tolling** is being targeted to be rolled out on all four lane plus NHs and high speed corridors by FY29.

PM Gati Shakti Initiative: It is a national masterplan aimed at **integrated infrastructure development** and **multimodal connectivity**. It is a GIS based digital platform that integrates 16 ministries.

Key targets under the scheme:

- Reduce **logistics costs** from **13-14% of GDP** to **8%**.
- **Railways:**
 - Increase **cargo handling capacity** to 1,600 million tonnes by 2024-25.
 - Add **200 new terminals** for multimodal logistics connectivity.
 - Expand railway **track length** to **1.2 lakh km**.
- **Road Transport & Highways:**
 - Build **two lakh km** of national highways by 2024-25.
 - Complete **11 industrial corridors** to support manufacturing hubs.
 - Develop **35 multi-modal logistics parks (MMLPs)** under Bharatmala.
- **Ports & Shipping:**
 - Increase **cargo handling capacity** of ports to **1,750 MTPA** (Million Tonnes Per Annum).
 - Reduce **turnaround time** for ships to **less than 24 hours**.
- **Airports:**
 - Develop 220 new airports, heliports, and water aerodromes by 2025.
 - Expand air connectivity under **UDAN** (Ude Desh Ka Aam Nagrik).
- **Energy Sector:**
 - Expand power transmission network to 4,54,200 circuit km by 2024-25.
 - Increase **renewable energy capacity** to **500 GW by 2030**.
- Develop **100 smart cities** with efficient urban transport systems.
- Expand **metro rail networks** to more than **25 cities**.
- Improve **last-mile connectivity** to industrial zones and logistics hubs.

- **Road Safety:** The government has formulated a comprehensive strategy to improve road safety standards, a **cashless treatment scheme for road accident victims** has been initiated, truck driver health is supported through **Abhay project**.

Aviation

- India is the **fastest-growing aviation market** globally.
- In the sphere of the **maintenance, repair, and overhaul (MRO) industry**, the government is encouraging original equipment manufacturers to establish facilities in India.

Ports, Waterways and Shipping

- The government of India has launched the **Maritime India Vision 2030** and **Maritime Amritkaal Vision 2047** with the aim of **positioning Indian shipbuilding and ship repair among the top five globally by 2047**.
- **Inland Water Transport:** The **total navigable length** of waterways in India is around **14,850 km**.
 - As of October 2024, the country has **26 operational waterways** of more than **4,800 km**.
 - **Passenger movement** on national waterways in **Q2 FY25** increased to **3.36 crore** from around **67 lakhs** in **Q2 FY24**.

OTHER SERVICES

Tourism and hospitality

- The **tourism sector's contribution to GDP** regained the pre-pandemic level of **5% in FY23**, creating **7.6 crore jobs**.
- **International tourist arrivals (ITAs)** in India have **rebounded to pre-pandemic level** in 2023.
 - The share of India's ITAs in World ITAs stands at **1.45%** in 2023.
 - India received **1.8% of world tourism receipts** and attained a **rank of 14th worldwide** in world tourism receipts during 2023.

Real Estate

- India **ranked 31st out of 89 countries** in the **Global Real Estate Transparency Index** in 2024.
- **Housing demand** in India is expected to touch **93 million units** by 2036.
- **Government Initiatives:**
 - The **Real Estate (Regulation and Development) Act** has brought numerous improvements in the real estate sector, including protection against fraud, increased transparency, timely project deliveries, and measures to prevent misuse of funds, among other benefits.
 - **GST** has helped to simplify the taxation structure in real estate transactions by applying a **single unified tax system** across states.
 - **Real Estate Investment Trusts (REITs)** as an investment vehicle in commercial real estate has allowed investors to pool funds and invest in income-generating real estate.

- Implementation of **online platforms for the submission and approval of building plans** has led to a reduction in delays.
- **Digital India Land Records Modernisation Programme:** This Centrally Sponsored Scheme aims to **modernize land records, enhance transparency, and improve land governance** in India.
 - It will **digitise land records**, conduct **re-surveys**, link land records with **geo-referenced cadastral maps** and **connect sub-registrar offices with revenue records** for real time updates.
 - It will also provide online access to **RORs (Record of Rights), mutation status, maps, and ownership details** to citizens.

Business Services

- **Information Technology Services:** The industry has estimated **revenues of USD 254 billion**, marking a **3.8% YoY growth** in FY24 (excluding e-commerce).
 - **Tech exports** reached **nearly USD 200 billion** (3.3% growth) while the domestic market is expected to expand by **5.9%**, crossing **USD 54 billion in FY24**.
 - The sector **added 60,000 employees** to reach a workforce of **5.43 million** in FY24.
- **Reforms in IT sector:**
 - Abolition of **angel tax**
 - Expanding the scope of **safe harbour rules** and streamlining **transfer pricing assessment procedures**
 - Abolition of 2% equalization levy
 - Reduction in **tax deduction at source on payment made by e-commerce operators to e-commerce participants**
 - Relief from GST on data centre exports
 - Reduction of rate of tax collection at source to be collected by e-commerce operators
- **Global Capability Centres:** **Global Capability Centres (GCCs)** are **offshore units** of multinational corporations (MNCs) that handle **technology, business operations, innovation, and support services**. These centres **do not directly engage in core sales or customer-facing activities** but serve as strategic hubs for their parent companies.
 - The **number of GCCs in India** has grown from approximately **1430 in FY19** to over **1700 in FY24**.
 - As of FY24, GCCs in India **employ nearly 1.9 million professionals**.
- **Telecommunication:** India stands as the **second-largest telecommunications market**, with over 1.18 billion telephone subscribers.
 - The country also **leads in mobile data consumption per subscriber** and offers the world's **most affordable data rates**.
- **Open Network for Digital Commerce (ONDC):** It is a government backed initiative launched by the **Department for Promotion of Industry and Internal Trade (DPIIT)** to **democratize digital commerce** in India.

Angel Tax: refers to the tax levied on startups when they receive equity investment from investors at a **premium valuation** exceeding the fair market value (FMV) of their shares.

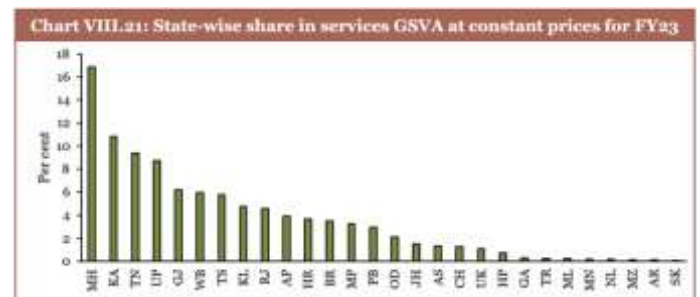
Safe Harbour Rules (SHR) are **predefined transfer pricing norms** that allow businesses to **avoid rigorous scrutiny by tax authorities** if they comply with prescribed margins.

Transfer Pricing refers to the pricing of goods, services, and intellectual property transferred **between associated enterprises (AEs)** in **different tax jurisdictions**.

- It aims to create an **open, decentralized, and interoperable e-commerce ecosystem** that enables sellers and buyers to transact across multiple platforms without being restricted to a single marketplace.
- Innovative features:
 - **Logistics as a Service:** Unified first, middle, and last-mile connectivity across 1,200+ cities.
 - **Financial Services:** Integrating lending services, eKYC, and low-cost distribution of financial products like personal loans and health insurance.
 - **Collaborations with Bhashini** for AI-driven language translation and Saarthi app for businesses.

STATE WISE SERVICE SECTOR PERFORMANCE

- For FY23, Karnataka and Maharashtra account for more than one fourth of the total service sector GSVA of all the states.
- These states along with Tamil Nadu, Uttar Pradesh, and Gujarat together share more than 50% of the total service sector GSVA.
 - These states also have more than 50 per cent of the total industrial GSVA.
 - The bottom 19 states only account for 25% of the service sector GSVA.
- **Categories of states based on service and industrial performance:**
 - **States with high per capita industrial GSVA:** States like Gujarat, Uttarakhand and Himachal Pradesh – these stand to gain by accelerating industrialisation which will strengthen services through the ongoing trend of **servicification of industries**.
 - **Strong service sector performers:** States like Karnataka, Telangana, Kerala – they largely depend on urbanised service driven economies.
 - **Dual strengths – industrial and service** (Maharashtra and Tamil Nadu) – Their diversified economies integrate manufacturing with trade, financial services, real estate & professional services.
 - **States with reform potential:** These states are Arunachal Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Rajasthan, Tripura, Uttar Pradesh and West Bengal.



CONCLUSION

- Two significant transformations are reshaping India's services landscape: the rapid technology-driven transformation of domestic service delivery and the diversification of India's services exports.
- **Appropriate skilling of the workforce** is one of the primary conditions for manufacturing and services progress in the era of AI penetration.
- There is also an urgent need to **review and amend complicated procedures** at the grassroot level, regulations and rules that hinder both manufacturing and services to build resilience against persisting global headwinds.

CHAPTER 9: AGRICULTURE AND FOOD MANAGEMENT: SECTOR OF THE FUTURE



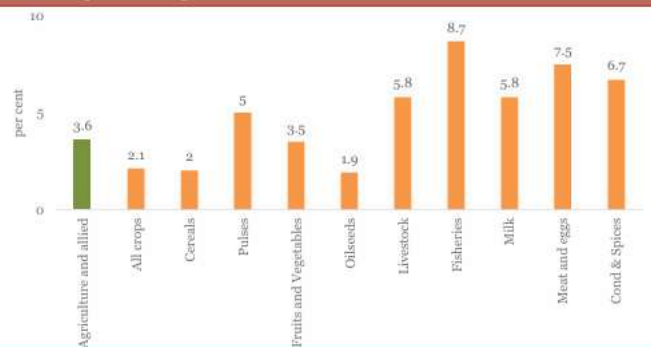
CHAPTER AT A GLANCE

- Agriculture sector is marked by consistent growth rate in the past years. Considered as the sector of future, the sector is relevant with the grappling climate change impact on it.
- From the prelims perspective, the chapter discusses on the trends in agriculture sector, schemes making the sector more efficient and productive, major branches that hold the sector relevant including horticulture, animal husbandry and other allied sectors.

OVERVIEW

- Contributes approximately **16% of country's GDP** and **supports 46.1% population**.
- Robust growth averaging 5% annually from FY17 to FY23.
- Agricultural income has increased at 5.23% annually past decade compared to 6.24% for non-agricultural income and 5.8% for overall economy.
- High-value sectors such as horticulture, livestock, and fisheries have emerged as the primary contributors to the overall growth of agriculture.
- As a **major global cereal producer**, India accounts for 11.6% of the world's total output. Crop yields in the country are considerably lower compared to those of other leading producers, underscoring the need for productivity improvements.
- **Marginal and small landholdings**, which constitute more than 96% of the total landholdings.
- **Andhra Pradesh** was the leading performer with a CAGR of 8.8% in agriculture and allied sectors, excluding forestry and logging. **Madhya Pradesh** followed with 6.3% and **Tamil Nadu** came in third with 4.8% among major states.
- The food processing industry in India is one of the largest employers within organised manufacturing, accounting for 12.41% of total employment in the organised sector.

Chart IX.2: Compound Annual Growth Rate (CAGR) in Value of Output from Agriculture and Allied Sectors: 2011-12 to 2021-22



Source: Price Policy for Kharif Crops 2024-25, CACP

Floriculture

- High-performing sector, earning its status as a "**sunrise industry**" with a 100% export orientation.
- Profitable avenues in commercial floriculture include cut-flower production, loose-flower production, dry flowers, cut greens, pot plants, flower seeds, perfumes and essential oils.
- **Small and marginal landholdings have 63% of the area of cultivation under floriculture.**

- Entrepreneurs across states like Tamil Nadu, Karnataka, Madhya Pradesh, West Bengal, Uttar Pradesh and Maharashtra have capitalized on this opportunity, establishing sophisticated export-oriented floriculture units.
- Key export destinations included the USA, Netherlands, UAE, UK, Canada, and Malaysia.

Oilseeds

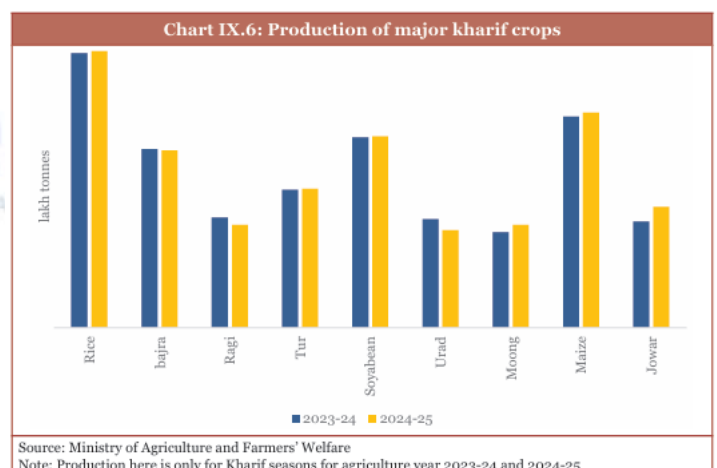
- The slower growth rate of oilseeds at 1.9% raises concerns, especially considering India's heavy reliance on imports to satisfy domestic edible oil demands.

Horticulture

- India's horticulture sector is more productive and profitable than traditional agriculture, emerging as a fast-growing industry.
- India is also a leading exporter of fresh grapes worth USD 417.07 million globally in 2023-24.
- Key grape-growing states are **Maharashtra, Karnataka, Tamil Nadu, and Mizoram**.
- Maharashtra leads in production, contributing over 67% of total output with the highest productivity in 2023-24 (Nashik Model).

Crop Production

- In the Union Budget of 2018-19, the government decided the principle of fixing MSP at a level of at least **1.5 times the weighted average cost** of production for these crops.
- The government has raised the MSP for **nutri-cereals (Shree Anna)**, pulses, and oilseeds as part of these initiatives.
- For the fiscal year FY25, the MSP for arhar and bajra has been increased by 59% and 77% over the weighted average cost of production, respectively.
- Moreover, the MSP for Masur has risen by 89%, while rapeseed has seen an impressive increase of 98%.



Seed Quality And Use Of Fertilizers

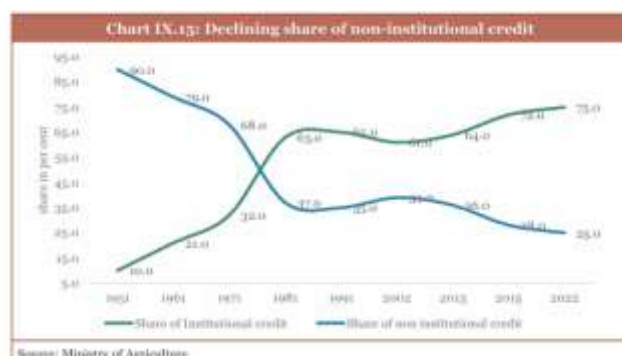
- In the 2023-24 season, ICAR produced 1.06 lakh quintals of breeder seeds encompassing 1,798 varieties across 81 crops for further multiplication.
- In regions such as north-western India, heat-tolerant wheat varieties have seen widespread adoption to alleviate the effects of heat stress.
- Many soils in India are deficient in organic carbon, macronutrients, and essential micronutrients such as boron, iron, and sulphur.
- **'Urea Gold'** combines urea with sulphur, minimizing wastage and enhancing plant nutrient uptake.
- Additionally, the use of drones and fertigation techniques are being implemented to optimize fertiliser applications.

- The **Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother Earth (PM PRANAM) initiative** incentivises states to adopt alternative fertilisers such as Nano Urea, Nano Diammonium phosphate (DAP), and organic fertilisers.

