

Summary of the **ECONOMIC** *Survey* **2024-25**



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ECONOMIC SURVEY SUMMARY 2024-25

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NOTE

Dear Students,

To further improve the understanding of the Economic Survey, following additions have been made with the goal of providing a more comprehensive and accessible understanding of the Economic Survey:



Know Your Economic Survey: It provides an overview of what the Economic Survey is and its importance. It provides strong foundation for further exploration of the Economic Survey.



Precap: It provides a snapshot at the start of every chapter highlighting the the ideas and content discussed in the chapter.



What does the Budget Say?: This section analyses and explains the relationship between the Economic Survey and the Union Budget. This will help the student understand how the Survey provides a broader economic context for the Budget.



Glossary: The collection of key terms used in the chapter (at the end of every chapter).



Quiz and Mains Questions: To enhance the learnings and understanding from each chapter, a Quiz & Mains Questions have been added at the end of the chapters. The answers to the MCQs are given at the end of the document.

फाउंडेशन कोर्स सामान्य अध्ययन

प्रारंभिक एवं मुख्य परीक्षा 2026

इनोवेटिव क्लासरूम प्रोग्राम

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- प्री फाउंडेशन कक्षाएं
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
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- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

नोट: ऑनलाइन छात्र हमारे पाठ्यक्रम की लाइव वीडियो कक्षाएं अपने घर पर ऑनलाइन प्लेटफॉर्म पर देख सकते हैं। छात्र लाइव चैट विकल्प के माध्यम से कक्षा के दौरान अपने संदेह और विषय संबंधी प्रश्न पूछ सकते हैं। वे अपने संदेह और प्रश्न नोट भी कर सकते हैं और दिल्ली केंद्र में हमारे कक्षा सलाहकार को बता सकते हैं और हम फोन/मेल के माध्यम से प्रश्नों का उत्तर देंगे।

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Know your Economic Survey 2024-25

KNOW YOUR ECONOMIC SURVEY



Who Prepares It?

- ◉ Economic Division of the **Department of Economic Affairs (DEA), Ministry of Finance**
- ◉ Under the guidance of **Chief Economic Advisor (CEA)**

WHAT IS ECONOMIC SURVEY?



It presents a **comprehensive analysis of India's growth trajectory** including the global optimism towards nation, focus on infrastructure, growth in agriculture, industries and emphasis on futuristic sectors.



PRESENTATION & PREPARATION

- ◉ Released **a day before Budget** presentation.
- ◉ It **summarizes the annual economic development** in the country and sketches out **short- and medium-term prospects** of the economy.
- ◉ It is **presented** to the Parliament **ahead of the Budget for the ensuing year**.



POLICY PERSPECTIVE TO BUDGET

- ◉ As a **flagship document** of the Ministry of Finance, the Economic Survey provides detailed **statistical data covering all aspects of the economy**.
- ◉ It is the **authoritative guide to the Indian economy** and is usually seen to provide **policy perspective for the Union Budget**.



ECONOMIC LANDSCAPE

- ◉ The Economic Survey **brings out the economic trends** in the country which facilitates a better appreciation of the mobilization of resources and their allocation in the Budget.
- ◉ The Survey analyses the **trends in agricultural and industrial production, infrastructure, employment, money supply, trade, forex reserves and other relevant economic factors** which have a bearing on the Budget.

HOW IS ECONOMIC SURVEY RELATED TO THE BUDGET?

Chapter 1: State of the economy: Getting back into the fast lane

Introduction

- **Global economic conditions** are shaped by changing growth dynamics, fluctuating commodity prices, and evolving monetary policies, which influence domestic inflation, trade balances, and capital flows.
- At present, this **interconnectedness** is complicated by unusual levels of geopolitical tensions, supply chain disruptions, and climate-related shocks.

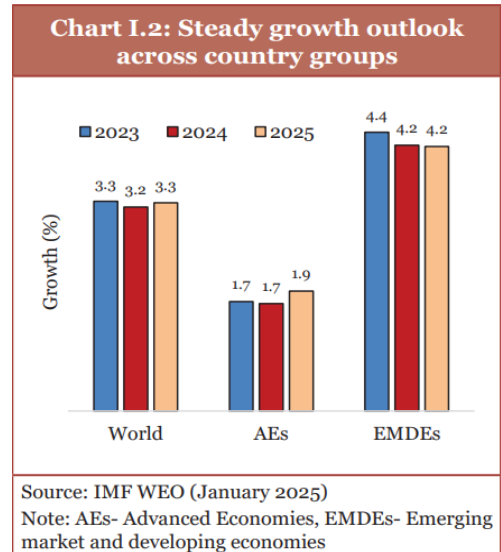
Chapter Precap

<p>Global economic scenario</p> <ul style="list-style-type: none"> • Steady global growth • Services sector growth steady • Inflation rates across economies have trended downward steadily • Easing monetary policy stances amidst divergent expectations. 	<p>Domestic economy</p> <ul style="list-style-type: none"> • Resilient Economic Recovery Post-Pandemic • Improved agricultural prospects in FY25 • Manufacturing sector growth moderates • Robust growth in the services sector
<p>Economy characterized by stability and inclusivity</p> <ul style="list-style-type: none"> • Prudent fiscal management • Inflation – a combination of low and stable core inflation with volatile food prices • External sector stability safeguarded by services trade and record remittances 	<p>Employment trends</p> <ul style="list-style-type: none"> • Unemployment rate for individuals aged 15 years and above has steadily declined. • The formal sector in India has seen significant growth. • The integration of AI into India's labour market

Global economic scenario

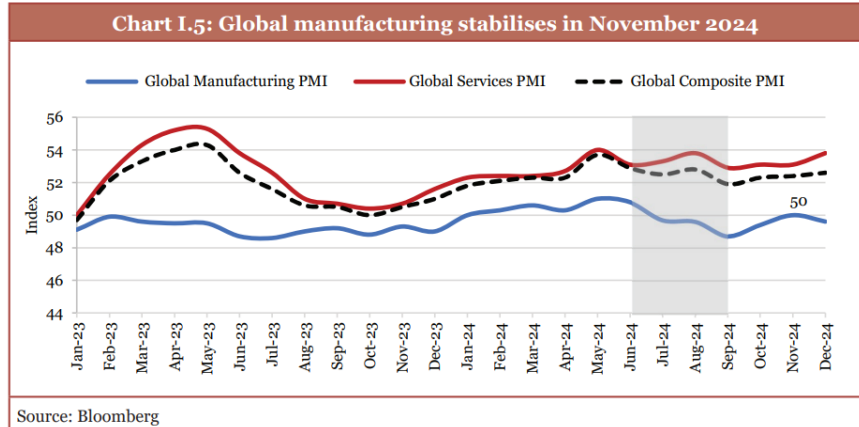
Steady global growth and varied regional dynamics growth

- The International Monetary Fund (IMF) has projected growth of **3.2 % and 3.3 %** for **2024** and **2025**, respectively.
- Over the **next 5 years**, global growth is expected to average around **3.2%**, which is modest by historical standards.
- Despite higher interest rates, **advanced economies (AEs)** witnessed stable growth in the **first half** of 2024. This was on account of **moderating inflation** and sustained employment and consumption.



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 manufacturing PMI indicated contraction.



Inflationary pressures ease, but risks of synchronised price pressures persist

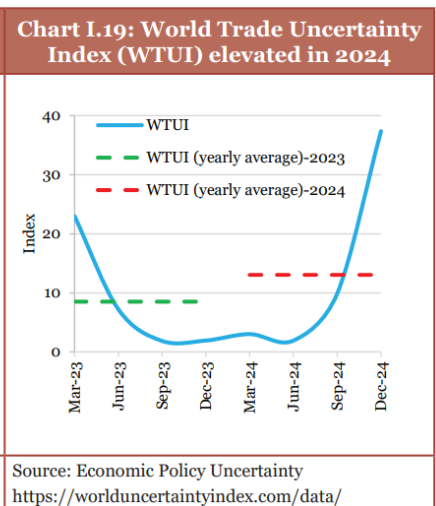
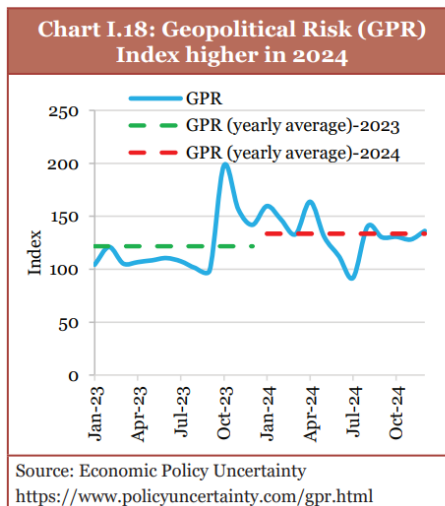
- Inflation rates across economies have trended downward steadily, approaching central bank target levels.
- This has been the result of tighter monetary policy regimes across the globe and supply chains adapting to higher levels of economic uncertainty.
- As a consequence, price pressures eased in 2023 due to a reduction in fuel prices.
- In 2024, it was attributed to a broad-based reduction in goods inflation.

Geopolitical uncertainties continue to pose risks to the global economic outlook

- Ongoing conflicts (Middle East, Russia-Ukraine) pose risks to growth, inflation, financial markets, and supply chains.
- Potential damage to energy infrastructure could disrupt global oil supply and add uncertainty.
- Suez Canal disruptions forced rerouting via the Cape of Good Hope, increasing shipping times by 10 days or more, on average
- Geopolitical Economic Policy Uncertainty Index remains high.
- World Trade Uncertainty Index has risen, driven by trade tensions and policy shifts.
- G20 import restrictions now affect 12.7% of imports, over three times the 2015 level.
- Prolonged uncertainty and rising trade restrictions could raise costs, deter investment, slow innovation, and weaken global growth.

Domestic economy remains steady amidst global Uncertainties

- 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%.
- Demand Side**
 - Private final consumption expenditure (PFCE) at constant prices is estimated to grow by 7.3 %, driven by a rebound in rural demand.





- **Gross fixed capital formation (GFCF)** (at constant prices) is estimated to grow by **6.4%**.
- **Supply side**
 - **Real gross value added (GVA)** is also estimated to grow by **6.4%**.
 - **The agriculture sector** is expected to rebound to a growth of **3.8% in FY25**.
 - **The industrial sector** is estimated to grow by **6.2 % in FY25**, supported by construction and utility services.
 - **Services sector** to grow **7.2%**, driven by financial, real estate, professional services, and public administration.

Resilient Economic Recovery Post-Pandemic

- The overall picture is **encouraging**.
- **Aggregate GVA surpassed** its pre-pandemic trend in Q1 FY25, and it now hovers above the trend in the H1 FY25.
- **The agriculture sector** remains strong, consistently operating well above trend levels.
- **The industrial sector** has also found its footing above the pre-pandemic trajectory.
- **The robust rate of growth** in the recent years has taken the **services sector** close to its trend levels

Improved agricultural prospects in FY25

- 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 %** compared to **2023-24**.
 - **Reason:** The estimated increase is mainly on account of the rise in rice, maize, coarse grains and oilseeds output.
- **A normal southwest monsoon** in 2024 has improved the water levels in reservoirs, ensuring sufficient water for irrigation during the **rabi crop production**.

Manufacturing sector growth moderates but shows positive expectations

- **First**, manufacturing exports slowed significantly **due to weak demand** from destination countries, and aggressive trade and industrial policies in major trading nations.
- **Second**, the above average monsoon had mixed effects - while it replenished reservoirs and supported agriculture, it also disrupted sectors like mining, construction, and, to some extent, manufacturing.
- **Third**, the variation in the timing of festivities between September and October in the previous and **current years** led to a modest growth slowdown in Q2 FY25.

Robust growth in the services sector

- **The services sector** continues to perform well in **FY25**.
- **Air cargo activity grew in double digits**, while port traffic remained stable
- Information Technology (IT) companies also performed better than the previous quarter.

Analysis of GDP by expenditure categories

- India's GDP at constant (2011-12) prices grew by **6.7 % and 5.4 %** in Q1 and Q2 FY25, respectively. This implied a real GDP growth of **6.0 %** in the first half of the current fiscal.