Rainfall And Irrigation

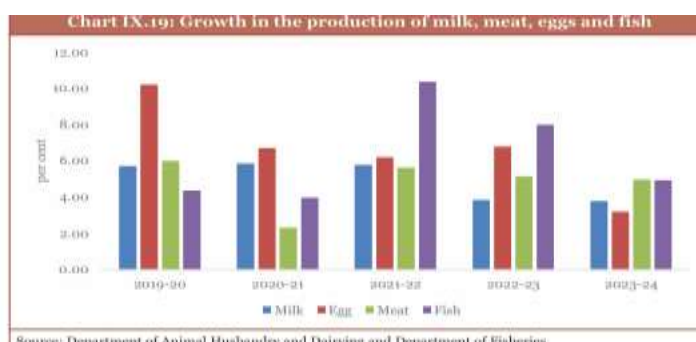
- Only about 55% of the net sown area receiving irrigation.
- More than two thirds of India's agricultural land face the threat of drought, with national estimates indicating a 35% probability of drought occurrences.
- **Sources of Irrigation: Canal irrigation > Tank irrigation**
- **Lower tail dependence:** A statistical phenomenon indicating the correlation between yield losses and rainfall deficits. It is stronger for extreme rainfall deficiencies than for minor variations.
- India experienced a significant increase in irrigation area coverage and intensity from FY16 to FY21 from 49.3% to 55% of gross cropped area.
- States such as Punjab, Haryana, Uttar Pradesh, and Telangana exhibit high irrigation coverage of their gross cropped area, with figures around 98%, 94%, 84% and 86%, respectively.
- States like Jharkhand and Assam lag significantly, with irrigation coverage below 20 per cent.
- **8% of irrigated area under micro irrigation compared to 68.6% in USA and 13.7% in China.**
- Drip irrigation reduces water consumption by 39-55% and boosts yields by 33-41% due to targeted water delivery.

Agriculture Credit



Allied Sectors

- Livestock sector's contribution increased from 24.38% to 30.23% in GVA.



SCHEMES AND PROGRAMMES INCLUDED

Pradhan Mantri Fasal Bima Yojana (PMFBY)	<ul style="list-style-type: none"> ○ A scheme of the Ministry of Agriculture & Farmers Welfare, PMFBY is an insurance service for farmers for their yields, launched in 2016. ○ The new Crop Insurance Scheme is in line with the One Nation One Scheme theme. ○ There will be a uniform premium of only 2% to be paid by farmers for all Kharif crops and 1.5% for all Rabi crops (winter sown). ○ In case of annual commercial and horticultural crops, the premium to be paid by farmers will be only 5%. ○ The balance premium will be paid by the Government (to be shared equally by central and state government). ○ The scheme implemented on an area-based approach ○ There is no upper limit on Government subsidy. This means, even if the balance premium is 90%, it will be borne by the Government. ○ There will be exemption from Service Tax liability of all the services involved in the implementation of the scheme. ○ All farmers growing notified crops in a notified area during the season who have insurable interest in the crop are eligible. ○ Comprehensive risk insurance is provided to cover yield losses due to non-preventable risks of natural disasters, drought, dry spells, Pests and Diseases will be covered. In post-harvest losses, coverage will be available up to a maximum period of 14 days from harvesting for those crops which are kept in "cut & spread" condition to dry in the field. ○ Loss and damage due to localised risks like hailstorm, landslide and inundation affecting isolated farms in the notified area would also be covered.
Rashtriya Krishi Vikas Yojana	<ul style="list-style-type: none"> ○ Nodal Ministry: Ministry of Agriculture & Farmers Welfare ○ The scheme incentivizes States to increase public investment in Agriculture & allied sectors. ○ It merges some schemes of the Department of Agriculture & Farmers Welfare which includes Rainfed Area Development, Paramparagat Krishi Vikas Yojana etc. ○ Centrally sponsored scheme
National Mission on Edible Oils	<ul style="list-style-type: none"> ○ Launched by the Government of India in August 2021, NMEO-OP targets a substantial increase in oil palm cultivation and crude palm oil production. ○ Centrally Sponsored Scheme with a special focus on the North east region and the Andaman and Nicobar Islands, with a focus on increasing the area and productivity of oilseeds and Oil Palm. ○ The salient features of NMEO-OP include assistance for planting material, inputs for intercropping upto gestation period of 4 years

	and for maintenance, establishment of seed gardens, nurseries, micro irrigation, bore well/pumpset/water harvesting structure, vermi compost units, solar pumps, harvesting tools, custom hiring centre cum harvester Groups, farmers and officers training, and for replanting of old oil palm gardens, etc.
Paramparagat Krishi Vikas Yojana	<ul style="list-style-type: none"> ○ Elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). ○ Under PKVY Organic farming is promoted through adoption of organic village by cluster approach and PGS certification. ○ Promotion of commercial organic production through certified organic farming. ○ The produce will be pesticide residue free and will contribute to improve the health of consumer. ○ It will raise farmer's income and create potential market for traders. ○ It will motivate the farmers for natural resource mobilization for input production
PM Krishi Sinchayee Yojana	<ul style="list-style-type: none"> ○ Accelerated Irrigation Benefit Programme (AIBP) ○ Har Khet Ko Pani (HKKP): It consists of four sub-components, being Command Area Development & Water Management (CAD&WM), Surface Minor Irrigation (SMI), Repair, Renovation and Restoration (RRR) of Water Bodies, and Ground Water (GW) Development component. ○ Per Drop More Crop (PDMC) component is being implemented by the Department of Agriculture and Farmers Welfare. ○ The Watershed Development component (WDC) is being implemented by the Department of Land Resources ○ It is a Centrally Sponsored Scheme (Core Scheme), where Centre-States share will be 75:25. ○ In the case of the north-eastern region and hilly states, the share will be 90:10. ○ In 2020, the Ministry of Jal Shakti launched a mobile application for Geo-Tagging of the components of projects under PMKSY.
Atal Bhujal Yojana	<ul style="list-style-type: none"> ○ Atal Bhujal Yojana is a central sector scheme which was launched in 2019. ○ Duration: Period of 5 years (2020-21 to 2024-25), Increased by 2 years in May, 2023. ○ Objective: The major objective of the Scheme is to improve the management of groundwater resources in select water stressed areas in identified states. ○ The scheme is being taken up in 8220 water stressed Gram Panchayats of seven states: Haryana, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. ○ Implemented by Ministry of Jal Shakti.

Soil Health Card Scheme	<ul style="list-style-type: none"> ○ Launched in 2014-2015, to assist State Governments to issue Soil Health Cards (SHC's). ○ Promotes Integrated Nutrient Management (INM). ○ In INM, judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures & bio-fertilizers is done for improving soil health and its productivity. ○ Flagship program of the Ministry of Agriculture & Farmers Welfare. ○ Merged with Rashtriya Krishi Vikas Yojana (RKVY) Cafeteria Scheme as Soil Health & Fertility component in 2022-23. ○ Provides soil nutrient status of his/her holding to each farmer and advises him /her on the dosage of fertilizers. ○ It also suggests the soil amendments needed that should be applied to maintain soil health in the long run. ○ SHC contains the status of soil with respect to 12 parameters- Micro-nutrients, Macro-nutrients, Secondary-nutrients and Physical parameters. ○ A farm will get the soil card once in every 3 years. ○ It helps in reducing the cost of production.
PM PRANAM	<ul style="list-style-type: none"> ○ PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother-Earth. ○ To complement state/UT efforts to promote: <ul style="list-style-type: none"> ● Sustainable and balanced use of fertilisers. ● Encourage the adoption of alternative fertilisers. ● Promote organic and natural farming practices. ○ Financial Mechanism: States and UTs that reduce their chemical fertiliser consumption compared to the past 3 years' average will receive 50% of the savings from the fertiliser subsidy. ○ Fertiliser Types Covered: Urea, DAP (Diammonium Phosphate), NPK (Nitrogen, Phosphorus, Potassium), and MOP (Muriate of Potash). ○ Scope: All States and UTs in India.
Urea Gold	<ul style="list-style-type: none"> ○ It is a new variety of Urea coated with Sulphur. ○ It is being introduced to address the Sulphur deficiency in soil and save input costs for the farmers. ○ Urea Gold surpasses the existing Neem-coated urea in terms of both economic viability and efficiency. ○ Sulphur-coated urea facilitates a gradual release of nitrogen, thereby enhancing its availability and uptake by crops. ○ The inclusion of humic acid in Urea Gold further extends its lifespan as a fertilizer. ○ This product not only substitutes traditional urea consumption but also reduces overall fertilizer usage. ○ According to the report, 15 kg of Urea Gold provides comparable benefits to 20 kg of conventional urea, making it a more efficient

	and effective choice for farmers.
KISAN Credit Card	<ul style="list-style-type: none"> ○ The Kisan Credit Card Scheme is to be implemented by Commercial Banks, RRBs, Small Finance Banks and Cooperatives. ○ The Kisan Credit Card scheme aims at providing adequate and timely credit support from the banking system under a single window with flexible and simplified procedure to the farmers for their cultivation and other needs as indicated below: ○ To meet the short-term credit requirements for cultivation of crops; <ul style="list-style-type: none"> ● Post-harvest expenses; ● Produce marketing loan; ● Consumption requirements of farmer household; ● Working capital for maintenance of farm assets and activities allied to agriculture; ● Investment credit requirement for agriculture and allied activities. ○ Eligibility: <ul style="list-style-type: none"> ● Farmers - individual/joint borrowers who are owner cultivators; ● Tenant farmers, oral lessees & share croppers; ● Self Help Groups (SHGs) or Joint Liability Groups (JLGs) of farmers including tenant farmers, share croppers etc.
National Mission on Sustainable Agriculture	<ul style="list-style-type: none"> ○ One of the eight Missions under National Action Plan on Climate Change (NAPCC). ○ NMSA has been formulated for enhancing agricultural productivity especially in rain fed areas focusing on integrated farming, water use efficiency, soil health management and synergising resource conservation.
Rashtriya Gokul Mission	<ul style="list-style-type: none"> ○ Nodal Ministry: Ministry of Animal Husbandry, Dairying and Fisheries ○ 100% grant-in-aid by the Central Government with few exceptions. ○ To Protect and Conserve Indigenous Breeds of cattle. ○ To increase milk production in the country. ○ To reduce the burden of diseases among cattle.
National Livestock Mission	<ul style="list-style-type: none"> ○ Improve quantity and quality of livestock production systems ○ Nodal ministry: Ministry of Fisheries, Animal Husbandry and Dairying ○ Breed improvement initiatives ○ Strengthening fodder seed chains ○ Research and development in livestock sectors ○ Livestock insurance promotion ○ Skill development and technology transfer

PM Matsya Sampada Yojana	<ul style="list-style-type: none"> ○ The PMMSY is a transformative scheme for the fisheries sector and the welfare of fishermen under the aegis of the Ministry of Fisheries, Animal Husbandry and Dairying, Government of India. ○ Aims to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, and strengthen the value chain. It endeavours to establish a robust fisheries management framework and improving fishers' welfare.
PM KISAN	<ul style="list-style-type: none"> ○ Central sector scheme to provide financial assistance to land-holding farmer families across India. The Department of Agriculture and Farmers Welfare (DA&FW) of the Ministry of Agriculture and Farmers Welfare is the implementing agency. ○ The government linked Kisan Credit Card with PM-KISAN to streamline farmers' access to formal credit, reduce documentation, and make loan processing faster using existing beneficiary data. ○ Income Support: Rs 6,000 annually (3 equal installments of Rs 2,000 each) ○ Eligibility: All landholding farmers (certain exclusions). All institutional landholders are not eligible. ○ Beneficiary Identification: Done by State Governments and Union Territories as per the scheme's guidelines
ONE NATION ONE RATION CARD	<ul style="list-style-type: none"> ○ It is a scheme that allows beneficiaries to access subsidized food grains from any Fair Price Shop in India, irrespective of their home state. ○ The three types of ration cards are AAY (Antyodaya Anna Yojana), PR (Priority), and BPL (Below Poverty Line) cards ○ Gujarat was the first state to implement the One Nation One Ration Card scheme.
KISAN RIN PORTAL	<ul style="list-style-type: none"> ○ The portal helps farmers avail subsidised loans under the Kisan Credit Card (KCC). ○ It was developed in collaboration with multiple government departments. ○ It offers a comprehensive view of farmer data, loan disbursement specifics, interest subvention claims, and scheme utilisation progress. ○ It fosters seamless integration with banks for more focused and efficient agriculture credit.
Agriculture Infrastructure Fund	<ul style="list-style-type: none"> ○ It is a Central Sector Scheme which was launched in 2020. ○ Objective: The scheme shall provide a medium- to long-term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and financial support. ○ Who are eligible? <ul style="list-style-type: none"> ● Primary Agricultural Credit Societies (PACS)

	<ul style="list-style-type: none"> • Marketing Cooperative Societies • Farmer Producers Organizations (FPOs) • Farmers • Self Help Group (SHG) • Joint Liability Groups (JLG) • Multipurpose Cooperative Societies • Agri-entrepreneurs and Startups • Central/State agency or Local Body sponsored Public-Private Partnership Projects. <ul style="list-style-type: none"> ○ Exclusions: Public Sector Undertakings (PSU's) are directly not eligible under the scheme, but projects sponsored under PPP are eligible. ○ All scheduled commercial banks, scheduled cooperative banks, Regional Rural Banks (RRBs), Small Finance Banks, Non-Banking Financial Companies (NBFCs), and National Cooperative Development Corporation (NCDC) may participate to provide this financing facility. ○ If required, need-based refinance support will be made available by NABARD to all eligible lending entities, including cooperative banks and RRBs, as per its policy.
--	--

CONCLUSION

- India's agricultural sector remains a **crucial pillar** of economic growth and **food security**, demonstrating **resilience** despite challenges like **climate change** and **water scarcity**.
- Expanding **allied sectors** (animal husbandry, dairying, fisheries) enhances **income and diversification**.
- **Government initiatives** like **PM-KISAN**, **PMKMY**, **ONORC**, and **e-NAM** boost **farmer welfare** and **market efficiency**.
- **Policy shifts** promoting **price signals**, **risk hedging**, **balanced fertilization**, and **diversification** can lift **productivity**.
- With stable **5% growth**, a **20% GVA share**, and rising **agro-entrepreneurship**, India can **achieve food security** while supporting **global markets**, unlocking **limitless possibilities** for sustainable agriculture.

CHAPTER 10: CLIMATE AND ENVIRONMENT: ADAPTATION MATTERS



CHAPTER AT A GLANCE

- *Path to developed nation by 2047 focussing inclusive and sustainable development aligning with the international goals in Paris Agreement*
- *Terms associated with climate adaptation like mitigation bias that can be asked for prelims as seen in Previous year questions*
- *Trends in climate management which is divided into climate finance, emission, vulnerability and adaptation trends*
- *Schemes and programmes in relevance that guide India and the world. The chapter discusses on efficiency of government schemes in arenas of efficient power use, renewable energy, NAPCC, cleanliness drives which reaped benefits and is in their later phases of implementation.*

SECTOR WISE TRENDS

Climate Finance Trends

- **Mitigation Bias:** Based on UNFCCC assessment, the international flow of finance to climate management, there has been a larger shift towards mitigation than adaptation.
- **Congestion cost:** cost of managing a complex energy system incorporating fossil fuels and renewables.
- There has been **an increase in adaptation expenditures from 3.7% to 5.6% of GDP** between FY16 and FY22 indicating prominence of adaptation and resilience building in the development strategy.
- **New Collective Quantified Goal (NCQG) at COP29:** Developed nations have **set a climate finance goal of \$300 billion annually by 2035**, which is significantly lower than the estimated need of **\$5.1 - 6.8 trillion by 2030**.
- **Sovereign Green Bonds Issuance:** India issued **₹16,000 crore in FY23** and **₹20,000 crore in FY24** as green bonds to fund climate-friendly projects.
- **Green Debt Securities:** SEBI's framework for **green, transition, blue, and yellow bonds** aims to improve green financing.
- **MDB vs. Bilateral Climate Finance:** **MDB Climate Finance (\$1.1 billion) outpaces bilateral climate finance (\$0.6 billion)**, showcasing a reliance on multilateral funding.