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

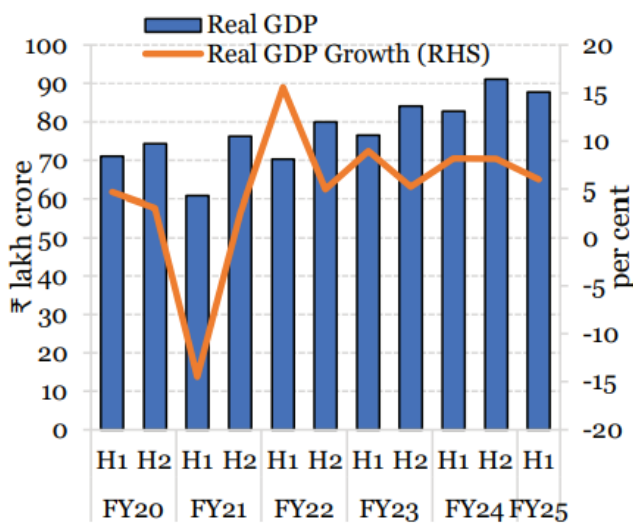
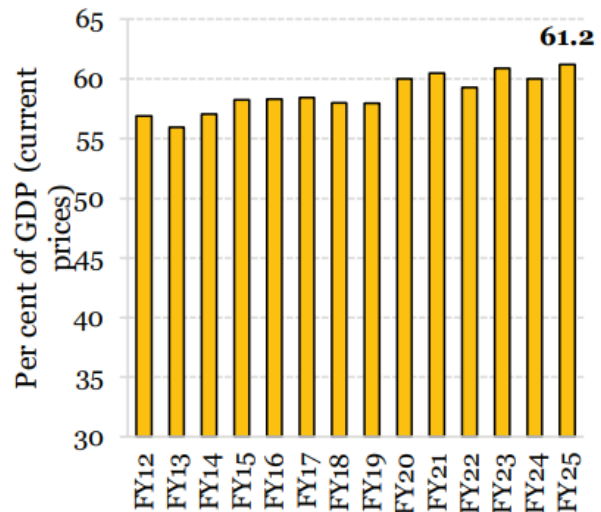


Chart I.30: Highest share of private consumption in H1 across all years



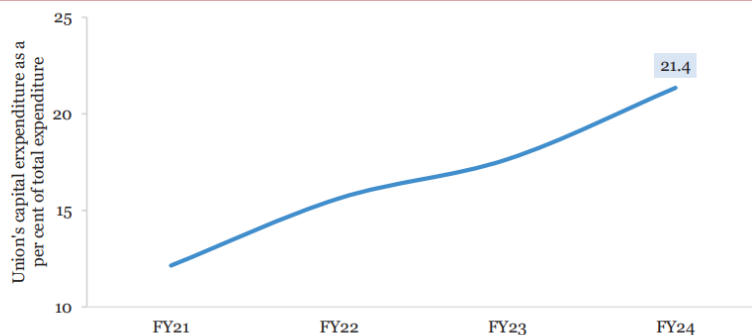
Source: Calculations based on Statement 13: Annual and Quarterly Estimates of GDP at constant prices and Statement 14: Annual and Quarterly Estimates of GDP at current prices, MoSPI

Economy characterised by stability and inclusivity on multiple fronts

Improving public finances support macro stability

- Since the **COVID-19 pandemic**, judicious fiscal management has helped to rein in general government dis-savings.
- This assumes greater significance in sustaining the overall savings in the economy. With private corporate savings hovering around **14 % of GDP**, persistent general government dis-savings could have implied a greater reliance on foreign funding.
- **Prudent fiscal management** in the last **four years** kept the overall savings-investment gap from widening and ensured a comfortable financing of the current account deficit, even though the household saving rate moderated.
- **Fiscal discipline of the union government**
 - The Union government's indicators of fiscal discipline have **improved progressively**.
 - **Quality of expenditure** approximated by capital expenditure as a per cent of total expenditure of the union, has continuously improved since **FY21**.

Chart I.35: Strong focus on fiscal discipline

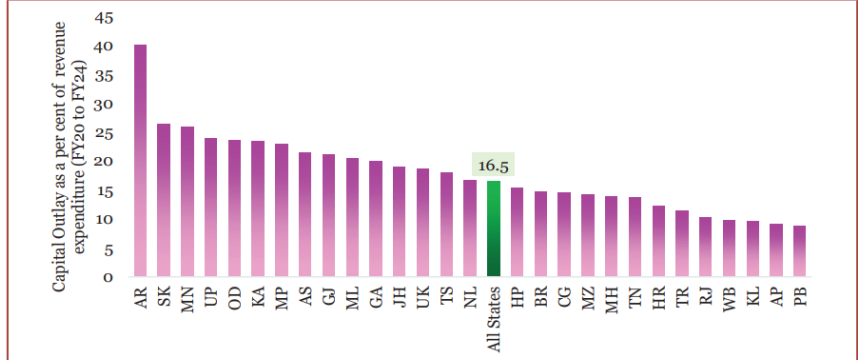


Source: Union Budget documents. Provisional actuals for FY24.

Varying patterns in state finances

- 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.

Chart I.44: Varying degree of capital outlay as a per cent of revenue expenditure



Source: RBI e-STATES database. Revised estimates for FY24.

Inflation – a combination of low and stable core inflation with volatile food prices

- Retail headline inflation**, as measured by the change in the **Consumer Price Index (CPI)**, has softened from **5.4 % in FY24 to 4.9 %** in April – December 2024.
 - Upper side of the tolerance band is **4 (+/-) 2 %**.
- Food inflation**, measured by the Consumer Food Price Index (CFPI), has increased from **7.5 % in FY24 to 8.4 % in FY25** (April-December).

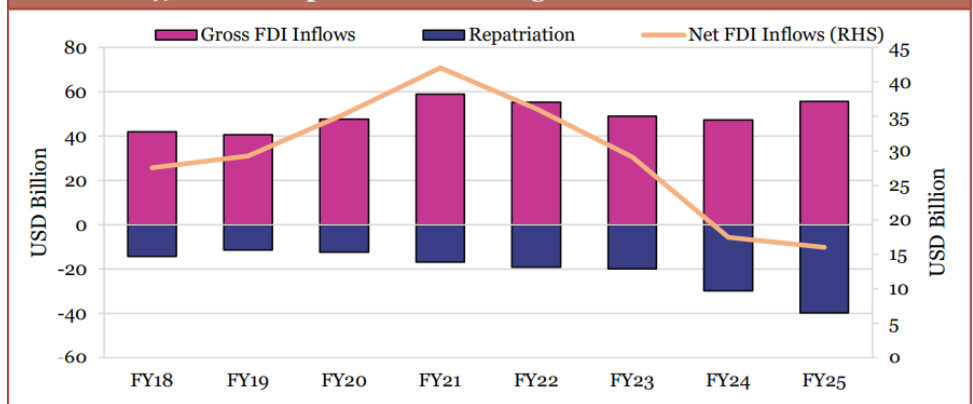
External sector stability safeguarded by services trade and record remittances

- Merchandise:** India’s merchandise exports grew by **1.6 % YoY** in April – December 2024.
 - However, non-petroleum exports (on the same comparison basis) were up by **7.1%**.
- Service:** India’s robust services exports have propelled the country to secure the **7th-largest share** in global services exports, underscoring its competitiveness.
- Remittance:** India was the **top recipient** of remittances in the world, driven by an uptick in job creation in OECD economies (Word Bank)
- Current account deficit (CAD):** It remains relatively contained at **1.2 % of GDP** in Q2 FY25.
- Gross foreign direct investment (FDI)** inflows increased **17.9 % YoY** in April – November 2024.
- Foreign portfolio investment (FPI)** flows have been volatile in the **second** half of 2024, primarily on account of global geopolitical and monetary policy developments.

- Foreign exchange reserves:** It increased from **USD 616.7 billion** at the end of January 2024 to **USD 704.9 billion** in September 2024 before moderating to **USD 634.6 billion** as on 3 January 2025.

- India’s forex reserves** are sufficient to cover **90 % of external debt** and provide an import cover of more than **10 months**, thereby safeguarding against external vulnerabilities.

Chart I.49: Rise in repatriation even as gross FDI inflows remain robust



Source: Calculations based on FDI figures from RBI Bulletin Table no. 34

Way forward

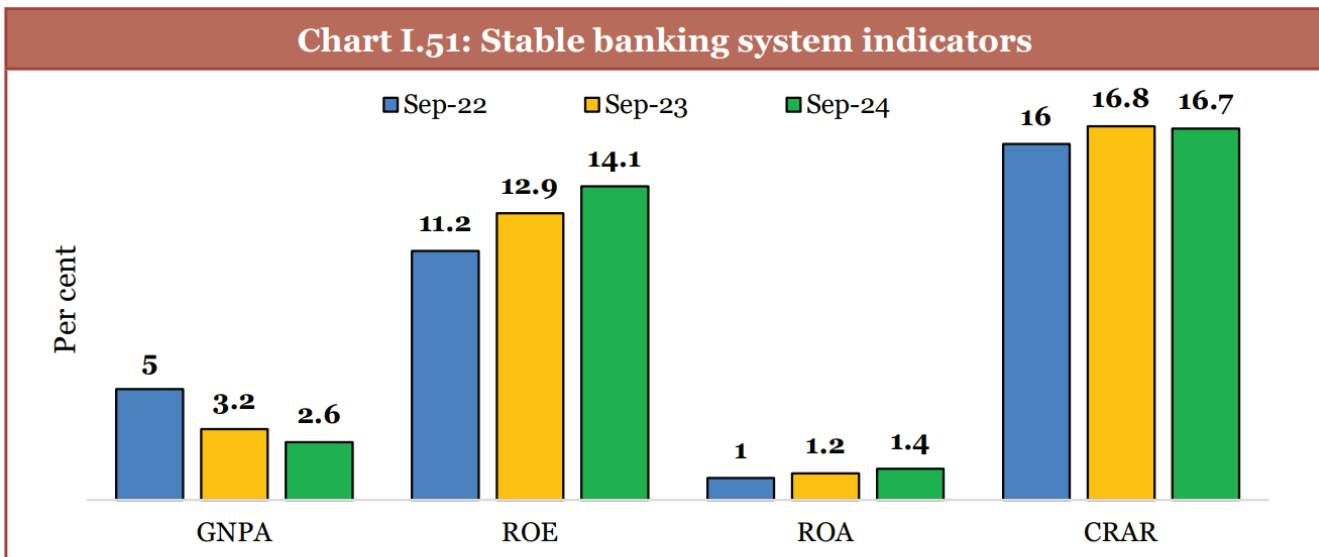
- In the short term**, diversifying export markets is essential, while **medium-term efforts** should focus on increasing market share.

- **Over the long term**, India must position itself as a strategic partner in high-value sectors like biotechnology and semiconductors.
- **Strategic technology partnerships** provide opportunities for enhanced cooperation in key areas like space, semiconductors, quantum technologies and advanced telecommunications.

Financial sector prospects amid a moderation of growth in credit disbursal

- As per the RBI’s Financial Stability Report (FSR), December 2024.
 - Gross **non performing assets (NPAs)** in the banking system have declined to a **12 year** low of **2.6 %** of gross loans and advances.
- The **capital-to-risk-weighted assets ratio (CRAR)** for SCBs stands at **16.7 %** as of September 2024, well above the norm.
 - The **profitability of SCBs** improved during H1 FY25, with **profit after tax (PAT)** surging by **22.2 % YoY**, while the Return on Equity (RoE) and Return on Assets (RoA) have improved on a YoY basis.

Chart I.51: Stable banking system indicators



Source: Various editions of RBI Financial Stability Report

Employment trends

- **India's labour market growth** in recent years has been supported by post-pandemic recovery and increased formalisation.
- **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% in 2017-18 to **3.2 %** in 2023-24.
 - 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 lakhs in FY24**.
- **The integration of AI** into India's labour market presents an opportunity to enhance productivity, elevate workforce quality and create employment, provided.
- **Systemic challenges** are effectively addressed through robust institutional frameworks.
 - **For India**, a services driven economy with a youthful and adaptable workforce, the adoption of **AI offers Economic Survey 2024-25** the potential to support economic growth and improve labour market outcomes.
 - **Prioritising education and skill development** will be crucial to equipping workers with the competencies needed to thrive in an AI-augmented landscape.

Outlook and way forward

- **The near-term global growth** is expected to be a shade lower than the trend level. The services sector continues to drive global expansion, with notable resilience in India.
- **Inflationary pressures have** been easing globally, though risks of synchronised price pressures linger due to potential geopolitical disruptions, such as tensions in the Middle East and the ongoing Russia-Ukraine conflict.
- **Central banks** have adopted more accommodative monetary policies.
 - However, the **pace of rate cuts** varies across regions depending on the growth imperatives and the pace of disinflation, creating potential divergences in economic recovery.
- **Investment activity** is expected to pick up, supported by higher public capex and improving business expectations.
- **Global energy and commodity prices** have softened in the recent past, making the core inflation outlook benign.
 - However, risks remain on account of significant global political and economic uncertainties.
- **Fundamentals of the domestic economy** remain robust, with a strong external account, calibrated fiscal consolidation and stable private consumption. On balance of these considerations, we expect that the growth in **FY26** would be between **6.3 and 6.8 %**.

What does the Budget say?

- **An Investment Friendliness Index of States** will be launched in 2025 to further the spirit of competitive cooperative federalism.
- **Make in India- Exemption** to open cell for LED/LCD TV, looms for textiles, capital goods for lithium-ion battery of mobile phones and EVs.
- **Trade Facilitation:** Time limit fixed for finalisation of provisional assessment; new provision for voluntary declaration of material facts post clearance and duty payment with interest but without penalty.
- **Extended Time for End Use:** from six months to one year. This will provide operational flexibility in view of cost and uncertainty of supply.

Glossary

Terms	Meanings
Gross value added (GVA)	GVA is defined as output (at basic prices) minus intermediate consumption (at purchaser prices)
Foreign direct investment (FDI)	FDI refers to an ownership stake in a foreign company or project made by an investor, company, or government from another country.
Private final consumption expenditure (PFCE)	PFCE is defined as the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services.
Gross fixed capital formation (GFCF)	GFCF is the value of new investments in fixed assets, like buildings, machinery, and equipment.
Labour Force Participation Rate (LFPR)	LFPR is the ratio between the total labour force divided by the total working-age population.
Worker Population Ratio (WPR)	WPR is defined as the percentage of employed persons in the population (PLFS).



Test your learning

MCQs

1. Consider the following statements regarding India's economic performance

1. India's real GDP growth for FY25 is estimated at 6.4%.
2. Private final consumption expenditure at constant prices is expected to grow by 7.3%.
3. Industrial sector's growth rate is driven by construction activities, electricity, gas and water supply.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

2. Consider the following statements with reference to India's employment trends:

1. India's unemployment rate has decreased in 2023-24.
2. India's formal sector has expanded with net EPFO subscriptions rising in FY24.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

3. Consider the following statements regarding the global economic scenario:

1. Geopolitical Economic Policy Uncertainty Index has increased in 2024 as compared to 2023.
2. World Trade Uncertainty Index has decreased in 2024 as compared to 2023.
3. Global economy grew by 3.3% in 2023, exceeding IMF's projection of 3.2%.
4. Tensions in the Middle East have disrupted trade through Suez Canal route.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

4. Which of the following statements is/are correct regarding India's economic performance in manufacturing and services sectors?

1. India continues to register the fastest growth in the manufacturing Purchasing Managers' Index (PMI).
2. The services sector is expected to maintain growth at 7.2%.

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

5. Consider the following statements regarding Capital Expenditure (CAPEX) in India:

1. Capital expenditure (CAPEX) improved continuously from FY21 to FY24.
2. Post general elections, CAPEX grew year-on-year (YOY) by 8.2% during July – November 2024.

Which of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains Questions

1. How has the Union government's fiscal discipline evolved in recent years? Examine its impact on capital expenditure and overall economic stability. (150 words)
2. Analyze the role of services trade and remittances in ensuring India's external sector stability. How do these factors contribute to managing the current account deficit? (250 words)



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Chapter 2: Monetary and financial sector developments: The cart and the horse

Introduction

- **Financial institutions** play a pivotal role in shaping a country's economic growth trajectory by facilitating savings, investments, and credit for economic activities.
- **The prevailing monetary policies** influence the interplay between financial intermediation and economic growth.

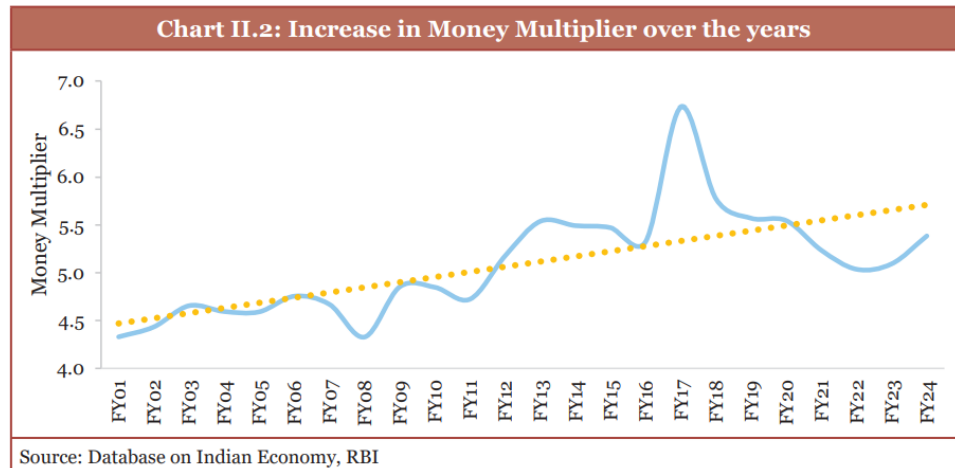
Chapter Precap

<p>Performance of the banking sector</p> <ul style="list-style-type: none"> • Gross Non-Performing Assets (GNPAs) ratio of Scheduled Commercial Banks (SCBs) has declined. • CRAR well above the required norms • Trends in bank credit 	<p>Efficacy of Insolvency Law</p> <ul style="list-style-type: none"> • Insolvency and Bankruptcy Code (IBC), 2016 • A continuously evolving and improving IBC framework • Pre-pack arrangements for MSMEs.
<p>Insurance Sector</p> <ul style="list-style-type: none"> • Total insurance premium grew. • Life insurance penetration dropped marginally. • Insurance density in the country saw a modest rise. 	<p>Risks pertaining to India's financial sector</p> <ul style="list-style-type: none"> • The traditional dominance of banks in providing credit is beginning to decline • Various financial innovations • Financialization

Monetary developments

- **Primary objective of monetary policy:** To maintain price stability while also considering the goal of economic growth, as stable prices are essential for sustainable growth.
- RBI employs various policy instruments, such as manoeuvring the interest rates, conducting **open market operations (OMO)**, altering the **cash reserve ratio (CRR)** and **statutory liquidity ratio (SLR)**, etc, to achieve this stability.

- **Monetary Policy Committee (MPC) of the RBI**, in its October 2024 meeting, decided to change the policy stance from the 'withdrawal of accommodation' to **'neutral'**.
- In December 2024, **MPC** announced a cut in **CRR to 4%** of the net demand from 4.5%. The decision is expected to infuse around **₹1.16 lakh crore** liquidity in the banking system.



- A country's **Money Multiplier (MM)** is influenced by two main factors: -
 - The amount of cash individuals (and businesses) hold and the reserves that banks maintain.
 - > When individuals keep more cash, the banking system **cannot create money**, resulting in a **lower multiplier**.
 - **The reserves that banks** hold with the central bank also count as a leakage, further decreasing the MM.
 - > In India's case, banks hold a portion of their deposits as reserves with the RBI, known as **CRR**.

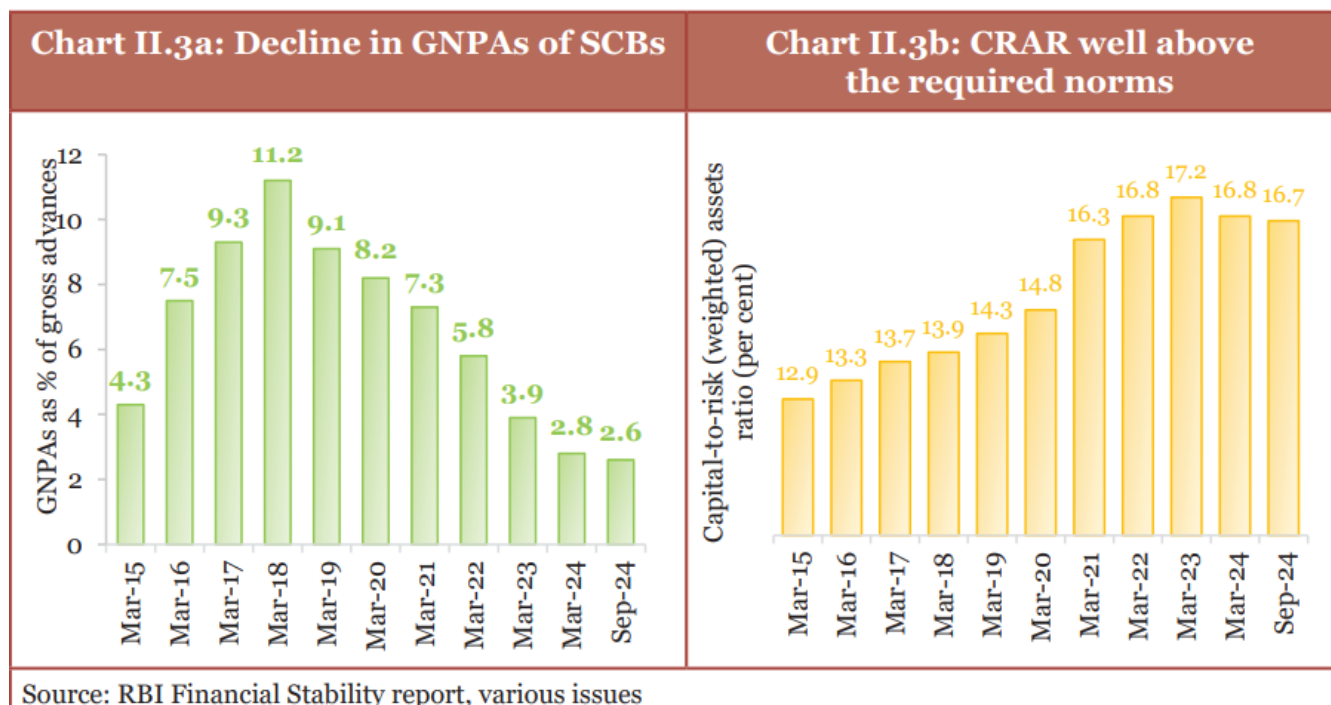
Financial Intermediation

- **Policy rates** set by the **MPC** are transmitted to the real economy through financial intermediaries (such as banks, capital markets, insurance, pension sector, etc.,) adjusting their lending and deposit rates.
- **CRR and SLR requirements** influence the lending capacity of the financial intermediaries.

Performance of the banking sector and credit availability

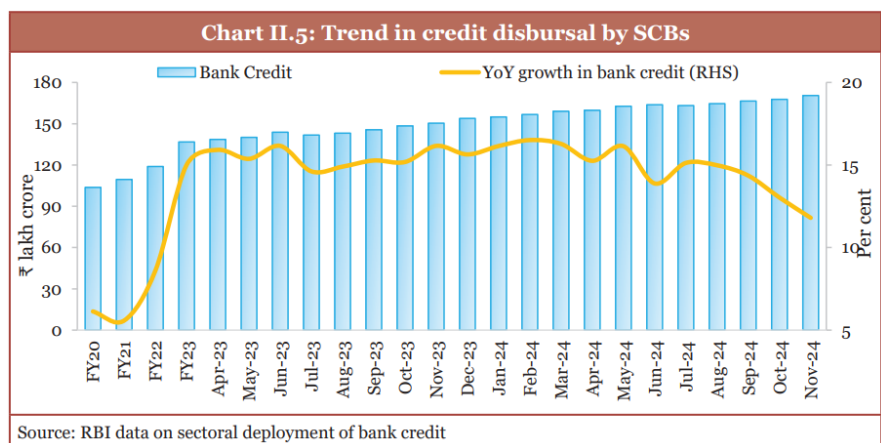
Improvement in asset quality of banks

- **The Gross Non-Performing Assets (GNPAs) ratio of Scheduled Commercial Banks (SCBs)** has declined consistently from its peak in FY18 to a **12-year low** of 2.6 % at the end of September 2024.
- **The restructured standard advances (RSA) ratio**, which is the share of RSA in total gross loans and advances, for SCBs declined from **1.8 %** in March 2022 to **0.7 %** at the end of September 2024.
- At the end of September 2024, the **CRAR of SCBs** stood at **16.7%**, and all banks met the Common Equity Tier-1 (CET-1) requirement of **8%**.