Carbon Emissions & Energy Transition

- **India's Per Capita Emissions:** **One-third of the global average**, despite being one of the fastest-growing economies.
- **Net-Zero Commitment:** India aims to achieve **net zero emissions by 2070**.
- **Renewable Energy Growth:** Installed capacity from **non-fossil sources reached 213,701 MW (46.8% of total capacity) as of Nov 2024**, with a **50% target by 2030**.
- **Energy Demand Growth:** India's per capita energy consumption in **FY23 was 16.7 GJ**, whereas a developed nation's HDI of **0.9 requires 45.7-75 GJ per capita**.

- **Coal Dependency:** Despite efforts in renewables, **coal remains India's most reliable energy source**, contributing significantly to the energy mix.
- **Green Hydrogen Push:** **5 million metric tonnes annual green hydrogen production target by 2030.**
- **Emission Gap report** is being released by UNEP.

Climate Vulnerability & Adaptation

- **India's Climate Risk Rank:** **7th most vulnerable country** to climate change (Global Climate Risk Index 2021).
- **Dune planting and sand bypassing** associated with coastal conservation.
- **Systemic rice intensification:** The System of Rice Intensification (SRI) is an agroecological and climate-smart rice production methodology that allows farmers to increase yields by 30-50% or more, use 90% less seed, use 30-50% less irrigation water (through AWD and other methods) by conserving electricity and use 30-100% less chemical fertiliser and pesticides.
- **Varuna River rejuvenation in Varanasi** is a step in the right direction for river-based sustainability approach.

Urban Climate Resilience & Air Quality

- **Vertical Gardens for Air Pollution Control:** Green walls installed in **17 states** using **7 lakh waste plastic bottles.**
- **National Clean Air Programme (NCAP):** Targets a **20-30% reduction in PM2.5 and PM10 by 2025** across **130 cities.**
- **Smart laboratory on Clean Rivers** established under India-Denmark Green Strategic Partnership.

Circular Economy & Sustainable Consumption

- **LiFE Mission (Lifestyle for Environment):** Aims for at least **80% of villages & urban bodies to adopt eco-friendly lifestyles by 2028.**

Lessons from Developed Nations on Energy Transition

- India plans an **800 MW Advanced Ultra Super Critical (AUSC) plant** to improve coal efficiency that can reduce emissions by about 11% compared to super-critical plants.
- **Advanced Ultra Super Critical Plant:** Coal-fired power plants that use advanced technology to improve efficiency and reduce emissions. This technology operates at higher temperatures and pressures than conventional power plants result in better efficiency, which means less coal is needed to generate the same amount of electricity. AUSC technology also reduces CO2 emissions.
- **AI-driven power demand surging in developed nations**, leading to **higher fossil fuel use.**

SCHEMES AND PROGRAMMES

PM Surya Ghar Muft Bijli Yojana	<ul style="list-style-type: none"> ○ Administered by Ministry of New & Renewable Energy ○ Aims to provide free electricity up to 300 units per month to households in India ○ Households will be provided with a subsidy up to 40% of the cost under Central Financial Assistance to install solar panels
--	--

	<ul style="list-style-type: none"> on their rooftops Households can access collateral-free low interest loans One modal solar village will be developed in each district to promote roof top solar adoption Scheme aims to add 30 GW of solar energy in residential sector
PM JANMAN (PM Janjati Adivasi Nyay Maha Abhiyaan)	<ul style="list-style-type: none"> Focuses on 11 critical interventions through 9 ministries under the leadership of Ministry of Tribal Affairs to improve the socio-economic welfare of PVTGs.
AMRUT 2.0 (Atal Mission for Rejuvenation and Urban Transformation)	<ul style="list-style-type: none"> Implemented by Ministry of Housing and Urban Affairs Aims at creating water-secure cities through water conservation, augmentation and rejuvenation. Also focuses on reuse of water and greywater management. Aims at providing 100% coverage of water supply to all households in around 4,800 urban local bodies by providing about 2.68 crore tap connections and 100% coverage of sewerage and septage in 500 AMRUT cities by providing around 2.64 crore sewer or septage connections 'Pey Jal Survekshan' an annual survey will be conducted to promote progressive competition among cities
River Cities Alliance	<ul style="list-style-type: none"> A partnership between Ministry of Jal Shakthi and Ministry of Housing and Urban Affairs Focuses on sustainable river-centric development.
MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes)	<ul style="list-style-type: none"> MISHTI comes after India joined the 'Mangrove Alliance for Climate' launched during the 27th Conference of Parties (COP27) to the UNFCCC held in Egypt in November 2022. It was launched by the Ministry of Environment, Forest & Climate Change on the occasion of World Environment Day, i.e., 5th June 2023. MISHTI envisages the restoration/reforestation of mangroves covering approximately 540 sq.km., spreading across 9 states and 3 union territories for a period of five years. The scheme is primarily focused on the Sundarbans delta, Hooghly Estuary in West Bengal, India, and other bay parts of the country, but also includes other wetlands in the country. Under the MISHTI scheme, the government is providing financial assistance to local communities to undertake mangrove plantation activities.
Jal Shakthi Abhiyan	<ul style="list-style-type: none"> Launched by Ministry of Jal Shakthi It is a campaign for water conservation and water security in the country through a collaborative effort of various ministries of the Government of India and state governments. The important water conservation interventions are:

	<ul style="list-style-type: none"> • Water conservation and rainwater harvesting, • Renovation of traditional and other water bodies/tanks, • Reuse of water and recharging of structures, • Watershed development • Intensive afforestation.
National Green Hydrogen Mission	<ul style="list-style-type: none"> ○ The mission's primary aim is to establish India as a global hub for the production, utilisation, and export of green hydrogen and its derivatives. ○ Key Components: <ul style="list-style-type: none"> • Strategic Interventions for the Green Hydrogen Transition Programme (SIGHT): SIGHT will incentivise the domestic manufacturing of electrolyzers and the production of green hydrogen. • Green Hydrogen Hubs: The mission will identify and develop states and regions into Green Hydrogen Hubs, fostering large-scale production and utilization. ○ Expected Outcomes by 2030: <ul style="list-style-type: none"> • A green hydrogen production capacity of at least 5 MMT per year. • An addition of approximately 125 GW of renewable energy capacity. • A reduction in fossil fuel imports • Averting nearly 50 MMT of annual greenhouse gas emissions. ○ India's current hydrogen consumption stands at around 6 million tonnes annually, with the fertilizer industry and refineries being the primary consumers. ○ By 2050, the demand for hydrogen is expected to surge to 28 million tonnes, to meet 80% of this demand with green hydrogen.
National Bioenergy Programme	<ul style="list-style-type: none"> ○ Notified by MNRE ○ It will aid the use of huge surplus biomass, cattle dung and industrial and urban biowaste. ○ Three sub schemes like W2E programme, Biomass programme and Biogas programme.
Swachh Bharat Mission 2.0	<ul style="list-style-type: none"> ○ SBM Urban 2.0 has the target of clearing around 2,400 legacy landfill sites in the country by 2025-2026. ○ To get funding from SBM Urban 2.0, cities are supposed to submit action plans to the MoHUA for bioremediation of their legacy landfills and then reuse of the land cleared. ○ Converting the waste into different categories, leading to the -

	<ul style="list-style-type: none"> • Creation of refuse derived fuel (RDF) for waste-to-energy plants, • Recycling of construction and demolition waste and bio-soil that can be used for road construction.
National Clean Air Programme	<ul style="list-style-type: none"> ○ NCAP was launched in January 2019 to improve air quality through a city- specific action plan. ○ Under NCAP, cities continuously violating annual PM levels in India need to prepare and implement annual Clean Air Action Plans (CAAPs). ○ For NCAP, the Ministry of Environment, Forest, and Climate Change has allocated ₹10,422.73 crore.
Plastic Waste Management Rules 2016	<ul style="list-style-type: none"> ○ The Ministry of Environment, Forest and Climate Change of India has recently introduced amendments to the 2016 rules, through the Plastic Waste Management (Amendment) Rules, 2024. ○ Biodegradable plastics are now defined as materials capable of degradation by biological processes in specific environments like soil and landfill, without leaving any microplastics. ○ Microplastics are defined as any solid plastic particle insoluble in water, with dimensions between 1 micron and 1,000 microns (1 micron is one-thousandth of a millimetre). ○ Definition of "Importer" now includes imports of various plastic-related materials such as packaging, carry bags, sheets, raw materials, and intermediate materials used in plastic manufacturing for commercial purposes. ○ Definition of "Manufacturer" now encompasses those engaged in the production of plastic raw materials, compostable plastics, and biodegradable plastics, reflecting a broader range of entities covered under this term.
PM KUSUM	<ul style="list-style-type: none"> ○ For de-dieselisation of the farm sector and enhancing the income of farmers. aimed at ensuring energy security for farmers in India, along with honouring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources as part of INDCs. ○ Nodal Ministry: Ministry of New and Renewable Energy ○ The eligible categories for KUSUM Scheme are: <ul style="list-style-type: none"> • An individual farmer. • A group of farmers. • FPO or Farmer producer organization. • Panchayat. • Co-operatives. • Water User Associations

Graded Response Action Plan	<ul style="list-style-type: none"> ○ GRAP is a framework designed to combat air pollution in the Delhi-NCR region. ○ It was introduced as an emergency response mechanism, and its implementation is triggered when the Air Quality Index (AQI) reaches "poor" levels. ○ The Commission for Air Quality Management (CAQM) in NCR and adjoining areas oversees the implementation of GRAP. ○ It collaborates with the Ministry of Environment, Forest and Climate Change. ○ AQI: Air Quality Index issued by government agencies to gauge air pollution based on air pollutants concentration over a specific period.
Green Credit Programme	<ul style="list-style-type: none"> ○ Green Credit Program (GCP) is an innovative market-based mechanism designed to incentivize voluntary environmental actions across diverse sectors, by various stakeholders like individuals, communities, private sector industries, and companies. ○ It is designed to foster a sustainable lifestyle and environmental conservation as part of the 'LiFE' initiative. ○ The programme encompasses 8 key types of activities like tree plantation, water management, sustainable agriculture, waste management, air pollution reduction and mangrove conservation and restoration. ○ The Green Credit program operates independently of the carbon credits provided under the Carbon Credit Trading Scheme 2023, which is governed by the Energy Conservation Act of 2001.
National Aquifer Mapping Project	<ul style="list-style-type: none"> ○ It is being implemented by Central Groundwater Board ○ The programme aims to identify and map aquifers at the micro level to quantify the available groundwater resources. ○ It aims to cover more than 25 million km² that have been delineated as hydro-geologically mappable. ○ It also aims to promote participatory groundwater management. ○ This can be achieved by empowering communities with a seamless flow of information and understanding of local aquifers.
Bhu-Neer Portal	<ul style="list-style-type: none"> ○ Advanced portal developed by Central Ground water authority under Ministry of Jal Shakthi with NIC. ○ Serves as a one-stop platform for managing and regulating groundwater resources. ○ Provides legal framework for extraction of ground water.

	<ul style="list-style-type: none"> ○ Centralised database; ○ Another step towards promoting EODB.
Floodwatch India App	<ul style="list-style-type: none"> ○ Launched by Ministry of Jal Shakthi ○ It gives information related to the flood situation and forecasts up to 7 days on a real-time basis to the public. ○ The in-house developed user-friendly app has readable and audio broadcast and all the information is available in 2 languages, viz. English and Hindi. ○ The app will also provide State-wise/Basin-wise Flood Forecast (up to 24 hours) or Flood Advisory (up to 7 days). ○ It also provides additional information regarding the storage positions of 150 major reservoirs in the country.
Green Energy Corridor	<ul style="list-style-type: none"> ○ The Green Energy Corridor (GEC) Project aims at synchronizing electricity produced from renewable sources such as solar and wind with conventional power stations in the grid. ○ Under Ministry of New and Renewable Energy. ○ GEC-Intra State Transmission System (InSTS) project was sanctioned in 2015-16, for evacuation and integration of the renewable energy capacity through setting up of transmission lines and increasing transformation capacity of substations. ○ Phase 1 of the Green Energy Corridor is already under implementation in Gujarat, Andhra Pradesh, Karnataka, Himachal Pradesh, Maharashtra, Madhya Pradesh, Tamil Nadu, and Rajasthan. ○ Phase 2 will facilitate grid integration and power evacuation of approximately 20 GW of Renewable Energy (RE) power projects in seven States namely, Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh.
Energy Conservation And Sustainable Building Code 2024	<ul style="list-style-type: none"> ○ Released by Ministry of Power's BEE. ○ Currently 23 states have notified rules to enforce ECBC compliance. ○ Sets minimum standards for commercial buildings like hospitals, hotels, schools, malls etc with a connected load of 100kW or more of energy savings between 25-50%. ○ The ECBC in India focuses on six key components of building design, including the envelope (walls, roofs, windows), lighting systems, HVAC (Heating, ventilation, and air conditioning) systems, and electrical power systems. ○ These components have both mandatory and prescriptive requirements. The code applies to both new constructions and retrofitting existing buildings.

	<ul style="list-style-type: none"> Compliant buildings are assigned one of three tags in ascending order of efficiency, namely ECBC, ECBC Plus, and Super ECBC. ECBC is important as buildings in India account for 30% of total electricity consumption, a figure that is expected to touch 50% by 2042. The State Energy Efficiency Index of 2022 ranked Karnataka as the top state for energy efficiency in buildings, followed by Telangana, Haryana, Andhra Pradesh, and Punjab.
Perform Achieve and Trade	<ul style="list-style-type: none"> PAT Scheme is a flagship program under the National Mission for Enhanced Energy Efficiency (NMEEE). It is implemented by the Bureau of Energy Efficiency (Statutory body under the provisions of Energy Conservation Act, 2001) under the aegis of the Ministry of Power. PAT scheme aims at reducing Specific Energy Consumption (SEC), i.e., energy use per unit of production for Designated Consumers (DCs) in energy-intensive sectors, with an associated market mechanism to enhance the cost-effectiveness through certification of excess energy saving, which can be traded. The excess energy savings are converted into tradable instruments called Energy Saving Certificates (ESCerts) that are traded at the Power Exchanges. The two Power Exchanges, India Energy Exchange (IEX) and Power Exchange India Limited (PXIL) provide the trading platform for ESCerts. Central Electricity Regulatory Commission-CERC (Statutory body established under Electricity Regulatory Commissions Act 1998) is the market regulator for the trading of ESCerts. PAT Scheme is implemented in cycles of 3 years each, where the Designated Consumers (DCs) are assigned SEC reduction targets. Designated Consumers (DCs) who fall short of their targets bid for the purchase of ESCerts.
Viability Gap Funding	<ul style="list-style-type: none"> Viability Gap Funding (VGF) Means a grant one-time or deferred, provided to support infrastructure projects that are economically justified but fall short of financial viability. The Scheme is administered by the Department of Economic Affairs, Ministry of Finance. VGF scheme is administered by the Empowered Committee composed of Secretary (Economic Affairs), Secretary (Expenditure), Joint Secretary, DEA-Member Secretary, CEO- Niti Aayog and Secretary of Ministry dealing with

	<p>the subject.</p> <ul style="list-style-type: none"> ○ The revamped scheme includes higher VGF support of upto 60% of the Total Project Cost (maximum up to 30% by the Central and State Governments each) for the social sectors i.e. Water Supply, Waste Water Treatment, Solid Waste Management and Health, Education. ○ Upto 80% of the Total Project Cost (maximum up to 40% by the Central and State Governments each) for Pilot/Demonstration Projects in Health and Education sectors. ○ Pilot/Demonstration projects in Health and Education sectors in the first 5 years of operations up to 50% of the O&M Costs (maximum upto 25% by the Central and State Governments each). ○ For other sector projects, Viability Gap Funding up to 40% of the Total Project Cost (maximum upto 20% by the Central and State Government each) is available.
Extended Producer Responsibility	<ul style="list-style-type: none"> ○ The concept of EPR responsibility is based on three foundation principles: <ul style="list-style-type: none"> ● Pollution prevention approach ● Life cycle thinking, ● Polluter pay principle ○ EPR responsibility Certificate is authorized by Central Pollution Control Board which is mandatory for Producers/Importers of the Electronic products. ○ Under these rules, the producers have a responsibility to delegate this responsibility to the third party or specialized organizations which manufacturers can financially aid for proper waste management. ○ E-Waste (management and handling) Rules, 2016 adopted Extended Producers Responsibility for the first time in India. ○ The Plastic Waste Management (Amendment) Rules, 2022 provide guidelines for strengthening the circular economy of plastic packaging waste as well as promoting alternatives to plastic.
Sovereign Green Bonds	<ul style="list-style-type: none"> ○ In 2022, Ministry of Finance approved India's first SGB Framework. ○ India's first SGB was issued by YES Bank in 2015. ○ The framework excludes projects like nuclear power generation, landfill projects, hydropower plants larger than 25MW etc.
Smart City Mission	<ul style="list-style-type: none"> ○ Seeks to develop 100 smart cities across India by leveraging technology and innovation to improve urban infrastructure.