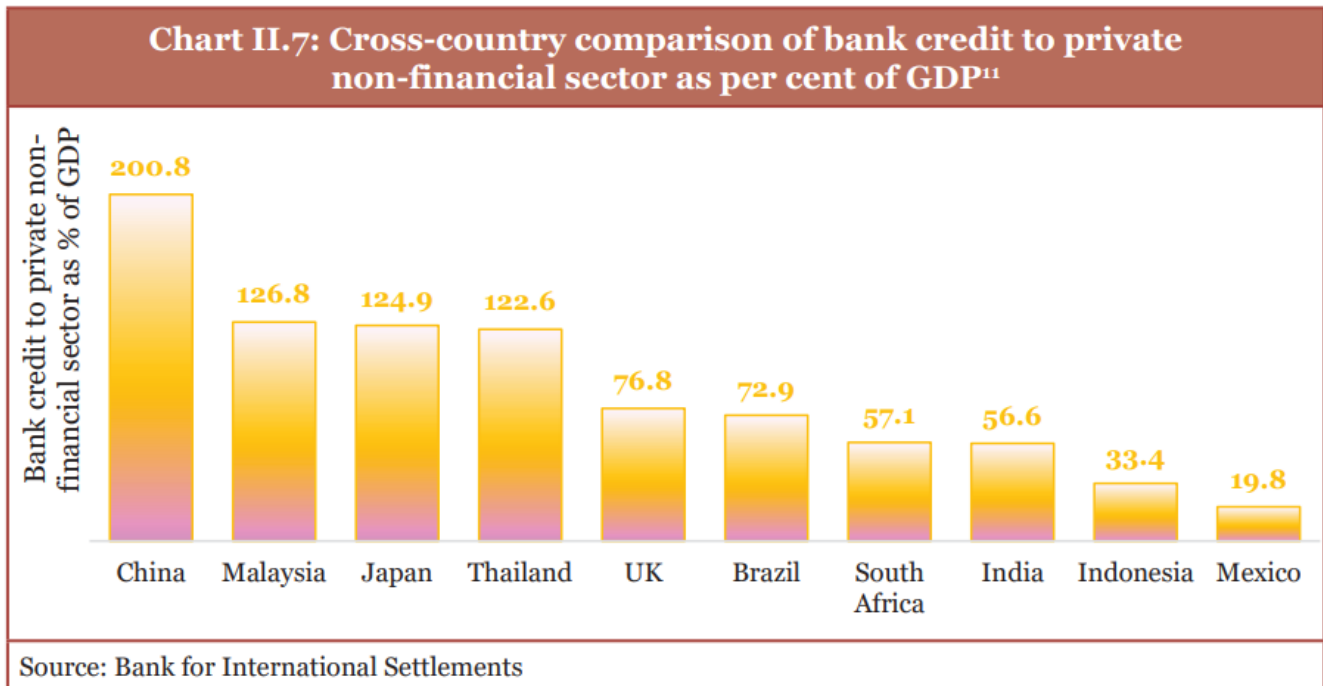


Trends in bank credit

- As of the end of November 2024, the YoY growth in aggregate **deposits of SCBs** stood at **11.1%**. The growth in bank credit has started converging towards deposit growth.
- At the end of November 2024, the growth in overall bank credit moderated to **11.8 %** (YoY) from 15.2 % a year ago over the same period.
- In December 2024, The MPC announced an increase in the interest rate ceiling on Foreign Currency Non-Resident [FCNR(B)] deposits with maturities of **1 to 3 years and 3 to 5 years**.



- There was a **positive credit/GDP gap** (i.e., the difference between the credit-GDP ratio and its long-term trend) between **2006 and 2012**, indicating excessive credit growth.
- **A cross-country comparison** indicates that India's bank credit to private nonfinancial sector to GDP ratio is lower than that of Advanced Economies (AEs) such as the US, UK, and Japan.



Rural Financial Institutions (RFIs)

- This multi-agency system includes Regional Rural Banks (RRBs), Rural Cooperative Banks (RCBs), SCBs, Small Finance Banks, NBFCs, Micro Finance Institutions, and local area banks.
- There were **133 RRBs** in 2006. Following certain mergers, liquidations, and amalgamations to improve their performance, the number was brought down to **43** in 2023.
- **Asset quality of RRBs** measured by GNPA as a percentage of gross advances improved from 7.3 % in FY23 to 6.1 % in FY24.

Use of Artificial Intelligence by banks

- The use cases of **AI and Machine Learning (ML) applications** by banks in India range across areas such as credit underwriting, regulatory capital planning, liquidity management, fraud detection and prevention, risk assessment and management.
- **AI and large language models (LLMs) have** enhanced customer service through interactive chatbots and personalised experiences.
- **Blockchain** offers secure, transparent, and efficient transactions.
- **Challenge:** The black-box nature of AI systems can make it difficult to assess the system's reliability or contest its decisions.
- **RBI announced the** establishment of a committee to create a Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREE-AI) in the financial sector.

Efficacy of Insolvency Law

- Till September 2024, **1068 resolution** plans approved under the **Insolvency and Bankruptcy Code (IBC), 2016** have resulted in creditors realising ₹3.6 lakh crore, 161 % against liquidation value and 86.1% of the fair value.



- A continuously evolving and improving IBC framework is important to achieving a **7-8 %** growth over the next decade.
- **Way forward:** Improving time efficiencies in the system comes down to using innovative resolution routes such as:
 - **Pre-pack arrangements for MSMEs.**
 - **Inter-disciplinary capacity building** of resolution professionals across legal
 - **Financial and industry** basics and minimising judiciary delays in proceedings.

Development in capital markets

- **Capital markets** are central to India's growth story, catalysing capital formation for the real economy, enhancing the financialisation of domestic savings, and enabling wealth creation.
- Investor participation has been a contributor, with number of investors growing from 4.9 crore in FY20 to **13.2 crore** as of 31 December 2024.
- **Primary Market:** The total resource mobilisation from **primary markets (equity and debt)** stands at ₹11.1 lakh crore from April to December 2024, which is 5 % more than the amount mobilised during entire FY24.
- **Corporate debt market:** The value of corporate bond issuances stood at **₹7.3 lakh crore** from April to December 2024, with an average monthly issuance of ₹ 0.8 lakh crore.
- In contrast to the equity market, the **debt market in India** remains undercapitalised.
 - As a percentage of GDP, the corporate bond market is **only 18 %** in India, as opposed to 80 % in Korea and 36 % in China.

Secondary Market: Positive performance amidst volatility

- On a longer-term basis, Indian markets have been among the **best performing markets in the world.**
- The compounded annualised returns of **Nifty 50** for the past ten years (since March 2014) stand at 8.8% (adjusted for USD).
- **The positive performance** of the Indian stock was driven by strong profitability growth, rapid traction of digital financial infrastructure, expanding investor base and substantial reforms in products and processes.

GIFT City

- **As a unified regulator,** International Financial Services Centres Authority (IFSCA) is responsible for developing and regulating financial institutions, services, and products within India's International Financial Services Centres (IFSCs).
- **GIFT-IFSC** has continued its ascent as a leading IFSC, improving its rank by **five places** in the 'Global Financial Centres Index 36' (GFCI 36), rising to 52nd position.
- It also achieved a notable jump in the FinTech rankings, climbing four places **to rank 45.**

Developments in the insurance sector

- India's insurance market has also continued its upward trajectory.
- Total insurance premium grew by **7.7 %** in FY24, reaching ₹11.2 lakh crore, despite a slight decline in insurance penetration from **4 % in FY23 to 3.7 % in FY24.**
- Life insurance penetration dropped marginally from **3 % in FY23 to 2.8 % in FY24,** while non-life insurance penetration remained stable at **1 %.**
- Insurance density in the country saw a modest rise from USD 92 in FY23 to **USD 95 in FY24.**
- **Overall insurance penetration rate** of 3.7 %, below the global average of 7 %, there is a **notable gap** in coverage that presents opportunities for insurers to expand their reach.
- **Way forward:** By targeting tier 2 and 3 cities and rural areas where awareness and accessibility are limited, insurers can tap into new customer segments and stimulate growth.



Developments in the pension sector

- **World Economic Forum (WEF)** has highlighted that, for the first time in history, globally, the number of people **aged 65 and over** has surpassed the number of children **aged five and younger**.
- According to the Mercer CFA Institute Global Pension Index, 2024, India's overall index value has moderated from 45.9 in 2023 to **44 in 2024**.
- India's pension sector has grown significantly since the introduction of the National Pension System (NPS) and Atal Pension Yojana (APY).
- As of September 2024, the total number of subscribers **reached 783.4 lakh**, showing a YoY growth of 16 % from 675.2 lakh in September 2023.

Cybersecurity aspects of India's financial sector

- With technological advancements, the Indian financial sector is witnessing a **digital transformation** that has enhanced efficiency and accessibility and increased exposure to diverse cyber threats.
- **Cyber threats**, ranging from phishing and ransomware to Distributed Denial of Service (DDoS) attacks, SMSing, and fake/malicious mobile applications.
- Number of observed and handled cybersecurity incidents stood at **11.6 lakh, 14 lakh and 13.9 lakh** during 2020, 2021 and 2022, respectively (Indian Computer Emergency Response Team (CERT-In))
- Reports indicate that almost **one-fifth** of all reported cyber incidents involve financial institutions, with banks being the most affected.
- According to IMF's **Global Financial Stability Report**, cyberattacks have resulted in extreme **financial losses**, which have increased fourfold since 2017, amounting to USD 2.5 billion.
- **India Status**: India's Tier 1 ranking in the Global Cybersecurity Index (GCI) 2024, with a commendable score of **98.49 out of 100**, signifies a significant milestone in its cybersecurity journey.

Risks pertaining to India's financial sector

- **The traditional dominance of banks** in providing credit is beginning to decline, and other participants and products in the financial sector are increasingly filling this role.
- Various financial innovations such as **UPI, Open Credit Enablement Network (OCEN) and T+1 settlement** have significantly eased access to credit in India.
- **Excessive financialisation** can hurt the economy. The costs may be particularly high for a low-middle-income country like India.
- **Way forward:**
 - The financial markets must grow in line with, **but not faster than**, the economy's capital needs and overall economic growth.
 - Banks need to **enhance their capabilities** to meet the demands of new-age households and the digital economy while maintaining their primary credit creation function.

Way Forward and Outlook

- **One critical risk** to guard against is the dominance of financial markets in shaping policy and macroeconomic outcomes, a phenomenon known as '**financialisation**.'
- **The consequences of financialisation** are evident in advanced economies, where it has led to unprecedented levels of public and private sector debt (some visible to regulators and some not).
- As India strives to align its financial system with its economic aspirations for 2047, **she should strive** to maintain the fine balance between financial sector development and growth on the one hand and financialisation on the other.
- It means that the **country has to chart** its path with respect to its context, considering the levels of financial savings in households, its investment needs, and levels of financial literacy.
- Ensuring that **incentives in the sector** are consistent with national growth aspirations is a policy imperative.



What does Budget Says?

Financial Sector Reforms and Development

- ‘Grameen Credit Score’ framework to serve the credit needs of SHG members and people in rural areas.
- NaBFID to set up a ‘Partial Credit Enhancement Facility’ for corporate bonds for infrastructure.
- Revamped Central KYC registry to be rolled out in 2025.
- FDI limit for the insurance sector will be raised from 74 to 100 per cent.