	<ul style="list-style-type: none"> ○ Centrally sponsored scheme. ○ Under Ministry of Housing and Urban Affairs ○ The components of the mission include redevelopment, retrofitting and greenfield projects under area-based development and implementation of ICT under pan-city solutions.
National Adaptation Plan	<ul style="list-style-type: none"> ○ The Ministry of Environment, Forest and Climate Change is developing the National Adaptation Plan (NAP), a key document outlining India's adaptation priorities. ○ Established under the Cancun Adaptation Framework (CAF) and re-emphasized in the Paris Agreement. ○ NAPs follow a continuous iterative process that is country-driven, participatory and transparent. ○ The two overarching objectives of NAPs are to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience and facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities. ○ Countries can utilize the NAP process and its outcomes to update and improve the adaptation elements of the Nationally Determined Contributions (NDCs), a central part of the Paris Agreement.
National Mission on Sustainable Habitat	<ul style="list-style-type: none"> ○ Established in 2010, a pivotal component of NAPCC. ○ Governed by Ministry of Urban Development. ○ Aims to foster sustainability within urban areas. <div data-bbox="569 1344 1339 1680"> </div> <p>The flagship schemes associated with NMSH include:</p> <ul style="list-style-type: none"> ○ AMRUT ○ Swachh Bharat Mission ○ Smart Cities Mission ○ Urban Transport Program <p>The functional areas under NMSH include Energy Conservation Building Code, growth of medium and small cities, waste to energy initiatives etc.</p>

Green Climate Fund	<ul style="list-style-type: none"> ○ World's largest dedicated climate fund which was set up at COP 16 held in Cancun in 2010. ○ It is an operating entity of the financial mechanism of the UNFCCC ○ It accelerates transformative climate action in developing countries through a country-owned partnership approach and use of flexible financing solutions and climate investment expertise. ○ The GCF is a legally independent institution with a fully independent secretariat headed by an Executive Secretary. ○ The Secretariat, located in Songdo South Korea, began its work in December 2013.
International Solar Alliance	<ul style="list-style-type: none"> ○ International Solar Alliance is a treaty-based international organization of solar resource rich countries, lying fully or partially between the Tropic of Cancer and the Tropic of Capricorn. ○ The ISA is the brainchild of India and France "to mobilise efforts against climate change through the deployment of solar energy solutions". ○ More than 120 signatories. All UN member states are now eligible to join the ISA. Countries that do not fall within the Tropics can join the alliance with the exception of voting rights. <p>The ISA is guided by its 'Towards 1000' strategy, which aims:</p> <ul style="list-style-type: none"> ○ To mobilize USD 1000 billion of investments in solar energy solutions by 2030 ○ To deliver energy access to 1000 million people using clean energy solutions ○ To install 1000 GW of solar energy capacity. ○ To mitigate global solar emissions to the tune of 1000 million tonnes of CO2 every year.
Ek Ped Maa Ke Naam Campaign	<ul style="list-style-type: none"> ○ The essence of 'Ek Ped Maa Ke Naam' is a symbolic gesture—planting a tree in the name of one's mother. ○ This simple act serves a dual purpose: honouring the role of mothers in nurturing life and contributing to the health of the planet. ○ The Ministry of Environment, Forest, and Climate Change successfully met its ambitious goal of planting 80 crore seedlings under the 'Ek Ped Maa Ke Naam' campaign by September 2024.
MDB Climate Finance	<ul style="list-style-type: none"> ○ Multilateral development banks (MDBs) are major providers of the climate finance vulnerable nations need to reduce emissions and adapt to climate change. ○ At COP29, they issued a joint statement estimating their climate

	finance for low- and middle-income countries will rise to \$120 billion by 2030.
--	--

CONCLUSION

- India's **climate efforts** are anchored in its **net zero emissions by 2070** goal, balancing **low-carbon development** with **economic growth, energy security, and job creation**.
- A **holistic approach** integrating **mitigation and adaptation** is crucial, given the **declining global climate finance**.
- Strengthening **resilience** requires **policy incentives, R&D, and region-specific adaptation strategies**.
- While **renewable energy** deployment is advancing, challenges like **energy storage, critical mineral sourcing, and nuclear energy constraints** persist.
- **Advanced Ultra Super Critical (AUSC) power plants** and **carbon capture technologies** will optimize **fossil fuel efficiency** in the medium term.
- **LiFE Mission** promotes **low-carbon lifestyles** through awareness and education.
- Achieving **net zero** necessitates **grid infrastructure investments** and a **sustainable resource supply**. By **leveraging innovation and strategic policies**, India can **lead in climate action** while ensuring **sustainable economic development**.



CHAPTER 11: SOCIAL SECTOR: EXTENDING REACH AND DRIVING EMPOWERMENT

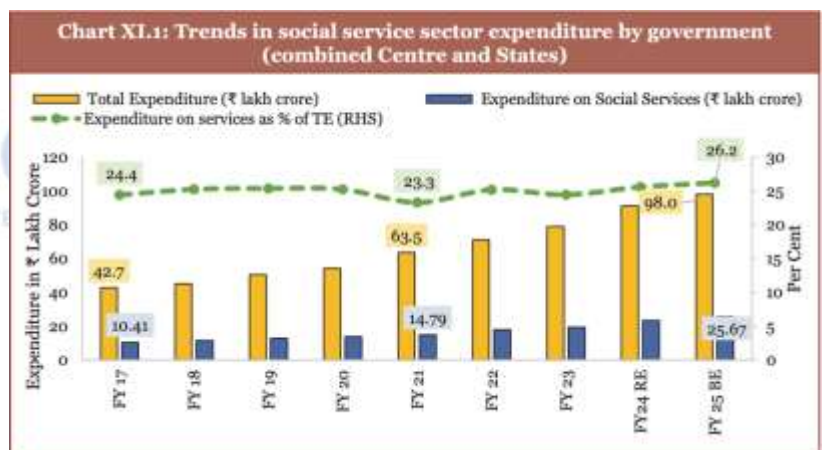


CHAPTER AT A GLANCE

- For growth to transition into meaningful development, the focus of the government is on education, health, social security and enhancing employment opportunities through skilling.
- Inclusive economic growth is the central vision of Viksit Bharat 2047.
- This chapter examines the trends in social sector expenditure and the efforts in education, health and rural development that have the potential to drive India's journey to a developed nation.
- It also suggests possible measures to be undertaken for overall social justice and development.

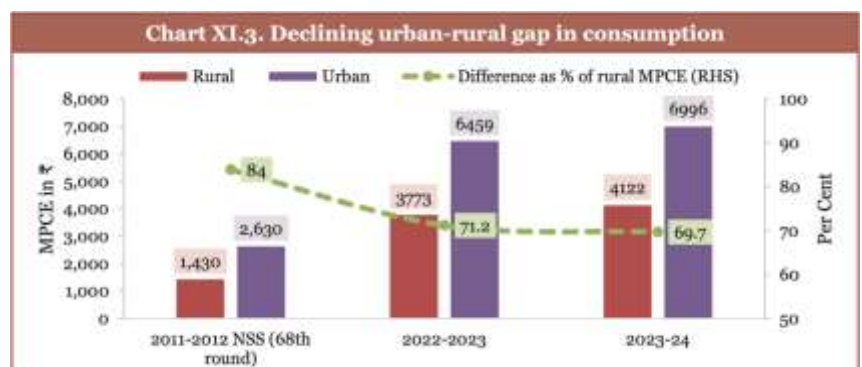
TREND IN SOCIAL SERVICES EXPENDITURE

- Social services expenditure (SSE)** has seen a rising trend since FY17 (past 8 years).
- As a percentage of total expenditure (TE), SSE has increased from **23.3% in FY21** to **26.2% in FY25 (BE)**.
 - During the five years from FY21 (pandemic year) to FY25 (BE), the **SSE grew at a CAGR of 15%**.
 - Expenditure on education** has grown at a **CAGR of 12%** from ₹ 5.8 lakh crore in FY21 to ₹ 9.2 lakh crore in FY25 (BE).
 - Expenditure on health** grew at **CAGR 18%** from ₹ 3.2 lakh crore in FY21 to ₹ 6.1 lakh crore in FY25 (BE).



HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY 2023-24

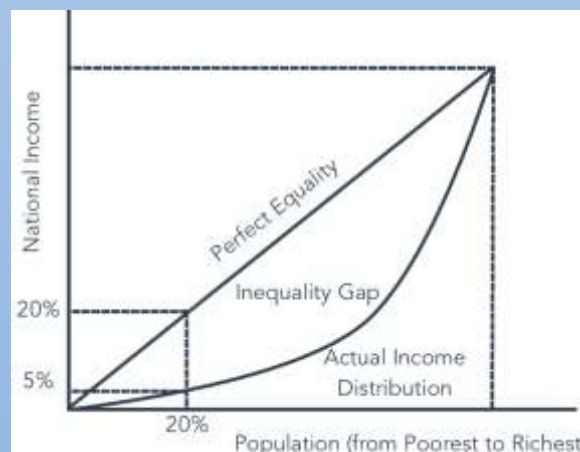
- Narrowing urban-rural gap in consumption expenditure:** The average monthly per capita expenditure (MPCE) in rural and urban India in 2023-24 is estimated at ₹4,122 and ₹6,996, respectively.
 - The **urban-rural gap in MPCE** has declined to **71% in 2022-23** from **84% in 2011-12**. It has further come down to **70% in 2023-24**.



- **Reduced inequality:** The **Gini coefficient** improved for rural areas (declined to 0.237 in 2023-24 from 0.266 in 2022-23) and urban areas (declined to 0.284 in 2023-24 from 0.314 in 2022-23).
- **Government policy's role in reducing inequality:** Subsidies, pensions and other direct transfers along with public spending on education and health have helped redistribute income.
 - **Role of Public Distribution System (World Bank Study):** **Food subsidies** constitute the **largest fiscal outlay** in government's social schemes.
 - In 2022-23, Union government spent **6.5%** of its budget on the **PM Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** to provide free and subsidised food rations.
 - 84% of the population has access to a ration card, 74% actively consume food rations vis PDS/PMGKAY.
 - The **market equivalent value** of the **PDS/PMGKAY** subsidy equals **4%** of the (final or post-subsidy) **nominal monthly consumption expenditure per capita (MPCE)**, on average, across all households.

Gini coefficient: It measures the level of **income inequality** in a population. Its value can vary from 0 (perfect equality) to 1 (perfect inequality).

It is derived from the **Lorenz Curve** which shows the distribution of income within a population.



Pradhan Mantri Garib Kalyan Anna Yojana	<ul style="list-style-type: none"> ○ Objective: To provide free food grains to poor and vulnerable sections during crises. ○ 5 kg of food grains per person per month (Rice/Wheat) additional to the existing NFSA (National Food Security Act) entitlement. ○ Beneficiaries: Covers over 80 crore people under NFSA. ○ Includes Priority Households & Antyodaya Anna Yojana (AAY) beneficiaries.
--	---

EDUCATION: TREADING NEW PATHWAYS

- Built on the principle of **education as the foundational pillar of development**, the **National Education Policy 2020 (NEP)** states that it aims to produce engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution.

School Education

- **Government schools** make up **69% of total schools** enrolling 50% of students, while private schools account for 22.5% and enrol 32.6% of students.
- The **NEP 2020** aims for a **100% Gross Enrolment Ratio (GER)** by 2030.
- **Gross Enrolment Ratio (GER):** The GER is **near-universal at the primary (93%)** and the efforts are underway to bridge the gaps at the **secondary (77.4 %)** and **higher secondary level (56.2%)**.

- **School dropouts:** have **steadily declined**, standing at 1.9% for primary, 5.2% for upper primary, and 14.1% for secondary levels.
- **Early Childhood Care and Education:** Initiatives of **National Curriculum for ECCE (Aadharshila)** and the **National Framework for Early Childhood Stimulation (Navchetana)** have been launched.







Building strong foundations through literacy and numeracy

- The NEP 2020 stipulates that foundational literacy and numeracy (FLN) is critical for education and lifelong learning success.
- The **National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)** has been launched to ensure that **every child in the country necessarily attains FLN by the end of Grade 3, by 2026-27.**
- **Other initiatives:**
 - **Peer teaching** where students learn by teaching and supporting their peers.
 - **Ex: Nalli Kali** in Karnataka; **Prerana model of education** in Andhra Pradesh, Maharashtra, Tamil Nadu and Telangana.
 - **Illam Thedi Kalvi Scheme in Tamil Nadu:** It was launched to bridge the education gap brought about by the Covid 19 pandemic and the digital divide.
 - It reduces reliance on internet resources and emphasises on the important of physical classes.

Children with Special Needs (CwSN): Developing a culture of inclusivity

- The **Accessibility Code for Educational Institutions (2024)** examines the physical barriers and information & communication barriers of access to school facilities for CwSN.
- According to the latest **UDISE+ report (2023-24)**, 16.8 lakh CwSN are enrolled at the elementary level, 2.87 lakh at the secondary level, and 1.18 lakh are enrolled at the higher secondary level.

Initiatives for CwSN:

 <p>PMeVidya Series NCERT's 'Teaching learning interventions for inclusive classrooms' promotes inclusive pedagogy with ISL interpreters for accessibility.</p> 	 <p>Inclusive Cell in CBSE Schools To facilitate equitable and barrier free environment and full participation</p> 	 <p>Disability Screening- PRASHAST Covers 21 disabilities, available in 23 languages through a mobile app. Over 10 lakh users and 61.57 lakh screenings completed since 2022.</p> 
<p>Accesible content 4250+ ISL Videos, 10,500-Word ISL Dictionary on DIKSHA, 24/7 educational channel on PM eVidya, and DTH Channels. 377 NCERT Talking Bookson e-Pathshala and third-party TTS apps, and 4048 Audio Chapters on DIKSHA</p>	<p>Inclusive Education National Guidelines and Implementation Framework on Equitable and Inclusive Education (NGIFEIE) (2021-2030) has been developed to provide a roadmap for creating inclusive schools, ensuring no child is left behind.</p>	<p>Capacity Building and Training 5-day capacity-building program for 60 lakh teachers under NISHTHA (2023-24). Additional online training for 15,964 teachers on digital resources and assistive technologies. Module on Inclusive Education for in-service training of general teachers under Samagra Shiksha.</p>

Higher Education

- **Enrollment** in higher education has **increased 26.5%** between 2014-15 and 2021-22.
 - The **GER for the 18-23 age group** also **increased from 23.7% to 28.4%** during this same period.
- The government's goal under NEP 2020 is to **increase GER to 50% by 2035 in higher education**.
- The number of **Indian Institutes of Technology** increased from 16 (2014) to 23 (2023), while **Indian Institutes of Management** grew from 13 (2014) to 20 (2023).
- Total **Higher Education Institutions (HEIs)** increased by **13.8%** from 51,534 in 2014-15 to 58,643 in 2022-23.
- The NEP advocates for autonomy of institutions and '**light but tight**' regulation for the development of multidisciplinary HEIs.
- **Medical education:** The number of candidates aspiring to study MBBS has increased consistently over the years, from around 16 lakh in 2019 to around 24 lakh in 2024.
 - There are **13.86 lakh practitioners of modern medicine** registered as of July, 2024, which converts into current availability for the whole population of the country in the ratio of **1:1263**.
 - The **WHO standard norm of 1:1000** seems to be **attainable by 2030** with a conservative 50,000 doctors being licensed every year till 2030.
 - **Challenges to medical education:**
 - **Affordability** (₹60 lakh to one crore or more fees in private sector)
 - **Geographical reach** (51% of undergraduate seats and 49% of post-graduate seats are in the southern states)
 - Other issues include specialisations being skewed, low remuneration, brain drain etc.
 - The **OECD countries** reported in 2021 that there were **close to 19,000 physicians from India** in their workforce and **migration in 2021 alone was over 2800 physicians**.

Schemes and Initiatives for Education

Digital Infrastructure for Knowledge Sharing (DIKSHA)	<ul style="list-style-type: none"> ○ Objective: To provide a digital learning platform for teachers and students across India. ○ It offers e-content in multiple Indian languages. ○ Part of PM eVIDYA initiative under the National Education Policy (NEP) 2020.
Strengthening Teaching-Learning and Results for States (STARS)	<ul style="list-style-type: none"> ○ Objective: To improve school education quality, governance, and learning outcomes. ○ Funded by: World Bank loan: \$500 million (~₹3,700 crores), Government of India and participating states.
Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH)	<ul style="list-style-type: none"> ○ It is a proposed under the National Education Policy 2020. ○ Objective: To set up a National Assessment Centre for improving student learning assessment and evaluation standards. ○ Implementing Body: National Council of Educational

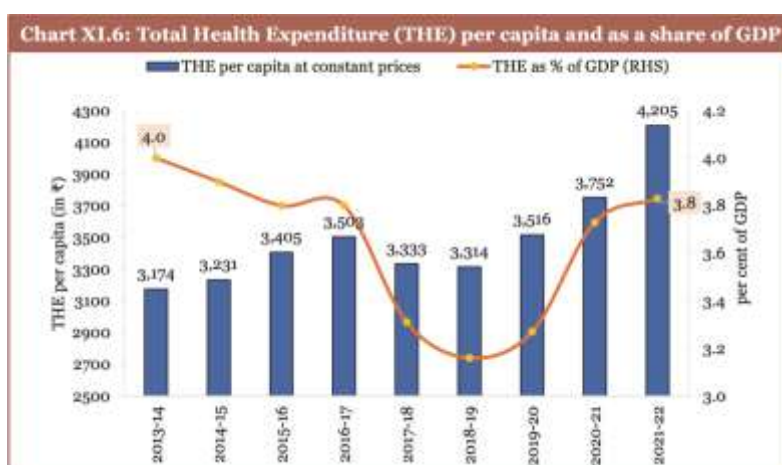
	Research and Training (NCERT).
PM SHRI	<ul style="list-style-type: none"> Objective: To develop "model schools" based on the National Education Policy (NEP) 2020. Target: Establish and upgrade over 14,500 schools across India as PM SHRI Schools. Agency: Ministry of Education
Understanding of Lifelong Learning for All in Society (ULLAS)	<ul style="list-style-type: none"> The ULLAS (Understanding of Lifelong Learning for All in Society) scheme, also known as the Nav Bharat Saaksharta Karyakram or New India Literacy Programme (NILP), is a centrally sponsored initiative launched by the Government of India for the period 2022-2027. It aims to empower adults aged 15 years and above who missed formal schooling, enabling them to integrate into society and contribute to the nation's growth.
PM POSHAN	<ul style="list-style-type: none"> Objective: To provide nutritious meals to school children and improve their health, education, and overall development.
Navchetana	<ul style="list-style-type: none"> Focuses on holistic development for children from birth to three years, offering 140 age-specific activities through a 36-month stimulation calendar. It emphasises the inclusion of differently-abled children, maternal mental health, and "Garbh Sanskar" (practices during pregnancy).
Aadharshila	<ul style="list-style-type: none"> Promotes play-based learning with over 130 activities for children aged three to six years that support child-led and educator-led learning. It aims to lay a strong foundation for lifelong learning, aligning with the National Curriculum Framework for Foundational Stage 2022.
NIPUN Bharat (National Initiative for Proficiency in Reading with Understanding and Numeracy)	<ul style="list-style-type: none"> Objective: To ensure Foundational Literacy and Numeracy (FLN) for all children by Grade 3 by 2026-27. By Ministry of Education
Tim Tim Tare	<ul style="list-style-type: none"> It is a pioneering initiative that aims to impart essential life skills to adolescent students across India. Built on the World Health Organization's (WHO) Life Skills Framework, TTT addresses a wide range of 16 core life skills (such as empathy, critical thinking, etiquette, time management, etc).
SWAYAM (Study Webs of Active Learning for Young Aspiring Minds)	<ul style="list-style-type: none"> Objective: To provide free online courses for students, teachers, and professionals across India. It involves top institutions in providing Massive Open Online Courses.
Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)	<ul style="list-style-type: none"> Objective: To make at least one person per rural household digitally literate.

PM e-Vidya	<ul style="list-style-type: none"> Objective: To provide multi-mode access to digital education for students across India, especially during and after the COVID-19 pandemic.
National Apprenticeship Promotion Scheme	<ul style="list-style-type: none"> Objective: To promote apprenticeship training and increase industry participation in skill development. Financial Incentives: 25% of the stipend (up to ₹1,500 per month) per apprentice is shared by the government. Reimbursement of ₹7,500 per apprentice for basic training costs. Ministry of Skill Development and Entrepreneurship
Atal Innovation Mission	<ul style="list-style-type: none"> Launched by NITI Aayog. Objective: To promote innovation and entrepreneurship across India, especially among students and startups. Key Initiatives under AIM: <ol style="list-style-type: none"> Atal Tinkering Labs (ATLs): Set up in schools to foster STEM-based innovation among students. Provides robotics kits, 3D printers, and IoT tools for hands-on learning. Atal Incubation Centers (AICs): Supports startups and entrepreneurs by providing mentorship, funding, and infrastructure. Atal Community Innovation Centers (ACICs): Encourages innovation in rural and underserved regions. Atal New India Challenges (ANICs): Promotes problem-solving innovations for national development. Mentor India Network: Connects experts and professionals with students and startups.

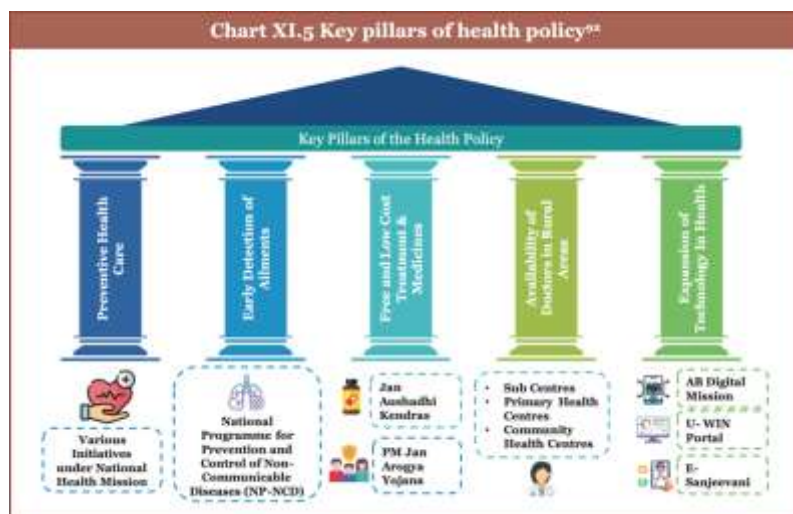
TOWARDS A HEALTHY NATION

Estimates of Health Accounts

- The **Total Health Expenditure (THE)** in FY22 is estimated to be **3.8% of GDP**.
- THE per capita (at constant prices) has shown an **increasing trend since FY19** (past 5 years).
- In THE, the share of **Government Health Expenditure (GHE)** has **increased from 29% to 48%**.
- The share of **Out of Pocket Expenditure (OOPE)** in THE has **declined from 62.6% to 39.4%**.



- **Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana:** played a decisive role in the significant reduction in Out of Pocket Expenditure (OOPE).
 - It is the world's largest health assurance scheme, offering **annual hospitalisation benefits of up to ₹5 lakh per family for secondary and tertiary care.**



benefits of up to ₹5 lakh per family for secondary and tertiary care.

- In 2024, the scheme was expanded to include senior citizens aged 70 and above irrespective of socio-economic status.

- **Drones for medicine delivery:** The **World Economic Forum** launched the project '**Medicines from the Sky**' in collaboration with the government of Telangana.

- The The project '**i-DRONE**' (ICMR's Drone Response and

Outreach for North East) was launched under the aegis of the MoHFW in October 2021 with the view to assess the feasibility of using drones to deliver vaccines and medical supplies.

Health Sector Schemes

Ayushman Bharat	<ul style="list-style-type: none"> ○ Launched in 2018, marking a paradigm shift from selective health services to a comprehensive continuum of care, addressing prevention, promotion, and treatment across primary, secondary, and tertiary levels.
PM-Ayushman Bharat Health Infrastructure Mission (ABHIM)	<ul style="list-style-type: none"> ○ Launched by the Ministry of Health and Family Welfare. ○ It is being implemented from FY22 to FY26 with the aim to strengthen the public health infrastructure to fill critical gaps in health infrastructure, surveillance, and health research. ○ Components: <ul style="list-style-type: none"> ○ Development of 17,788 Health & Wellness Centres (HWCs) in rural areas, 11,024 Urban HWCs for better primary healthcare and Integrated Public Health Labs (IPHLs) in 730 districts. ○ Expansion of Critical Care ○ Disease Surveillance and Pandemic Preparedness: <ul style="list-style-type: none"> ▪ National Institution for One Health to study zoonotic diseases. ▪ Regional Research Platforms for monitoring emerging diseases. ▪ 5 New Regional Virology Labs to strengthen diagnostic capacity. ○ Upgradation of biosafety labs.
Free Drugs Service Initiative (FDSI)	<ul style="list-style-type: none"> ○ To reduce OOPE for patients at public health facilities, the government launched the FDSI under the National Health

	<p>Mission (NHM).</p> <ul style="list-style-type: none"> It provides financial support to states/UTs for ensuring the availability of essential drugs. The FDSI ensures drug quality by procuring only from Good Manufacturing Practices (GMP) certified manufacturers and conducting mandatory post-supply testing of medicines. Implemented by Ministry of Health and Family Welfare.
Universal Immunisation Program (UIP)	<ul style="list-style-type: none"> Launched as the Expanded Programme on Immunisation in 1978, it was rebranded as UIP in 1985, extending coverage from urban to rural areas to bridge healthcare disparities. Currently, the UIP offers 11 vaccines free of cost, protecting against 12 vaccine-preventable diseases. <ul style="list-style-type: none"> These include: Tuberculosis, Diphtheria, Pertussis (Whooping Cough), Tetanus, Polio, Measles, Rubella, Hepatitis B, Haemophilus Influenzae type B, Rotavirus Diarrhoea, Pneumococcal Pneumonia & Meningitis and Japanese Encephalitis (in endemic districts). A child who has received Bacille Calmette Guerin (BCG), three doses of Oral Polio Vaccine (OPV), three doses of Pentavalent and one dose of Measles Rubella (MR) by the first year of age is called a fully immunised child. Full immunisation coverage for FY24 was at 93.5% nationally. Implemented by Ministry of Health and Family Welfare.
Pradhan Mantri Bhartiya Janaushadi Pariyojana (PMBJP)	<ul style="list-style-type: none"> Implemented by the Department of Pharmaceuticals, under the Ministry of Chemicals and Fertilizers. To provide affordable medicines and promote generic medicines. Women-Centric Initiatives: Includes Suvidha Sanitary Napkins at ₹1 per pad.
U-WIN portal	<ul style="list-style-type: none"> It is a portal for digitising vaccination records for pregnant women and children up to 16 years under the UIP. It also generates QR-based e-vaccination certificates and facilitates the creation of Ayushman Bharat Health Accounts (ABHA). It is accessible in 11 regional languages.
E-Sanjeevani	<ul style="list-style-type: none"> It is the National Telemedicine Service that has emerged as the world's largest telemedicine implementation in primary healthcare.
eSwasthya Dham portal by the Uttarakhand government	<ul style="list-style-type: none"> The portal helps monitor the Char Dham Yatra pilgrim's health parameters and offers a variety of benefits for pilgrims.

- **Mental Health:** A study by the WHO finds that globally, about **12 billion days** are lost annually due to depression and anxiety, amounting to a financial **loss of \$1 trillion.**
 - **Tele-MANAS** offers 24/7 free mental health support.

Impact of lifestyle choices on health

- **Non-communicable diseases:** According to WHO, non-communicable diseases (NCDs) are the reason behind the death of **41 million people** each year, equivalent to **74% of all deaths globally**.
 - 77% of NCD deaths are in low and middle income countries.
- The **proportion of deaths due to NCDs in India increased** from 37.9% in 1990 to 61.8% in 2016.
- **Initiatives taken:**
 - **National Programme for Prevention and Control of NCDs:**
 - **Population Based Screening Initiative:** To enhance early NCD detection, the government launched the PBS initiative targeting individuals aged 30 and above for screening for common NCDs.