Glossary

Terms	Meanings
Money Multiplier (MM)	The money multiplier describes how much the money supply can increase given the amount of reserves held by banks.
Non-Performing Assets (NPA)	Reserve Bank of India defines Non-Performing Assets in India as any advance or loan that is overdue for more than 90 days .
Capital to Risk Asset Ratio (CRAR)	CRAR is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities.
Insurance density	It is the ratio of insurance premiums collected in a country to its population.
Insurance penetration	Insurance penetration is the percentage of insurance premiums paid in a country relative to its gross domestic product (GDP).
T+1 settlement	T+1 settlement in India is the process of settling trades on the trading day plus one (T+1).

Test Your Learning

MCQs

- Consider the following statements regarding the performance of India’s banking sector:**
 - Bank credit has been growing at a steady rate, with credit growth converging towards deposit growth in the current financial year.
 - The Gross Non-Performing Assets (GNPAs) ratio of Scheduled Commercial Banks (SCBs) has increased steadily since FY18.

How many statements are correct?

 - Only 1
 - Only 2
 - Both are correct
 - None
- Which of the following is true about India's banking credit compared to other countries?**
 - India’s bank credit to private non-financial sector is higher than that of advanced economies such as the US, UK, and Japan.
 - India’s bank credit to private non-financial sector is higher than that of emerging market economies (EMEs) like Indonesia and Mexico.
 - India’s bank credit to private non-financial sector to GDP ratio is lower than that of advanced economies but higher than that of Indonesia and Mexico.
 - India’s bank credit to private non-financial sector to GDP ratio is higher than that of emerging market economies, including Indonesia and Mexico.
- Consider the following statement about Global Financial Stability Report**
 - It is released by World Bank
 - It is released by International Monetary Fund
 - It is released by Asian Development Bank
 - It is released by UN Trade and Development

4. How many statements are correct regarding cyber incidents in India's financial sector?
1. One-fifth of all reported cyber incidents involve financial institutions, with banks being the most affected.
 2. Less than 1% of all reported cyber incidents involve financial institutions.
 3. Cyberattacks in financial institutions decreased fourfold since 2017.
- (a) only 1
(b) only 2
(c) Only 3
(d) None
5. Which of the following statements correctly defines the concept of 'financialization'?
- (a) Financialization refers to the process where the importance of financial markets, financial motives, financial institutions, and financial actors increases in shaping economic and social outcomes.
 - (b) Financialization refers to the reduction in the role of financial markets and the increased dominance of manufacturing industries in shaping policy and macroeconomic outcomes.
 - (c) Financialization refers to the reduction of public and private sector debt in advanced economies due to less reliance on financial markets.
 - (d) Financialization refers to a trend where financial markets play a lesser role in determining the economic outcomes of a country's development and growth.

Mains questions

1. Discuss the key developments in India's banking sector in the context of credit growth, asset quality, and capital adequacy. How do these developments contribute to the overall health of the financial system? (250 words)
2. Evaluate the role of financial inclusion in India's banking and insurance sectors. How can the government and financial institutions enhance financial inclusion to boost economic growth and reduce disparities? (150 words)



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Performance and Progress Analysis

Chapter 3: External sector: Getting FDI right

Introduction

- As of November 2024, the **Global Economic Policy Uncertainty (GEPU) index** remains high, reflecting ongoing global economic policy concerns.
- Similarly, the **Trade Policy Uncertainty (TPU) index** has risen since December 2023, primarily driven by trade tensions and policy changes among major economies.
- The Reserve Bank of India (RBI) has developed a **policy uncertainty index** specifically for India, utilising various global indices.
 - This index leverages internet search data from Google Trends to assess policy uncertainty from domestic and international events.

Chapter Precap

<p>Global trade</p> <ul style="list-style-type: none"> • Trade Route Disruptions • Global trade is expected to expand. • Regional trade agreements (RTAs) have grown. • Impact of non-tariff measures (NTMs) 	<p>Trend in India’s trade performance</p> <ul style="list-style-type: none"> • Increase in overall imports compared to exports. • Textile exports • India’s share in global services exports has increased. • Ease of doing business
<p>Balance of payments</p> <ul style="list-style-type: none"> • Current account • Capital and Financial Account • Foreign Exchange Reserves • External debt position 	<p>Performance of FDI flows</p> <ul style="list-style-type: none"> • Trends in gross FDI flows • Services sector remains the largest recipient of FDI. • Concerns

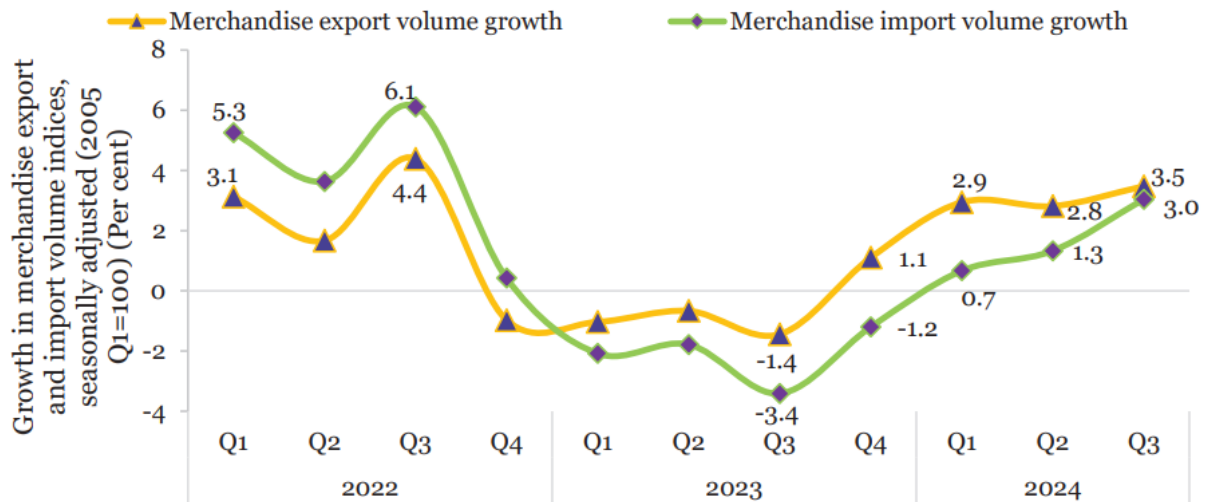
Global trade dynamics

- **Disruptions in the Red Sea** that began in November 2023, has forced changes in trade routes, causing **higher shipping costs and longer delivery times.**
- **Similar conflicts in the Hormuz Strait**, which channels **21%** of global petroleum liquid consumption, have disrupted energy trade and **increased prices.**
- **Climate change** is enhancing the uncertainties.
 - For e.g., recent **drought in the Panama Canal** jeopardised international trade, affecting approximately **5% of global maritime trade** volumes that transit through it.
- **Global trade is increasingly concentrated** in key relationships.
 - **For e.g.,** Russia and China rely less on the EU, while the U.S. depends less on China. Meanwhile, Russia and Vietnam have grown more dependent on China.
- Government interventions, including **Non-tariff measures (NTMs)**, reinforce the change in bilateral trade patterns due to geopolitical considerations.
- The rise in NTMs, which began after the **COVID-19 pandemic**, was further fuelled by the conflict between Russia and Ukraine.

Global trade performance in 2024

- World Trade Organisation (WTO) database shows a **year-on-year (YoY) growth of 3.5 % and 3 %** respectively, in global merchandise export and import indices in Q3 of 2024 (seasonally adjusted, 2005 Q1=100).
- As a result, global trade is set to exceed its 2022 record, reaching nearly **USD 33 trillion in 2024.**
- Overall, global trade is expected to expand by about **USD 1 trillion (or 3.3 %)** in 2024, with goods and services contributing approximately USD 500 billion each.

Chart III.3: Rebound in global trade in 2024



Source: WTO Stats

Tariff policies

- The number of **regional trade agreements (RTAs)** in effect has grown substantially, increasing from **22 in 1990 to 369** in 2024.
- Increased emphasis on free trade and enhanced collaboration in international trade policies under the WTO has reduced border tariffs among nations.
 - For e.g., between 2000 and 2024, the **average tariff rates on dutiable items** in India decreased from **48.9% to 17.3%** while in China, they fell from **16.4% to 8.3 %**.
- Between 2012 and 2022, the **Most Favoured Nation (MFN)** and preferential tariffs declined in agriculture, manufacturing, and natural resources.
- At a broader level, **India's import tariff policy** has evolved over time, balancing domestic policy goals with the need to integrate into the global economy.

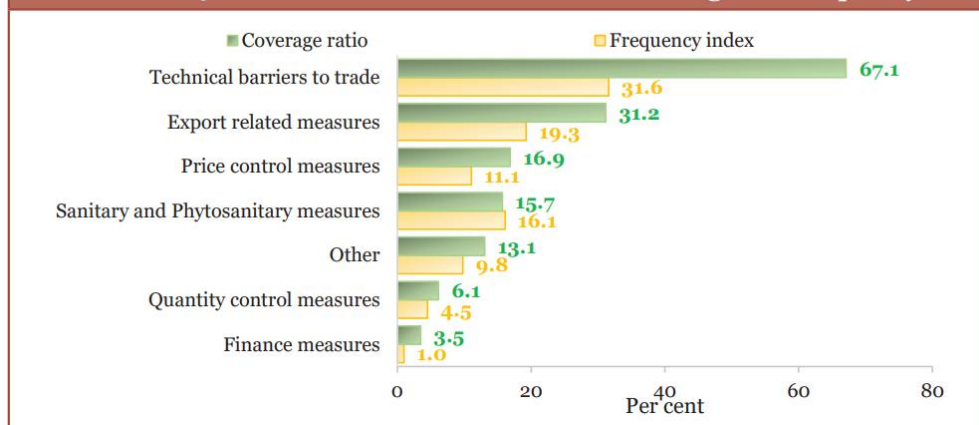
Non-tariff measures (NTMs)

- The Global Trade Alert database** shows that between 2020 and 2024, over **26,000 new** restrictions related to trade and investments have been globally imposed.
- The Technical Barriers to Trade (TBT)** affect 31.6 % of the product lines, covering **67.1 %** of the global trade (as of December 2024).

Impact of NTMs

- Though many **NTMs** aim primarily to protect public health or the environment, they also **adversely impact trade** by increasing information, compliance, and procedural costs.

Chart III.4: Classification of NTMs based on coverage and frequency





- Research has demonstrated that NTMs have a **positive impact on FDI**.
 - > For example, if the average number of NTMs applied to a product increase from **2.5 to 3.5** NTMs per product, FDI could increase by **12 %**.
 - > This is because, a firm might decide to bypass an NTM by engaging in FDI, if the costs associated with this approach are lower than the costs of exporting.

Trend in India's trade performance

- **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%.
- **Total imports** during April-December 2024 reached USD 682.2 billion, registering a YoY growth of 6.9 %.
- A more significant increase in overall imports compared to exports led to a rise in the overall **trade deficit from USD 69.7 billion** in 2023 to **USD 79.5 billion** in the corresponding period of FY25.
- **Merchandise exports** registered a modest growth of 1.6 % (YoY basis) due to decline in the value of petroleum product exports due to a fall in international commodity prices.
- **Merchandise imports** grew due to a rise in non-oil, non-gold imports.

Textile exports

- India is the **sixth-largest exporter** of textiles and apparel globally.
- The textile and apparel industry contributes **2.3 % of GDP**, 13 % to industrial production, and 12 % to exports.
- It is also one of the **largest employment generators after agriculture**, with over **45 million people** employed directly, including many women and the rural population.
- India exported textile items worth **USD 34 billion in 2023**, with apparel constituting **42 % of the export basket**.

Diversification of India's exports to new markets

- **Between 1994 and 2022**, India has not just carved out new markets but has become the market leader in some of the new product categories.
 - For instance, India is a top exporter of shipping vessels (with nearly **33 % market share**).
- Similarly, it is a leading exporter of **iron and steel alloys**, an unexplored market before 1994.
- The analysis has been done based on the data available for key **Principal Commodities (PCs)**.
 - 20 PCs were selected based on two criteria: firstly, the PCs were sorted in descending order of the number of new markets explored, and secondly, the PCs had an export **value of more than USD 100 million**.
- **The diversification strategy mitigates risks** associated with market fluctuations and positions India as a more competitive player in the international trade landscape.