RURAL ECONOMY

Rural Development Schemes

Pradhan Mantri Gram Sadak Yojana	<ul style="list-style-type: none"> ○ Aims to provide all-weather road connectivity to unconnected villages. ○ Initially targeted habitations with a population of 500+ in plain areas and 250+ in hilly, tribal, and desert areas. ○ Green Technology: Encourages the use of waste plastic, fly ash, and cold mix technology for construction. ○ Implementing Agency: Ministry of Rural Development ○ 99.6% of the targeted habitations provided connectivity
Pradhan Mantri Awas Yojana-Gramin	<ul style="list-style-type: none"> ○ It aims to provide a pucca house with basic amenities to all houseless families and families living in kutcha and dilapidated houses in rural areas by 2029. ○ Beneficiaries: Selected using SECC (Socio-Economic and Caste Census) 2011 data and then verified by Grama Sabhas. ○ The scheme reserves minimum 60% of targets for SC/ST households, 5% for differently abled and 5% for families affected by natural disasters. ○ Implemented by: Ministry of Rural Development
Mission Amrit Sarovar	<ul style="list-style-type: none"> ○ Aims to develop and rejuvenate 75 water bodies in each district across India. ○ Implemented by Ministry of Rural Development
Jal Jeevan Mission	<ul style="list-style-type: none"> ○ Aims to provide Functional Household Tap Connection (FHTC) to every rural household. ○ Target: 100% tap water coverage in rural India. ○ Goa, Andaman and Nicobar Islands, Dadra & Nagar Haveli and Daman & Diu, Haryana, Telangana, Puducherry, Gujarat, Punjab, Himachal Pradesh, Arunachal Pradesh and Mizoram have attained

	100% tap water coverage under the scheme. ○ Implemented by: Ministry of Jal Shakti
Sansad Adarsh Gram Yojana	○ Aims to develop model villages (Adarsh Grams) through holistic rural development. ○ Each Member of Parliament (MP) adopts a village and works for its development.
Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN)	○ Target Beneficiaries: The mission focuses on 75 PVTG communities residing in 18 states and 1 Union Territory (Andaman & Nicobar Islands). ○ It aims at improving the quality of life of these communities. ○ Implemented by Ministry of Tribal Affairs
SVAMITVA (Survey of Villages Abadi and Mapping with Improved Technology in Village Areas) Scheme	○ It aims to provide rural property owners with official ownership records through modern technology like drone-based mapping . ○ Under the scheme, property cards are issued to villagers to prove ownership. ○ Implemented by: Ministry of Panchayati Raj

Localising SDGs: Powering rural progress

- **SDG localisation** is the process of adapting and customising these goals and translating them into local development plans and strategies that fit the needs, context and priorities of a particular region or locality in coherence with national frameworks (**United Nations, 2024**).
- SDGs localisation is being pursued at the **Gram Panchayat (GP) level through Village Panchayat Development Plans** under **Mission Antyodaya** and the **Transformation of Aspirational Districts Programme (TADP)**, adopted in 2018 with districts as the lowest level of implementation.
- **Indian examples:**
 - **Local Self Government Department**, with technical support from the **Kerala Institute for Local Administration (KILA)**, have developed comprehensive guidelines and processes to incorporate SDGs into local planning.
 - **SDG Coordination Centres (SDGCCs)** in 10 states/UTs, namely Andhra Pradesh, Haryana etc.
 - **SDG Coordination and Acceleration Centres (SDGCACs)** of NITI Aayog.

Other measures towards rural welfare





- **Food, Nutrition, Health, and WASH (FNHW):** DAY-NRLM implements FNHW interventions, focusing on promoting the consumption of produce from nutri-gardens, poultry, small ruminants, and dairy.
- **Social Inclusion and Gender:** State Rural Livelihoods Missions (SRLMs) address issues of child education, early marriage, asset creation for women, and violence against women.
 - **Gender Resource Centres (GRCs)** are being established to address gender issues at the local level, supported by **Gender Point Persons (GPPs)** who sensitise SHG members on gender-based violence and discrimination.

- GPPs are trained by **Gender Community Resource Persons (Gender-CRPs)**, who build capacity in both SHG members and the wider community.
- **Free legal assistance:** provided by **National Legal Services Authority** under the Legal Services Authorities Act 1987.
 - **Designing Innovative Solutions for Holistic Access to Justice in India (DISHA) Scheme:** It is implemented by the **Ministry of Law and Justice** to **enhance access to justice for marginalized and vulnerable groups** by promoting **legal awareness, aid, and empowerment**. It includes:
 - Pre-litigation advice through **Tele-law**
 - Pro bono legal services via **Nyaya Bandhu** programme
 - Promotion of legal literacy through pan-India awareness campaigns
 - **Gram Nyayalayas:** As of October 2024, **313 Gram Nyayalayas** have disposed of over **2.99 lakh cases** from December 2020 to October 2024.
- **The National Social Assistance Programme:** It is a social security programme to provide a basic level of **financial assistance to old age, widows, and disabled persons** as well as to **bereaved households in the event of the death of the breadwinner** belonging to the Below Poverty Line.
 - NSAP caters to **3.09 crore BPL beneficiaries**.

Enhancing Rural Incomes

- **Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM):** It is a poverty alleviation scheme that enables households to **access gainful self-employed and skilled wage employment**.
- It leverages **community resources (social capital)** to build institutions and promote livelihoods, with **trained SHG members serving as CRPs** in various roles like Pashu Sakhi, Krishi Sakhi, Bank Sakhi, Bima Sakhi, CRP-EP, Poshan Sakhi etc.

Table XI.7: Progress under key programme components of DAY-NRLM

Capacity Building	Financial Inclusion	Farm Livelihoods	Non-Farm Livelihoods
 <p>Mobilised 10.05 crore rural poor Households into 90.90 lakh SHGs, 5.96 lakh VOs and 32,439 CLFs in 7,143 blocks of 745 districts</p>	 <p>• 1.37 lakh SHG women members positioned as Banking Correspondent Sakhi.</p> <p>• ₹49,284 crore capitalisation support provided to SHGs.</p> <p>• ₹ 9.85 lakh crore of bank credit accessed by SHG.</p>	 <p>• More than 2.64 crore households have agri-nutri gardens</p> <p>• Around 36,205 Custom Hiring Centres established to help small and marginal farmers hire farm tools and services at a nominal cost.</p> <p>• 4.30 crore Mahila Kisan covered</p>	 <p>• Start-Up Village Entrepreneurship Programme (SVEP): nearly 3.13 lakh enterprises in 280 blocks of 31 States/UTs.</p> <p>• Aajeevika Grameen Express Yojana: 2297 vehicles operational in 26 states connecting remote villages.</p>

- **Mahatma Gandhi National Rural Employment Guarantee Scheme:** It aims at enhancing the livelihood security of households in rural areas of the country by providing **at least 100 days of guaranteed wage employment** in a financial year to **every household whose adult members volunteer to do unskilled manual work**.
 - **Reforms to eliminate leakages:** Geotagging before, during and after the work is done; payments via DBT using Aadhar based payment; setting up of social audit units.
 - **99.98%** of payments are through **National Electronic Fund Management System**.
 - MGNREGS has also helped in **rural asset creation, boosting rural ecological health, rural water management** etc.
 - **Capacity development of workers** is being promoted through initiatives like **Bare Foot Technicians (BFT) and UNNATI skilling project**.
 - **Bare Foot Technicians →** Training conducted by **State Rural Development Departments** in partnership with **National Rural Livelihood Mission (NRLM) and technical institutions**.
 - **Skills Taught:** Surveying and levelling, Measurement of work done, Use of construction materials, Basic knowledge of rural infrastructure projects.
 - **UNNATI → 100 days** of skill training aligned with **National Skills Qualification Framework (NSQF)**.
 - **Convergence with other initiatives:** Nutri-Gardens with NRLM, fodder farms with the Department of Animal Husbandry and Dairying (DAHD), medicinal plantations with the Ministry of Ayush etc.

OUTLOOK

- The Indian economy's growth story emphasises a **welfare-enhancement approach**.
- While significant progress has been made in health and education, through **integration of innovation and technology**, last mile delivery of benefits can be ensured.
- To address learning gaps, innovative teaching methods that prioritise **peer learning, social and emotional development, digital literacy, and life skills** must be adopted.
- Indian policy emphasises preventive healthcare and healthcare access has improved through numerous initiatives such as eSanjeevani, UWIN etc.
- The government's focus on rural infrastructure, housing, and livelihoods reflects a comprehensive **'welfare for all' approach**.
- To attain our demographic dividend, regulatory institutions need to evolve to undertake **trust based regulation** backed up by transparency and disclosure on the part of the regulated.

CHAPTER 12: EMPLOYMENT AND SKILL DEVELOPMENT: EXISTENTIAL PRIORITIES

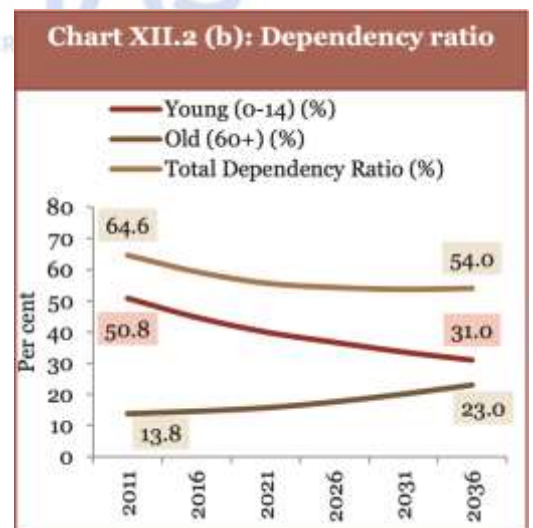


CHAPTER AT A GLANCE

- To fully capitalise on the demographic dividend, India needs to create quality jobs that can offer sustainable livelihoods.
- Against this backdrop, this chapter analyses the employment and skill development trends and challenges in the economy. The first section delves into the state of employment, focusing on the sectoral and gender distribution of the workforce.
- The second section focuses on job creation and outlines the government's actions to enhance employment opportunities.
- The challenge of re-strategising the skills development framework to prepare the youth for evolving industry requirements domestically and internationally is discussed in the third section.

DEMOGRAPHIC TRENDS DRIVING EMPLOYMENT NEEDS

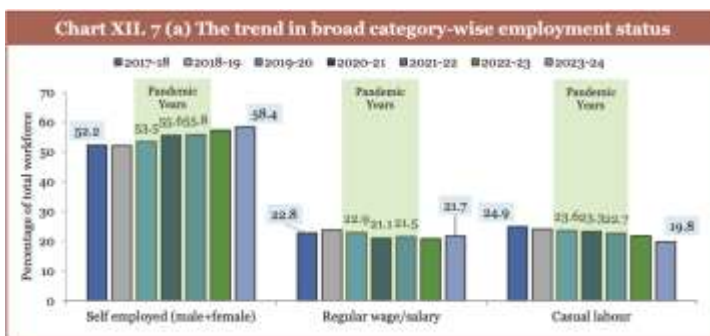
- With around 26 per cent of the population in the age group 10-24 years, India stands at the cusp of a once-in-a-lifetime demographic opportunity.
- In 2014, India ranked as the 10th largest economy in the world. In under a decade, she has surpassed the UK to become the 4th largest and is poised to be the 3rd largest economy after USA and China by 2030.
- **Dependency ratio:** The total dependency ratio has declined from **64.6% in 2011** to **55.7% in 2021** and is projected to fall further to **54.3% by 2026**.
 - **Reasons for decline in dependency:**
 - Falling child dependency ratio due to declining fertility rates.
 - Relatively gradual increase in elderly dependency ratio due to increased life expectancy.
- The Indian economy must generate, on average, **78.5 lakh non-farm jobs annually until 2030** to productively engage its growing working population.



STATE OF EMPLOYMENT

- The 2023-24 annual **Periodic Labour Force Survey (PLFS)** report by the **National Statistical Organisation (NSO)** highlights a **significant post-pandemic recovery** in employment trends across India.
- **Unemployment:** The all-India annual unemployment rate (UR) for individuals aged 15 years and above (usual status) has steadily declined from **6% in 2017-18** to **3.2% in 2023-24**.
 - The **urban UR** has dropped from 6.6% in Q2 FY24 to 6.4% in Q2 FY25.

- **Labour Force Participation:** Between Q2 FY24 and Q2 FY25, the **Labour Force Participation Rate (LFPR)** increased from 49.3% to 50.4% and **Worker to Population Ratio (WPR)** rose from 46% to 47.2%.
- Among the 36 states and union territories, **only 12 have a WPR** (for all ages) below the national average of 43.7%, and 12 fall short of the national LFPR (for all ages) average of 45.1%.
- **Nature of Employment:** The proportion of **self-employed workers** has **risen** from 52.2% (2017-18) to 58.4% (2023-24).
 - **Reason:** Growing entrepreneurial activity and preference for flexible work arrangements.



- Share of workers in **regular salaried jobs** **decreased** from 22.8% to 21.7% between 2017-28 and 2023-24.
- The same period also saw a **decline in casual workers** from 24.9% to 19.8%.
- The **proportion of women in regular wage/salaried employment** has **decreased but more women engage in self-employment** or contribute to household enterprises.
 - Among rural women, the share of "own account workers/employers" surged from 19% in 2017-18 to 31.2% in 2023-24.
- **Initiatives fostering entrepreneurship:**
 - **Mudra Yojana:** To provide **collateral-free loans** to **micro and small enterprises (MSEs)** and **non-corporate businesses**.
 - **Loan Amount:** Up to **₹10 lakh** without any collateral.
 - **Types of loans:**
 - **Shishu** (Up to ₹50,000) → For startups and new businesses.
 - **Kishore** (₹50,000 – ₹5 lakh) → For growing businesses.
 - **Tarun** (₹5 lakh – ₹10 lakh) → For established businesses needing expansion.
 - **Skill India:** To equip youth with **industry-relevant skills** and enhance **employability**. Key schemes under Skill India include:
 - **Pradhan Mantri Kaushal Vikas Yojana** for free short term skill training.
 - **National Apprenticeship Promotion Scheme** for on the job training.

Usual Status v. Current Weekly Status

In India, employment data is measured using different approaches, primarily **Usual Status (US)** and **Current Weekly Status (CWS)**. These are defined by the **Periodic Labour Force Survey (PLFS)**.

- **Usual Status Approach:** A person is classified as **employed or unemployed** based on their activity status **over the last 365 days**.
 - If a person has been engaged in economic activity for a "majority of the year", they are considered employed.
- **Current Weekly Status Approach:** A person is classified as **employed, unemployed, or out of the labour force** based on their activity status in the last 7 days.
 - A person is **employed** if they worked for **at least one hour in any day during the reference week**.
 - Captures seasonal, casual and gig employment trends.

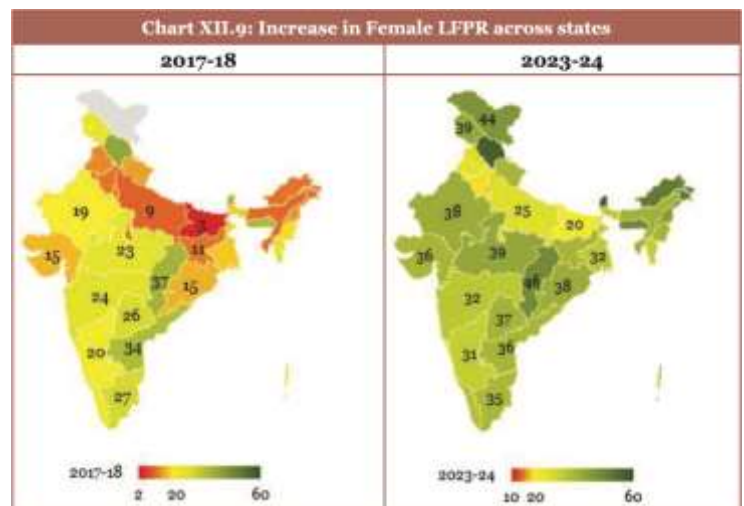
- **Skill Loan Scheme** for vocational training.
- **Jan Shikshan Sansthan** for skill training to **non-literate, neo-literate, and school dropouts** in rural areas.
- **SANKALP & STRIVE**
 - **SANKALP**: Enhances skill training quality through **state-level interventions**.
 - **STRIVE**: Strengthens **industrial training institutes (ITIs)**.
- **Rozgar Mela & National Career Service (NCS)** to organise job fairs.
- **Start-Up India**: To promote **startups, innovation, and entrepreneurship** in India by providing financial, regulatory, and networking support.
 - Private limited companies or registered partnerships with an annual turnover that does not exceed ₹100 crore and less than 10 years old are eligible.
- **Stand-Up India**: To promote **entrepreneurship among SC/ST and women entrepreneurs** by providing **collateral-free loans**.
 - **Target**: At least one SC/ST borrower and one woman borrower per bank branch.