Services trade remained resilient amidst global challenges

- Services sector exports grew at **11.6 %** in the first 9 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.
- India's share in global services exports has **more than doubled**, reaching around **4.3 % in 2023** from 1.9 % in 2005.
 - In 'Telecommunications, Computer, & Information Services', India commands **10.2 % of the global exports market** (ranking 2nd largest exporter in the world).
 - The 'Other Business Services sector' also plays a crucial role, with India holding **7.2 % of the world share** (ranking 3rd largest exporter in the world).

India's e-commerce exports

- **The e-commerce industry** in India has experienced swift expansion over the past few years.

- **Factors responsible** such as the rise of technology-powered advancements like online payments, localised delivery services, data-driven interactions with customers, and digital marketing etc.
- According to a report, India's **B2C e-commerce market** was worth **USD 83 billion in 2022**, and it is anticipated to grow to USD 150 billion by 2026, showing a CAGR of **15.9%**.
 - However, by current market size, India's **e-commerce market** makes up a small fraction, about 1.5 % of the global market.

Ease of doing business

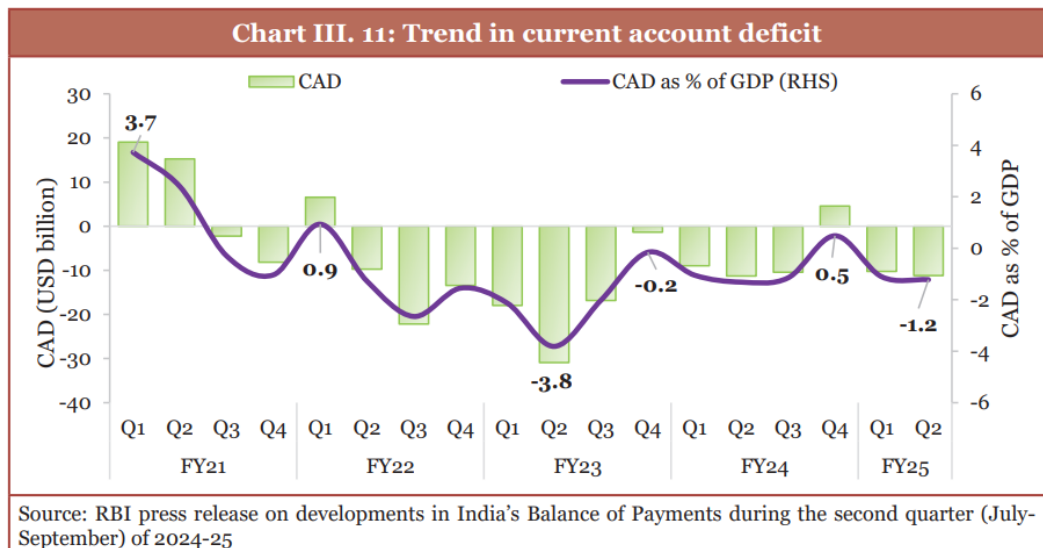


Balance of payments: Resilience amid challenges

- Against the backdrop of uncertainties in the external trade and investment environment, **India's Balance of Payments (BoP) position has remained stable.**
 - It is led by **resilient services exports, benign crude oil prices, renewed foreign portfolio inflows**, and a revival in FDI flows.

Current account

- India's current account deficit (CAD) moderated slightly to **1.2 % of GDP** in Q2 of FY25 against **1.3 % of the GDP** recorded in Q2 of FY24.
- The recent rise in the CAD can be attributed to an increase in the **merchandise trade deficit**,



which rose to **USD 75.3 billion** in Q2 of FY25 from USD 64.5 billion in the corresponding quarter of the previous year.

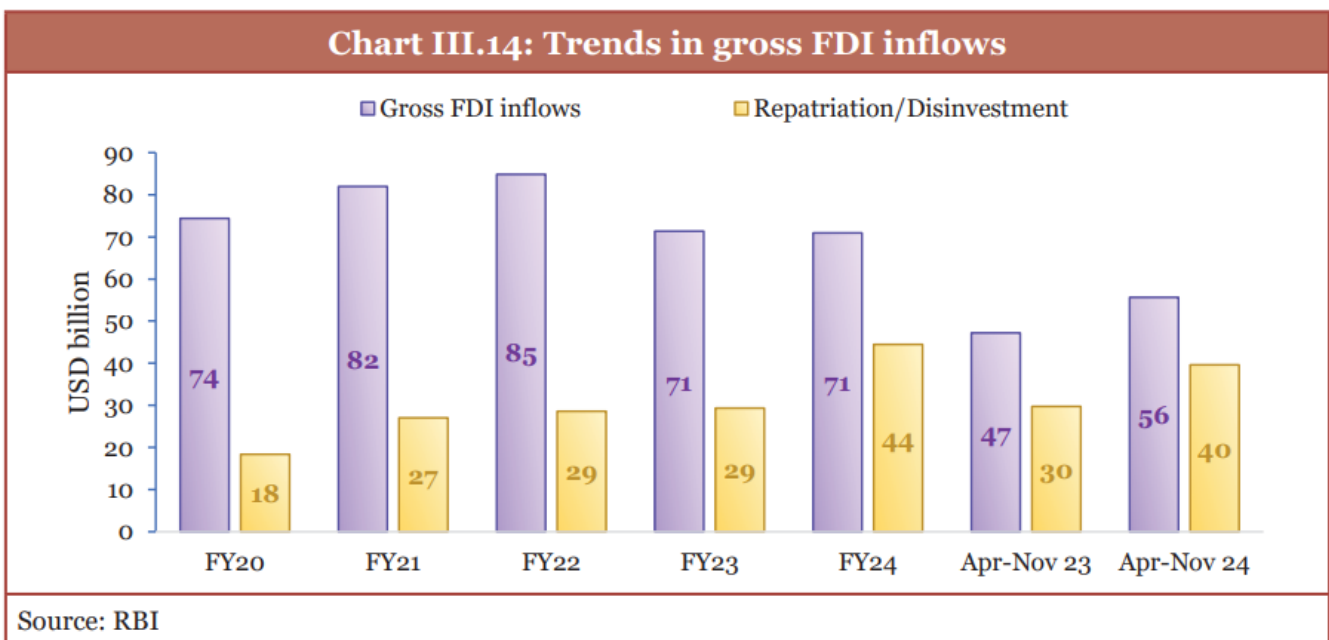
- India’s CAD has remained relatively contained compared to other G20 economies, such as **Brazil and Australia, which have faced similar external pressures**, including higher commodity prices and weaker global demand.
- **Private transfers, mainly driven by remittances** by Indians employed overseas, formed the bulk of net transfers, growing steadily from USD 28.1 billion in Q2 of FY24 to **USD 31.9 billion** in Q2 of FY25.

Capital and Financial Account

- Over the period from Q1 of FY23 to Q2 of FY25, India has generally recorded **surpluses in the capital account**, largely driven by robust inflows from FDI, FPI, and external loans.
- **These inflows** have supported the country’s external position and contributed to building **foreign exchange reserves**.

Performance of FDI flows

- **FDI recorded a revival in FY25**, with gross FDI inflows increasing from USD 47.2 billion in the first eight months of FY24 to **USD 55.6 billion** in the same period of FY25, a YoY growth of **17.9 %**.



- **Over the long term**, FDI inflows into India have surpassed the **USD 1 trillion mark** from 2000 to 2024, solidifying the India’s position as a safe and significant global investment destination.
- **From a sectoral perspective**, the **services sector remains the largest recipient of FDI**, accounting for **19.1 %** of total equity inflows in H1 of FY25.
- **Concerns:** FDI into India has recently been scrutinised due to concerns about **declining inflows**.
 - However, a broader analysis reveals that FDI flows globally have been **hampered by economic uncertainty, geopolitical tensions, and rising borrowing costs**.
- India runs a CAD, and its **investment needs** are much larger considering the size of its economy.
- **Supplementing domestic savings** with reasonably large foreign savings expands the scope for capital formation.

Performance of Portfolio flows

- **Factors** such as concerns about slowing earnings growth, high valuations, rising geopolitical tensions, and recent developments in China led **FPIs** to withdraw significant funds from Indian equities.

- On a cumulative basis, the **net FPI inflows** into India slowed to USD **10.6 billion** from April to December 2024 from USD 31.7 billion during the same period the previous year.
- **The volatility in portfolio flows** underscores the susceptibility of equity and bond markets to global developments.
- Since the investor sentiment/perception of the trajectory of **Fed rates** and the interest rate differentials are the key drivers of FPI flows in India, it is important to analyse the trends in **FPI debt flows** and the yield differential between India and the US.
- The increase in demand for **India’s G-Secs** is also set to have a **positive externality** in terms of **lowering the borrowing costs for the government** as the yields soften due to heightened demand and limited supply dynamics.
- **The inclusion of Indian bonds** in global indices signals a growing appetite amongst foreign investors to include Indian government securities in their investment portfolios.

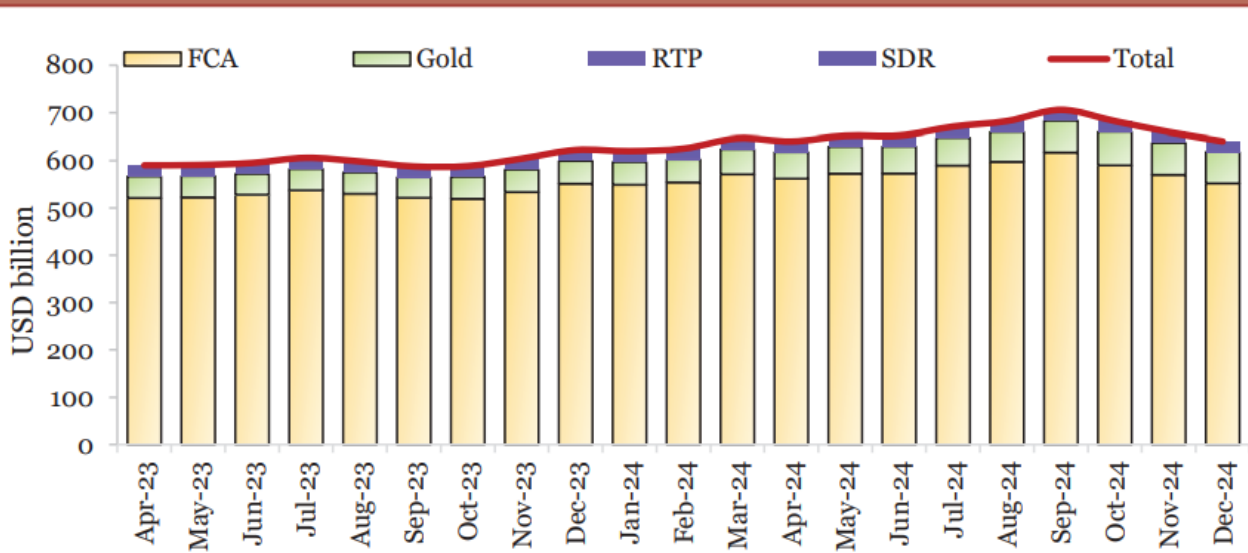
Others

- **NRI deposits**, external commercial borrowings (ECBs), and short-term trade credit have contributed additional buffers to India’s capital account.
 - **ECBs** rising to **USD 9.2 billion** from April to October 2025, up from **USD 2.8 billion** in the corresponding period of the previous year, reflecting a greater appetite for borrowing from foreign sources.
 - **Non-Resident Indian (NRI) deposits** have also surged significantly, with net inflows increasing to **USD 10.2 billion**.

Foreign Exchange Reserves

- India's foreign exchange reserves comprise **foreign currency assets (FCA), gold, special drawing rights (SDRs) and reserve tranche position (RTP)** in the IMF.
- India’s foreign exchange reserves moderated to **USD 640.3 billion** as of the end of December 2024.
 - The reserves are sufficient to **External Sector** cover approximately **90 %** of India’s external debt.
- As of 2024, India has secured its place among the world's largest foreign exchange reserve-holding countries, **ranking 4th globally**, following China, Japan, and Switzerland.
- India’s forex reserves witnessed a notable increase of **USD 27.1 billion** in 2024.
 - **FCA constituted** the bulk of increase, strengthening India’s overall reserve position.

Chart III.19: Movements in foreign exchange reserves

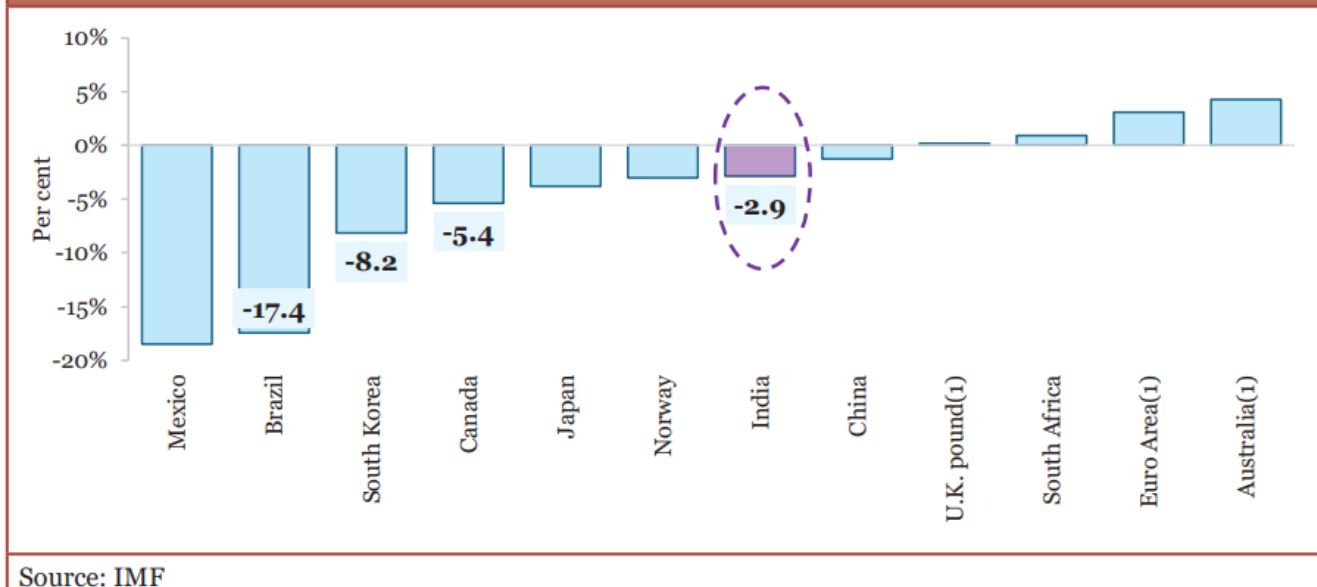


Source: RBI

Exchange Rate

- **The value of the Indian Rupee (INR)** is market-determined, with no target or specific level or band.
- **Various domestic and global factors influence** the exchange rate of the INR (such as the movement of the Dollar Index, trends in capital flows, level of interest rates, movement in crude prices, current account deficit, etc.)

Chart III.20: Changes in the bilateral exchange rates of the major countries against USD from April to December 2024



Source: IMF

- **Effective exchange rates** have become a prominent measure of external competitiveness of an economy’s tradable sector relative to the foreign tradable sector.
 - **Nominal Effective Exchange Rate (NEER)** for the INR remained stable in the 90-92 range from April to November 2024.
 - **Real Effective Exchange Rate (REER)**, which reflects the real purchasing power of the currency, steadily appreciated from **103.2** in April 2024 to **107.2** in December 2024.

External debt position

- India’s external debt has **remained stable over the past few years.**
 - **A stable external debt position** has helped maintain external sector stability, significantly when the rest of the world is affected by geopolitical headwinds.
- Across currencies, **the external debt** remained primarily denominated in the US Dollar (53.4 %), followed by the INR (31.2 %), SDR (5 %), and the Euro (3 %).

Way Forward and Outlook

- To remain competitive and enhance its participation in global supply chains, India must continue **reducing trade costs** and **improving facilitation** to boost export competitiveness.
- The state **produces governance, and the private sector** produces goods and services.
- If both these actors focus on quality and efficiency, then despite the trade tensions and protectionism, India can **increase its share in overseas markets** and generate resources to sustain a **higher level of capital formation.**

What does Budget Says?

- **Export Promotion Mission:** With sectoral and ministerial targets to facilitate easy access to export credit, cross-border factoring support, and support to MSMEs to tackle non-tariff measures in overseas markets.
- **BharatTradeNet:** A digital public infrastructure for international trade will be set-up as a unified platform for trade documentation and financing solutions. Support for integration with Global Supply Chains.
- **National Framework for GCC:** As guidance to states for promoting Global Capability Centres in emerging tier 2 cities.
- **Promotion of maintenance, repair and overhaul (MRO):** Exemption for 10 years on goods for ship building and ships for breaking, extension of time limit for export of railway goods imported for repairs.
- **Export promotion:** Duty free inputs for handicraft and leather sectors.

Glossary

Terms	Meanings
Non-tariff measures (NTMs)	These are policy measures other than tariffs that can potentially have an economic effect on international trade in goods. They are increasingly shaping trade, influencing who trades what and how much.
Regional Trade Agreement (RTA)	RTA is a treaty between two or more governments that define the rules of trade for all signatories.
Most Favoured Nation (MFN)	MFN principle requires that any favorable trading terms granted by one WTO member to another must be extended to all other WTO members.
Balance of Payments (BoP)	Balance of Payments (BoP) statistics systematically summaries the economic transactions of an economy with the rest of the World (i.e. Transactions between resident & non resident entities) during a given period.
Current Account Deficit (CAD)	CAD is the difference between the money coming in due to exports and the money going out due to imports
Nominal Effective Exchange Rate (NEER)	NEER is the unadjusted weighted average rate at which one country's currency is exchanged for a basket of foreign currencies.
Real Effective Exchange Rate (REER)	REER is the real effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.

Test Your Learning

MCQs

1. Consider the following statements regarding global trade disruptions:

1. The Red Sea disruptions have resulted in longer delivery times and higher shipping costs.
2. Conflicts in the Hormuz Strait have disrupted global energy trade and increased petroleum prices.
3. Climate change has enhanced uncertainties in global trade.

How many statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Only 3
- (d) None

2. Consider the following statements about non-tariff measures (NTMs):

1. Agriculture and natural resources sectors are most affected by NTMs.
2. NTMs have had minimal impact on manufacturing sectors.

Which of the following options is correct?

- (a) 1 only
- (b) 2 only
- (c) Both
- (d) None

3. Which of the following is correct regarding Foreign Direct Investment (FDI) in India?

1. India has surpassed USD 1 trillion in FDI inflows from April 2000 to September 2024.
 2. FDI inflows have decreased in recent years due to global uncertainties.
- (a) 1 only
(b) 2 only
(c) Both
(d) None

4. Which of the following is correct regarding India's foreign exchange reserves?

1. India's foreign exchange reserves are sufficient to cover about 12 months of imports.
 2. India's foreign exchange reserves constitute primarily of gold and SDRs.
- (a) 1 only
(b) 2 only
(c) Both
(d) None

5. Which of the following is correct regarding India's external debt?

1. India's external debt has been increasing rapidly in recent years.
 2. India's external debt remains stable with manageable ratios.
- (a) 1 only
(b) 2 only
(c) Both
(d) None

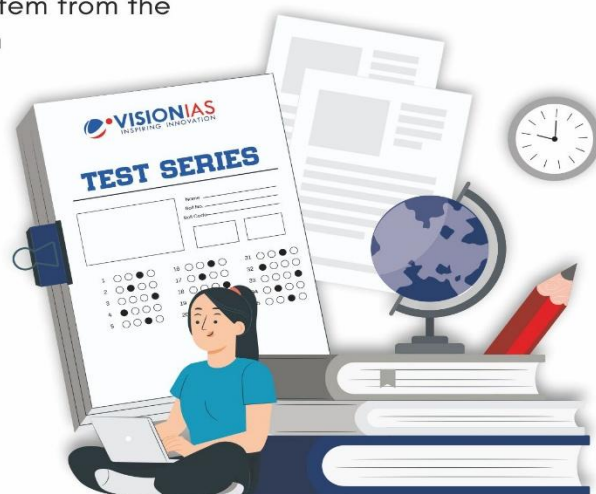
Mains Questions

1. Analyze India's current account performance and the factors influencing its resilience amidst global trade challenges. (150 words)
2. Assess the role of Foreign Direct Investment (FDI) in enhancing India's economic stability amidst the global economic slowdown. (150 words)

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Chapter 4: Prices and Inflation: Understanding the Dynamics

Introduction

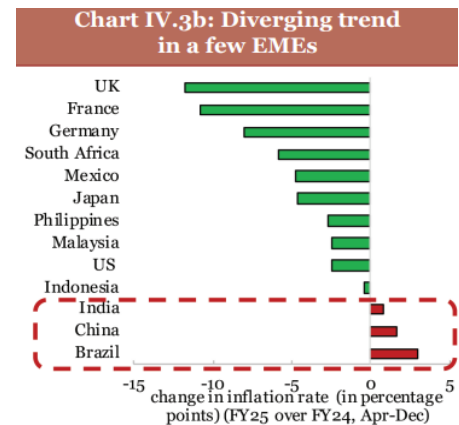
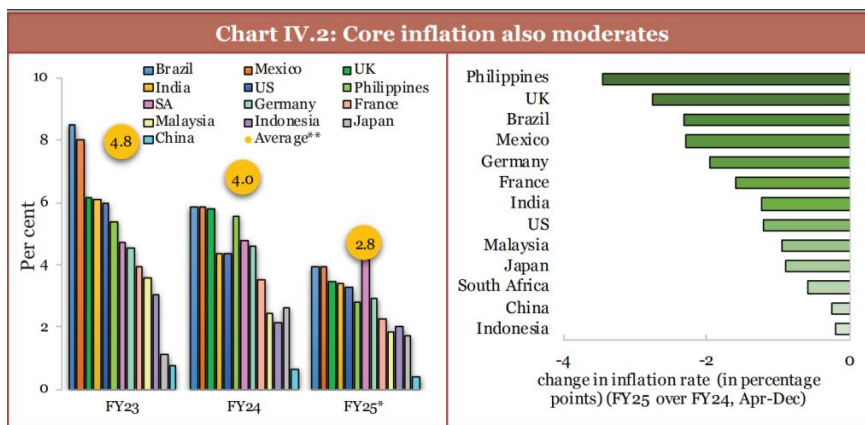
- **Global inflation peaked in 2022** (8.7%), driven by supply chain disruptions and geopolitical tensions, but has **declined since to 5.7% in 2024** due to policy measures.
- In India, **retail inflation eased** to 4.9% in FY25 (April-December) from 5.4% in FY24, **core inflation reached its lowest point** in a decade, while **food inflation increases** due to supply chain disruptions, demand-supply mismatch, and adverse weather conditions (e.g. Onion and tomato prices, pulses etc.).
- Food items constitute about two-fifths of consumer price index in India. Hence, **Consumer Food Price Index (CFPI) is a significant determinant of retail inflation.**

Chapter Recap

Global Inflation Trend <ul style="list-style-type: none"> • Headline Inflation rate declined • Core Inflation decreased • Food Inflation eased 	Domestic Inflation Trends <ul style="list-style-type: none"> • Headline and Core inflation declined • Retail Inflation declined • Food Inflation remained firm • Extreme weather conditions impacts vegetable production • Administrative measures to control food inflation
Outlook <ul style="list-style-type: none"> • Consumer Price Inflation • Inflation Rate projection • Headline inflation 	Recommendations to ensure price stability <ul style="list-style-type: none"> • Develop climate-resilient crop varieties • Farmers Training • Robust data collection

Global Inflation

- **Headline inflation rate: Declined** due to **synchronised tightening of monetary policy**, increased interest rates by central banks and stabilised output globally during FY24 and FY25.
- **Core inflation** (excluding volatile food and energy prices): **Decreased** in most countries due to **moderation in international commodity prices**, and effective policy interventions across the sectors. (refer image)
- **Food inflation: Eased** due to **improved global supply driven by increased production** owing to favourable growing conditions, **except for emerging economies** like Brazil, India and China. (refer image)