SECTORAL DISTRIBUTION OF THE WORKFORCE

- According to the PLFS 2023-24, the **agriculture sector remains dominant in employment**, with its share rising from **44.1% in 2017-18** to **46.1% in 2023-24**.
- The share of **manufacturing and services** has fallen to **11.4%** and **29.7%** respectively in 2023-24.
- The **share of female workers in agriculture has increased** significantly, from **57.0% in 2017-18** to **64.4% in 2023-24**.

Female Labour Force Participation Rate

- The **female labour force participation rate (FLFPR)** has been **rising for seven years**, i.e., from 23.3% in 2017-18 to **41.7% in 2023-24**.
 - The number of states with less than 20% FLFPR has gone down from twenty to three.
 - **Sikkim** has the highest rate of FLFP at **56.9%**.
 - The **increase in the rural FLFPR** largely **drives the increase in FLFPR**, which rose from **24.6% in 2017-18** to **47.6% in 2023-24**.








Harnessing the power of women entrepreneurs for India's economic future

- **Female participation in economy:**
 - >80% artisans in khadi sector
 - >50% of sericulture practitioners
 - Around 56.1% of handicrafts sector

- 72% of the handloom industry (Handloom Census 2019-20)
- **Low female ownership:** The reins of ownership in entrepreneurship still remain dominantly male-held.
 - Only **22% of MSMEs** are owned by female entrepreneurs.
 - As the size of the enterprise increases from micro to small and then to medium, women's share in ownership drops from 22% to 12% and further to 7% respectively.
 - As per a report on gender diversity, **women hold less than one-quarter of the world's board seats** (23.3% in 2023).
 - Across India Inc., women only held **18.3% of board seats** in 2023.

Box XII.2: Government initiatives to boost female entrepreneurship			
To give a fillip to women's entrepreneurship, various ministries/ departments of the government of India have launched several initiatives, some of which are presented below.			
Ministry of Micro, Small and Medium Enterprises ³⁰			
 Formalisation of Enterprises³¹ 63 per cent of the 2.41 crore enterprises formalised since January 2023 are women-owned.	 Marketing Support³² Women's trade fair participation is fully subsidised.	 PM Employment Guarantee Programme³³ 41 per cent of loans in FY24 were sanctioned to women, with higher subsidies (25–35 per cent) and lower contributions (5 per cent).	 Procurement 3 per cent of procurement by CPSEs is reserved for women-owned enterprises.
 Skill Development Over 21,600 women trained in coir manufacturing in 5 years; free entrepreneurial training is offered.	 ZED Certification³⁴ 100 per cent subsidy on certification for women MSMEs.	 Access to Credit³⁵ Women entrepreneurs receive 90 per cent guarantees (vs. 75 per cent for others) and reduced fees under the Credit Guarantee Scheme. Of 97.68 lakh guarantees approved, 22 per cent are for women.	

Initiatives by Ministry of Skill Development and Entrepreneurship

 SANKALP³⁶ 32,262 women (67 per cent of beneficiaries) trained in entrepreneurship between 2021 to 2024.	
Department for Promotion of Industry and Internal Trade	
 Start-up Support³⁷ 10 per cent of the Fund of Funds for Start-ups is reserved for women.	 Women Entrepreneurship Platform³⁸ Launched in 2018 to aggregate and showcase policies, with NSA awards recognizing women-led start-ups.
Ministry of Food Processing Industries  PM Micro Food Processing Scheme³⁹ SHG members receive ₹40,000 seed capital and 50 per cent branding/marketing grants.	Ministry of Tribal Affairs  Adivasi Mahila Sashaktikaran Yojana⁴⁰ Loans up to ₹2 lakh at 4 per cent interest for ST women.

Ministry of Cooperation

 NCDC Support⁴¹ ₹6,426 crore disbursed for women cooperatives; 25,385 registered cooperatives.	 Nandini Sahakar Scheme 2 per cent interest subvention for innovative cooperative projects.	 Swayam Shakti Sahakar Yojna Working capital loan to support women SHGs.
---	---	--

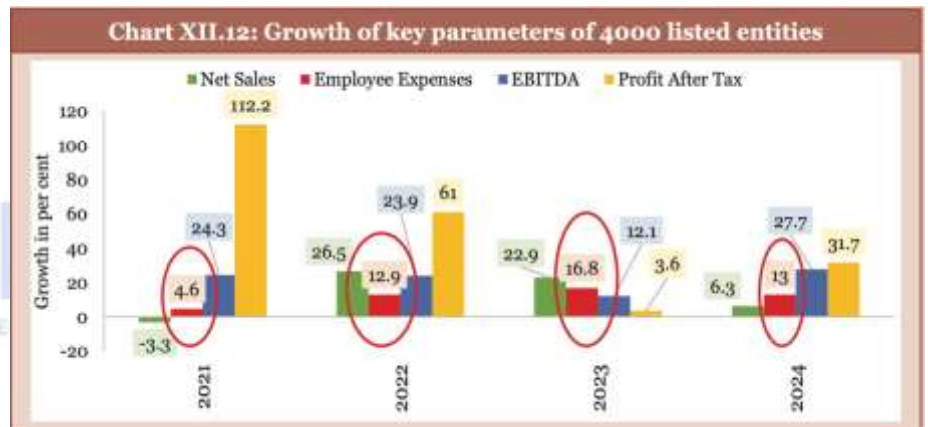
- **Challenges faced by rural women entrepreneurs:** limited business skills, market access, and technology gaps, compounded by a lack of mentorship and networking.

Initiatives taken:

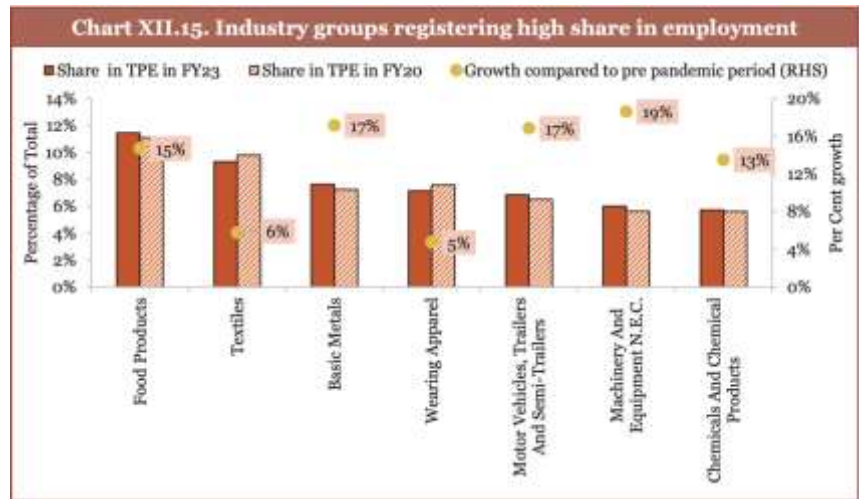
- **Global Alliance for Mass Entrepreneurship (GAME):** supports women led MSMEs with access to markets, credit, and growth opportunities.
- **GAME's Women Economic Empowerment Programme (WEE):** builds replicable models with private partners for **rural e-commerce, social commerce, gig work, and job tech**, enabling women entrepreneurs to participate actively in the **platform economy**.
- **WE Hub - The Women Entrepreneurs Hub** is a good example from the state of **Telangana** - It is India's **first state-led incubator for women entrepreneurs**.

TRENDS IN WAGES AND EARNINGS

- While the average monthly earnings for **regular wage/salaried workers and self-employed workers** grew at a **CAGR of 5%** during the period **2018-19 to 2023-24**, the **daily wage of casual workers** increased at a **CAGR of 9%** during the same period.
- Rural wages:** According to the **Labour Bureau**, in FY25 (April – September 2024), **rural wages rose at above 4%** every month, year on year (YoY).
 - The nominal wage rate in agriculture grew by **5.7% for men** and **7% for women**.
 - Real wage rate** increased by 0.6% for men and **1.8%** for women.
 - In **non-agricultural activities**, real wage growth was **0.4% for men** and **2.6% for women**.
- Wages in unincorporated sector enterprises:** As per the **Annual Survey of Unincorporated Sector Enterprises (ASUSE)** 2023-24, the **average emolument per hired worker rose by 13%** in 2023-24 compared to 2022-23.
 - The survey highlights notable labour market improvements of the non-agricultural unincorporated sectors, with **hired workers increasing from 2.95 crore in 2022-23 to 3.15 crore in 2023-24**, reflecting healthy employment growth.
- Corporate profits and wage share:** Corporate profitability soared to a **15-year peak** in FY24, fuelled by robust growth in financials, energy, and automobiles. Among Nifty 500 companies, the **profit-to-GDP ratio** surged from **2.1% in FY03** to **4.8% in FY24**, the highest since FY08.
- Lagging wages and surging profits:** Profits climbed **22.3% in FY24**, but employment grew by a mere **1.5%**.
 - Employee expenses** rose only **13%** -down from 17% in FY23 - highlighting a sharp focus on cost-cutting over workforce expansion.
 - Wage stagnation is pronounced, particularly at entry-level IT positions.
 - The **disproportionate rise in corporate profits**—predominantly among large firms—raises **concerns about income inequality**.
- Employment in factories:** The **Annual Survey of Industries** for FY23 shows more than **7% increase** in employment over FY22. This is an addition of over **22 lakh jobs** in FY23 over FY19 (pre-pandemic level).
 - The manufacturing sector had **lost approximately 5 lakh jobs during the pandemic** in FY21.
- The number of **large factories** (employing more than 100 workers) saw a **7% growth** in FY23 compared to FY22 while **small factories** (less than 100 workers) experienced an increase of 2%.
 - Large factories** account for **22% of all operational factories** and employ about **80% of the total workers**.



- **Seven industries** in the manufacturing sector contribute to around **54% of the total employment** - food products, textiles, basic metals, wearing apparel, motor vehicles, trailers and semi-trailers, machinery and equipment N.E.C., and chemicals and chemical products.



- **Growing formalisation:** Net additions to EPFO subscriptions have more than doubled, rising from 61 lakh in FY19 to 131 lakh in FY24.
- EPFO membership stands at **32.7 crore** as of March 2024, compared to **29.9 crore** as of March 2023.
- Over the years, **expert services have consistently led in formal job creation**, as reflected in net payroll additions.
- With nearly **61% of net payroll addition** coming from **less than 29 years** of age, new jobs in the organised sector are mainly going to the youth.
- **eShram portal:** It was launched by the Ministry of Labour and Employment (MoLE) to recognise unorganised workers. The portal helps register and support unorganised workers by providing them with a Universal Account Number (UAN) and the creation of a comprehensive National Database of Unorganised Workers (NDUW).
 - As of 31 December 2024, **over 30.51 crore unorganised workers** have already registered on the eShram portal.
 - Welfare schemes are being integrated with the portal to provide a **one stop solution** to workers.

JOB CREATION: ACTION TOWARDS ENHANCED EMPLOYMENT OPPORTUNITIES

- **Regulation for Ease of Doing Business:** To simplify the labour laws, **29 existing Central laws** have been rationalised and amalgamated into **4 Labour Codes**:
 1. The Code on Wages 2019
 2. The Code on Social Security 2020
 3. The Industrial Relations Code 2020
 4. The Occupational Safety, Health and Working Conditions Code 2020
- **Occupational Safety and Health (OSH):** Improving working conditions and implementing OSH directly contributes to worker productivity and improves the GDP.
 - India's **manufacturing (11.4 per cent of total workforce)** and **construction (12 per cent of total workforce)** workforce are prone to workplace accidents.
 - Data from the Directorate General Factory Advice Service & Labour Institute (DGFASLI) shows a decline in reported industrial injuries since 2015.
 - **National Guidelines for Responsible Business Conduct (NGRBC)** emphasise the role of businesses in ensuring OSH in supply chains.

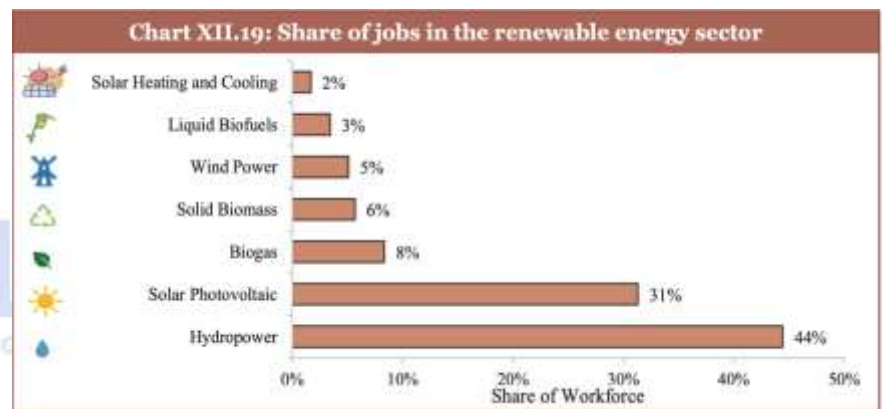
- **Ensuring OSH:** Utilising wearable technology in accident prone areas, adopting IoT for risk detection in MSMEs, virtual reality training modules, blockchain technology for tracking of claims, incentives such as safety awards, tax breaks and machine safety subsidy etc.

Driving employment through the digital economy

- According to the **Ministry of Electronics and Information Technology (MeitY)**, India's digital economy is projected to **surpass USD one trillion by 2025**.
- According to **NITI Aayog**, the gig workforce is projected to reach **23.5 crore by 2029-30**, comprising **6.7% of the non-agricultural workforce** and **4.1% of total livelihoods**.
- **Digital technology's dual effect on employment:** Automation replaces human labour through a **displacement effect** but also boosts demand for new roles through a **reinstatement effect** in both automated and complementary sectors.

Building a green workforce

- The efforts to mitigate the impact of climate change by adopting green technologies and transitioning to greener energy alternatives are expected to witness a strong job-creation effect.
- According to the 2024 Annual Review by the International Renewable Energy Agency (IRENA), the **total number of jobs in the renewable energy sector in India** reached an estimated **1.02 million in 2023**.
- **Hydropower** is the **largest employer in India's renewable sector**, providing approximately 453,000 jobs and accounting for **20% of the global total**, ranking second only to China.
- **Renewable energy as an opportunity for women:**
 - **Solar Urja Lamps project** in Dungarpur, Rajasthan - **Women's self-help group (SHG)** members were trained and mentored to become **solar entrepreneurs**. The project resulted in the **employment of 83 women**, the establishment of **five solar shops**, and the assembly, sale, and maintenance of **40,000 solar lamps**.
 - **Global Energy Alliance for People and Planet (GEAPP)** – works closely with the **National Rural Livelihoods Mission** to design and develop programmes to provide reliable clean energy access leading to improved livelihood for women enterprises.
 - GEAPP in collaboration with the rural livelihood mission of UP rolled out a programme targeting **solarising 50,000 women enterprises** in 2025.
 - **Decentralised Renewable Energy (DRE) for women empowerment:** Hundreds of women farmers in North Karnataka are advancing millet cultivation and local consumption through a solar-powered processing unit; *Boipariguda-Sabujima* FPO under Odisha's Millet Mission has adopted solar-powered processing.



SKILL DEVELOPMENT: UPSKILLING, RESKILLING AND NEW SKILLING

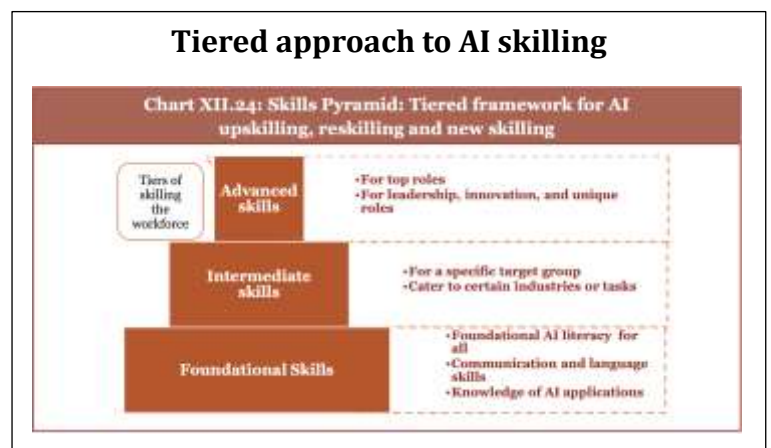
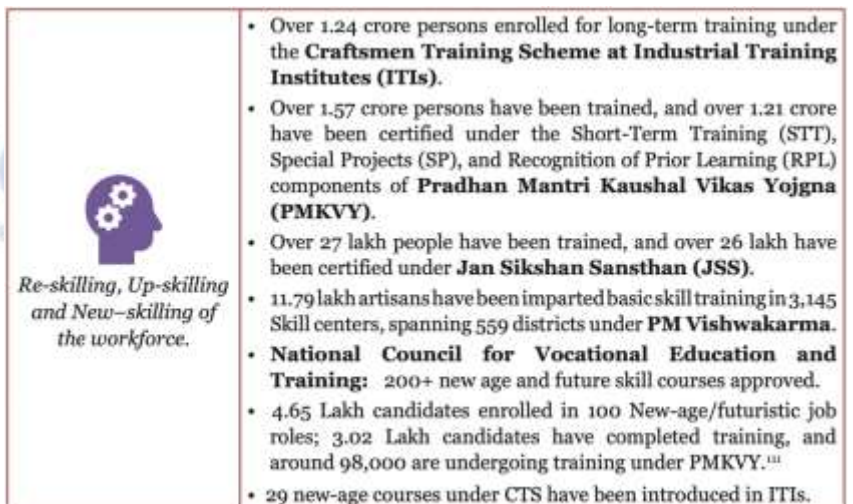
India's skill and job landscape

- The Periodic Labour Force Survey 2023-24 shows that **90.2%** of the workforce has **equivalent to or less than a secondary level of education**.
- As a result, **88.2%** of the workforce is engaged in low competency occupations.
- While **4.2% of the workforce**, equipped with advanced education and specialised skills, earns between **₹4 lakh and ₹8 lakh annually**, about **46% earn less than ₹1 lakh**, predominantly comprising low to semi-skilled workers.
- **65.3% of the workforce** received **no form of vocational training**.
- Over **53% of graduates** and **36% of postgraduates** are being underemployed in roles below their educational qualification.



India's skill development initiatives

- **Skill India Digital Hub (SIDH)** is a transformative digital portal to **democratise skill development** with easy access to a diverse array of courses tailored to the demands of the industry.
- The **NEP 2020** aims to ensure that **by 2025, at least 50% of students** in school and higher education **gain exposure to skill education**.
- **FutureSkills Prime:** Launched by the IT-ITeS Sector Skill Council, in partnership with MeitY, it is a platform which aims at **re-skilling/ up-skilling IT professionals** in **10 new/emerging technologies** including AI.
- **Prime Minister's Internship Scheme:** Scheme for internship in **500 top companies to one crore youth in five years**.
 - This programme provides **12 months of real-life business exposure**, with an **internship allowance of ₹5,000 per month** (jointly funded by the government and the company) and one-time assistance of ₹6,000.
 - **Eligibility:** Those aged **21-24 years** with educational qualifications ranging from matriculate to graduate (excluding IIT grads, CAs etc.) who are not employed full time or engaged in full time education.



- Companies can use their **corporate social responsibility (CSR) funds** for expenditure under the scheme.

International mobility of skilled workers

- According to the **World Economic Forum (WEF)**, there is likely to be a demand for **97 million new jobs worldwide by 2025**.

Measures to facilitate skilled labour mobility internationally:





- Bilateral Partnerships through Migration and Mobility Partnership Agreements (MMPA), Labour Mobility Agreements (LMA) and Labour Welfare Agreements.**
- MMPAs and LMAs with eight countries, including Australia, Israel, Denmark, Italy, Germany, the UK, Japan, and Austria, focus on **vocational training and skill alignment**.
- Ministry of Skill Development and Entrepreneurship's **G2G**

Memorandums of Understanding (MoUs) for enhanced global mobility and recognition of Indian qualifications abroad.

- National Skills Qualification Framework** provides for curriculum development that aligns with international standards, providing for mutual recognition of qualifications.
- Skill India International Centres** as hubs for global job seekers.
- Pre-Departure Orientation Training (PDOT)** programme provides free 8-hour training to migrant workers on destination countries' cultural, legal, and welfare aspects.
- The **MEA's e-Migrate platform** streamlines emigration by connecting stakeholders and offering services like online registration, PDOT, and grievance redressal.

CONCLUSION

- India has seen good growth in employment in recent years, as highlighted by labour market indicators that show strong signs of post-pandemic recovery and increased formalisation of the economy.
- By simplifying compliance, fostering labour flexibility, and promoting worker welfare, labour reforms have created an enabling environment that balances ease of doing business with the protection of worker rights.
- Together, these measures foster a **'virtuous cycle of job creation,'** supporting sustainable employment growth and economic inclusivity.

 <p>Skilling Initiatives for Women Workers</p>	<ul style="list-style-type: none"> The share of women among those trained under PMKVY has increased from 42.7 per cent in 2015-16 to 58.0 per cent 2024-25. Under JSS, the special focus lies on the disadvantaged group, including women. Thus, women constitute about 82 per cent of the total beneficiaries in the JSS scheme. In the long-term ecosystem, i.e., in ITIs and National Skill Training Institutes (NSTIs), women's participation has increased from 9.8 per cent in 2015-16 to 13.3 per cent in 2023-24. Participation of women has increased from 7.7 per cent in 2016-17 to 22.8 per cent in 2024-25 (up to 31 October 2024) under the National Apprenticeship Promotion Scheme (NAPS).
 <p>Industry collaboration to meet the demands of the employer</p>	<ul style="list-style-type: none"> The number of 'Establishments' registered on NAPS portal for taking up Apprentices has risen from 17,608 in 2016-17 to 2.38 lakh till 31 October 2024. A total of 37.94 lakh apprentices have been engaged from 2016-17 to 2024-25 (up to 31 October 2024). The New ITI Upgradation Scheme has been announced in the Union Budget 2024 to upgrade 1,000 ITIs in the hub and spoke arrangements in collaboration with the state governments and industry. <ul style="list-style-type: none"> 20 lakh youth will be skilled over a 5-year period in courses aligned to the human capital requirement of industries.
 <p>Credit Facilitation</p>	<p>The modified Credit Guarantee Fund Scheme for Skill Development (CGFSSD), or Model Skill Loan Scheme, was notified by the MSDE on 9 July 2024. Key changes include.</p> <ul style="list-style-type: none"> The maximum loan limit was raised to ₹7.5 lakh (from ₹1.5 lakh). Guarantee coverage now varies: 75 per cent for loans up to ₹4 lakh; 70 per cent for ₹4-7.5 lakh loans. Eligible lenders expanded to include NBFCs, NBFC-MFIs, and Small Finance Banks. Course coverage broadened to include non-NSQF-aligned courses via the Skill India Digital Hub (SIDH).
 <p>Entrepreneurship Training</p>	<ul style="list-style-type: none"> 3,21,258 beneficiaries provided training from April 2018 to March 2024 by National Institute for Entrepreneurship and Small Business Development (NIESBUD). Indian Institute of Entrepreneurship (IIE), Guwahati, provided training and handholding services to 1,43,470 beneficiaries from April 2018 to March 2024.

CHAPTER 13: LABOUR IN THE AI ERA: CRISIS OR CATALYST?



CHAPTER AT A GLANCE

- To The rapid advancement of artificial intelligence (AI) presents both unprecedented opportunities and significant challenges for labour markets worldwide.
- The speed of research and development in AI is outpacing the regulatory and ethical frameworks needed to manage its risks.
- In this context, the final chapter of the survey aims to understand the challenges and opportunities that AI presents to the labour market.
- For this it looks into the adverse effects that emerged during previous technological revolutions and tries to identify how these risks can be minimised through creation of social infrastructure.

STATUS OF AI IN THE WORLD

- The **number of AI patents** granted globally **increased 62.7%** between 2021 and 2022.
- The **annual global private investments in Generative AI** surged from approximately **USD 3 billion** in 2022 to **USD 25.2 billion** by the end of 2023.
- Between 2021 and 2023, global corporate investments in all types of AI totalled **USD 761 billion**.

REVOLUTIONS AND RIPPLES

- **Disruptive effects:** The **International Monetary Fund (IMF)** states that AI poses **risks of job displacements**, notably for emerging markets and developing economies, which are not well placed to leverage the technology relative to the advanced economies.
- The **International Labour Organisation (ILO)** estimates that nearly **75 million jobs** globally are at **complete risk of automation** due to AI.
- **Ernst & Young** states that **57% of occupations** in emerging countries can be expected to be affected by higher Generative AI adoption.
- Firms have increased AI skill demand and these jobs pay 13-17% salary premium over baseline estimates.
- **NASSCOM** estimates that the **Indian AI market will grow at 25-35% CAGR by 2027**.
- **Challenges associated with technological revolutions:** Previous technological revolutions

Engels' pause

It is a term coined by historian **Robert C. Allen** to describe the period from **1790 to 1840**, when **British working-class wages stagnated** and **per-capita gross domestic product expanded rapidly** during a **technological upheaval**.

Although the economy was growing the benefits did not percolate to the workers as real wages did not grow. This led to accumulation of wealth by the owners of capital and **increased inequalities**.



show the negative consequences of the pursuit of productivity and profits:

- Technological shifts **displace large segments of the workforce**. In the time that it takes to reaccommodate and re-employ them, **income inequality** rises.
- **Economic disparity**: Workers may not immediately benefit from productivity and profitability gains (Eg: Post industrial revolution, wages lagged).
- **Transitions can be protracted** requiring decades for displaced workers to find alternative livelihoods (**Eg: Engels' pause**).
- India is particularly susceptible to such technological disruptions being a **labour surplus country** and a majorly **services driven economy**.

THE NEED FOR ROBUST INSTITUTIONS

- **Minimising the negative effects of creative destruction: Inclusive Institutions** can promote broad participation in the gains from innovation and create the conditions for sustained economic growth and prosperity.
- **Andrew Haldane** splits the institutional requirement along two broad categories: **enabling institutions and insuring institutions**.
 - **Enabling Institutions** are focused on **equipping the workforce with the necessary skills** needed to adapt and thrive in a shifting landscape.
 - **Insuring Institutions** are intended to **provide a soft-landing** for workers whose finances have been hit and whose well-being has been affected during the transitional period.
 - Insuring Institutions **build safety nets, protect worker rights, provide finances, housing** (the emergence of the Young Men's Christian Association during the 19th century), and **social and emotional support** during periods of displacement.
- To this, the Survey adds a third category of institutions: **Stewarding Institutions**.
 - **Stewarding institutions** will have to be responsible for **designing an approach that delicately balances public welfare without stifling innovation**.

AI'S REAL WORLD CHALLENGES

- **Breakthrough v. Practicality**: Although it is a breakthrough technology (one that overcomes barriers enabling new possibilities) it lacks practicality due to high cost, lack of scalability, difficulty in providing measurable benefits etc.
 - It is not yet a **General Purpose Technology**.
 - A major drawback is **AI hallucination** where an AI system generates **false, misleading, or nonsensical information** that appears plausible but is not based on real data.
- **Reliability**: AI remains unreliable due to training gaps, bias, lack of inherent capacity for accountability etc.
- **Lack of supporting infrastructure** in terms of raw data, technological resources, human expertise and organisational readiness.
- **Resource challenge**: AI is extremely costly at present and requires scarce resources with competing priorities such as rare earths, energy etc.

General Purpose Technology (GPT) refers to a technology that has widespread applications across multiple sectors, drives long-term economic growth, and leads to significant productivity improvements.

- A recently published Bloomberg analysis estimated that **powering Data Centres for AI** around the world is expected to reach up to **1580 terawatt-hours**, which is **as much electricity as India consumes**.
- Cooling is estimated to need **over a billion litres of water** per day.

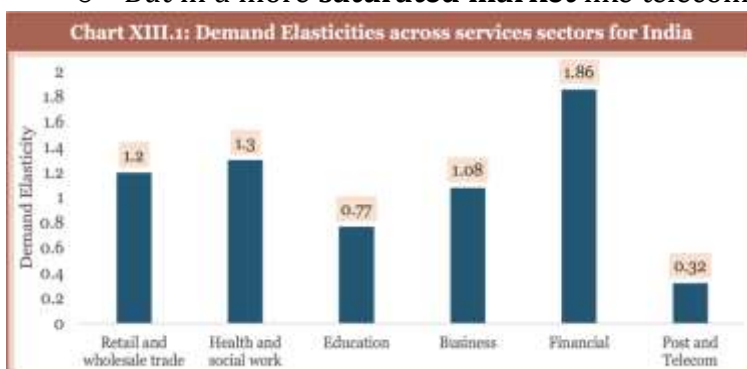
AI AND INDIA: ARE THERE OPPORTUNITIES?

- Technology does not always have to displace labour but instead can be put to use in augmenting the productivity of the workforce.
- **Labour Market Evolution:** Studies suggest a positive association between AI enabled automation and employment share of high-skilled workers – with a predicted increase in the range of 3.1 to 6.6% over the course of a decade.
- **Reduction in skill inequality:** Implementing AI as a tool helps bridge the skill gap by allowing low-skilled workers to produce outputs closer in quality to the work high skilled workers do without any tools.
- **Augmenting India's Services Sector:** A study analysing the effects of AI/ML implementation in Europe found that **youth and high skilled workers** were most capable of understanding and adapting to technological changes.
 - As basic knowledge creation gets automated, skills such as **critical thinking, higher degrees of creativity, and the capacity for more specialised knowledge** become important shifting focus to the **quality of the workforce**.
- **Demand elasticity, automation and employment:** Technological change is **only labour displacing if the demand for the product/service offered by the industry is saturated**. If the market has large, unmet demands, then labour augmented by machines increases productivity and employment.

Demand elasticity: Demand elasticity measures how the **quantity demanded** of a good or service changes in response to a **change in price, income, or other factors**.

Reinstatement Effect: The **reinstatement effect** refers to the phenomenon where **jobs that were initially displaced by disruptive technologies eventually reappear in modified forms**, often requiring different skill sets.

 - New technology should increase employment if **demand elasticity** for the sector is high.
 - In highly demand-elastic markets, the **reinstatement effect** counterbalances the **displacement effect** caused by automation.
- **Implication for services in India:** Demand elasticities are high for sectors such as financial services, trade services, health and social work and business services.
- But in a more **saturated market** like telecom, automation could become a labour displacing force.



- **Augmented Intelligence:** It is one that expands the workforce to **accommodate both humans and machines**, with the aim of **improving humanity** while also bringing about a

greater level of efficiency in how we perform our jobs.

CONCLUSION

- AI represents the human drive for improvement. Through capacity building and institution building, India can capitalise on the opportunities that lie ahead.
- Structural changes in education, safety nets for workers and improved regulatory frameworks are the need of the hour.
- A tripartite compact between the government, private sector and academia can ensure that the gains from AI-driven productivity are widely distributed, taking us in the direction of the ideal inclusive growth strategy.