Domestic Inflation Trends

Headline and Core Inflation:

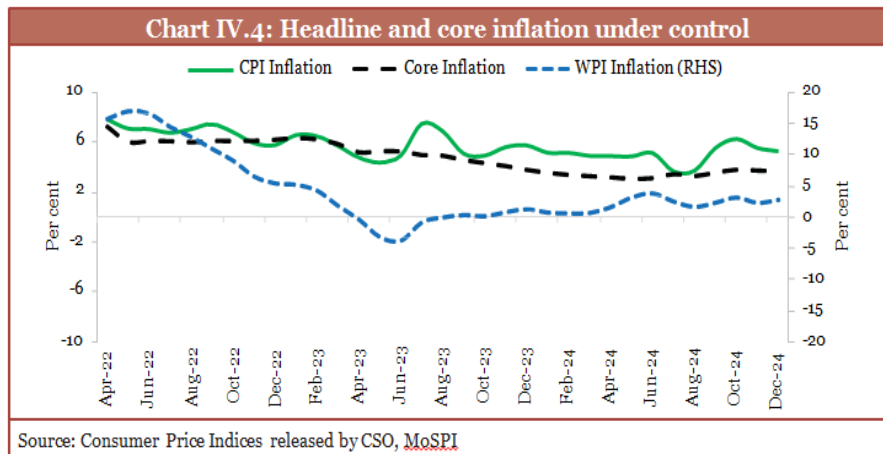
- **India's headline inflation** (measured by Consumer Price Index (CPI)) **declined** in FY25 compared to FY24.
- **Factors contributing decline in Headline Inflation:**
 - **Decrease in core inflation**, which dropped by 0.9 percentage points between FY24 and FY25. The **decline in core inflation was driven by core services inflation, which was lower than core goods inflation.**
 - **Decrease in fuel price inflation**, alleviating pressure on household budgets.

Retail Inflation

Its **decline can be attributed to reduction in input prices**, as reflected in **wholesale price inflation**, which was in **deflationary zone (-0.7%)** in FY24 and remained low in FY25.

Food inflation (measured by Consumer Food Price Index (CFPI))

- Unlike global trend of stable or declining food inflation, it has remained **firm over the past two years**. This is attributed by **supply chain disruptions** exacerbated by **extreme weather event** and **reduced harvest**.
- **CFPI: Increased** from 7.5% in FY24 to **8.4% in FY25**, primarily **driven by a few food items particularly vegetables (Tomato, Onion) and pulses (tur dal)**.
 - When **Vegetables and pulses are excluded** from CPI basket, **average food inflation rate for FY25 was 4.3%**, which is 4.1% lower than overall food inflation.
 - **By excluding Tomato, Onion and Potato (TOP)** – most price sensitive vegetables- from CPI basket, **average food inflation rate in FY25 was 6.5%**.
 - Over the past three years (2021-22 to 2023-24), **domestic household consumption is lower than production** for both **tomatoes and onions**.
- **Extreme weather conditions**
 - Cyclones, heavy rains, hailstorms, droughts, heatwaves etc., **impacts vegetable production, prices** (mainly onion and tomato), and supply chains, and thereby **affecting retail prices**.
 - > **Inflation in horticultural commodities** in 2023-24 was driven by **unseasonal rainfall** during pre-monsoon season, which damaged crops in major horticulture-producing states.



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

Way forward and Outlook

- **Consumer Price Inflation (CPI):** Both RBI and IMF projected India’s CPI will gradually align with the target in FY26.
- **Inflation Rate:** IMF has projected an inflation rate of 4.4% in FY25 and 4.1% in FY26 for India.
- **Headline inflation:** RBI expects headline inflation to be 4.2% in FY26, if there is normal monsoon and no further external or policy shocks.
 - As per World Bank’s Commodity Markets Outlook, commodity prices are expected to decrease by 5.1% in 2025 and 1.7% in 2026, primarily due to lower oil prices, and stable prices for metals and agriculture raw material.
 - Among precious metals, gold prices are expected to decrease while silver prices are expected to increase.
 - Metals and minerals prices are expected to decline, primarily due to a decrease in iron ore and zinc prices.
 - Kharif food grain production is expected to rise by 5.7% in 2024-25.
 - Rice production may increase by 5.9%, while tur production could grow by 2.5% as compared to 2023-24.

Recommendations to ensure long-term price stability

- **Climate-resilient crop varieties:** As India faces a persistent deficit in production of pulses and oilseeds, fluctuations in tomato and onion production, there is need to develop climate-resilient crop varieties, thus enhancing yield and reducing crop damage.
- **Regular Training:** Farmers should receive training on best practices, use of high-yield and disease-resistant seed varieties and targeted interventions to improve agricultural practices in major growing regions for pulses, tomatoes, and onions.
- **Data Collection:** Implementing robust data collection and analysis systems in various tiers of government to monitor prices, stocks, storage and processing facilities, and make informed policy decisions.



What does the budget Say?

Aatmanirbharta in Pulses: Launch a **6-year Mission with special focus on Tur, Urad and Masoor**, emphasising

- Development and commercial availability of climate resilient seeds
- Enhancing protein content
- Increasing productivity
- Improving post-harvest storage and management, assuring remunerative prices to farmers

Glossary

Terms	Meanings
Inflation	Rate of increase in prices over a given period of time.
Headline Inflation	Change in value of all goods in the basket.
Core Inflation	Excludes food and fuel items from headline inflation.
Retail Inflation	Also known as Consumer Price Inflation (CPI), it measures the rate at which the prices of goods and services purchased by consumers increase or decrease over time.
Consumer Food Price Index (CFPI)	Same as CPI for 'Food and Beverages' except that it does not include alcoholic beverages and Prepared meals, snacks, sweets, etc.
Price Stabilization Fund (PSF)	Set up in 2014-15 under Department of Agriculture, Cooperation & Farmers Welfare to regulate price volatility of important agri-horticultural commodities like onion, potatoes and pulses.

Test your Learning

MCQs

1. Which of the following have been correct about retail Inflation:

1. It has steadily declined from 2022 to 2025.
2. It is largely driven by the decrease in core inflation and decrease in fuel price inflation.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

2. Which of the following reports are published by International Monetary Fund (IMF):

1. World Economic Outlook
2. Global Financial Stability Report
3. Greenhouse Gas Bulletin
4. Travel and Tourism Development Index

- (a) Both 1 and 2
- (b) 1, 2, 3
- (c) None
- (e) All of the above

3. Consider the following statements about Core Inflation:

1. It is the same as headline Inflation.
2. It includes food and fuel prices in its estimation.
3. It is not stable as it is affected by the temporary shocks.

Which of the following is/are correct?

- (a) Only One
- (b) Only two
- (c) None
- (d) Only three

4. Consider the following about Consumer Food Price Index (CFPI):
1. It has increased from 7.5% in FY24 to 8.4% in FY25.
 2. It is primarily driven by a few food items particularly vegetables and pulses.
- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2
5. Which of the following measures was NOT taken to control food inflation related to cereals in India?
- (a) Stock limits on wheat
(b) Sale of wheat flour and rice under Bharat brand
(c) Duty-free import of wheat
(d) Offloading wheat and rice from central pool

Mains Questions

1. Highlighting the factors driving food inflation in India, discuss the measures taken by the government. Also, suggest measures that can be taken to address the rising food inflation.
2. State the differences between Headline Inflation and Core Inflation. Discuss the reasons for the decrease in domestic inflation.

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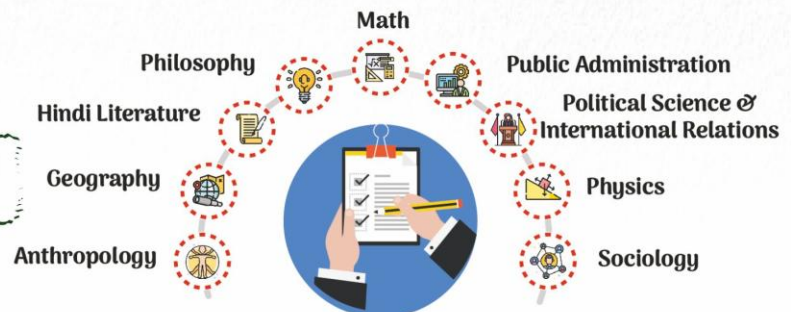
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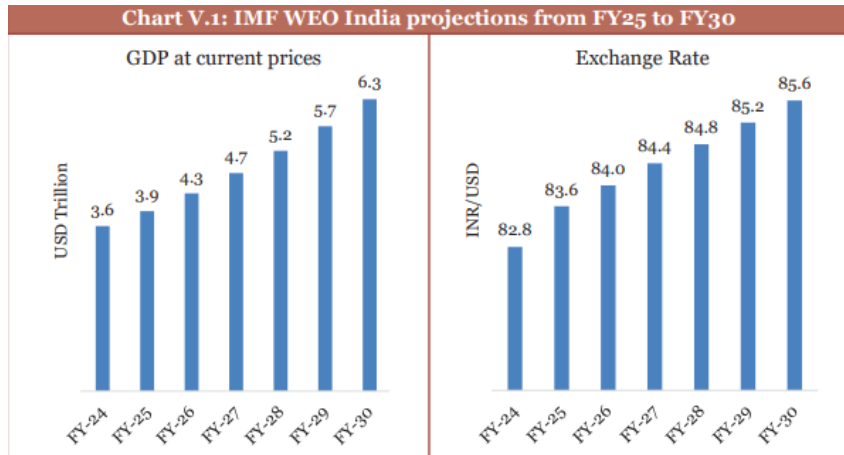
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Chapter 5: Medium Term Outlook: Deregulation Drives Growth

Introduction

- India needs a **growth rate of 8% at constant prices on average** for a decade or two in order to realise its economic aspirations of becoming Viksit Bharat by 2047.
- India needs to boost investment to **35% of GDP**, grow the manufacturing sector, and invest in technologies like AI, robotics, and biotechnology.
 - Additionally, it must create 7.85 million new **non-farm jobs** annually, achieve 100% literacy, and build future-ready infrastructure by 2030.
- World Economic Outlook of IMF** projects India to become a **USD 5 trillion economy by FY28** and reach a size of **USD 6.307 trillion by FY30**.
- Medium-term growth outlook for India must be assessed in context of a **new global reality – Geo-economic fragmentation, China’s manufacturing prowess and dependency of efforts for energy transition on China**.



Source: WEO, October 2024

Chapter Recap

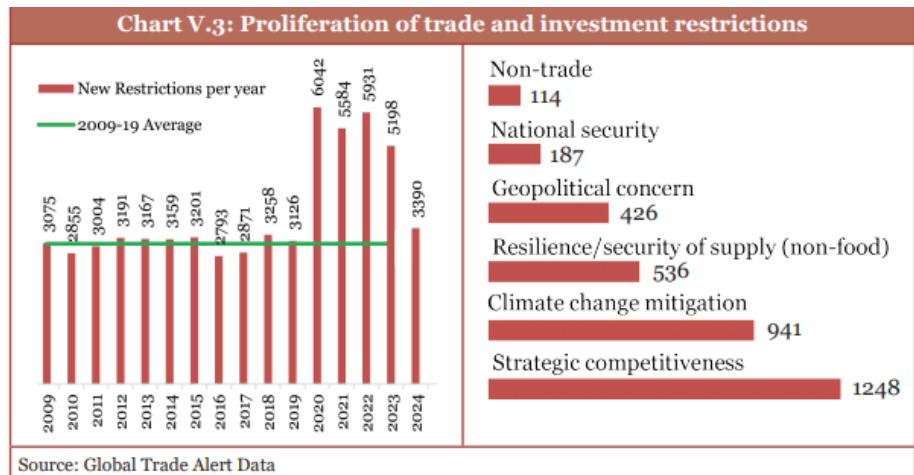
<p>Current Status</p> <ul style="list-style-type: none"> India targets 8% average growth over the next decade to become a developed nation by 2047. IMF projects India to become a USD 5 trillion economy by FY28 and USD 6.307 trillion by FY30. 	<p>Geo-Economic Fragmentation (GEF)</p> <ul style="list-style-type: none"> Impact of GEF: Global economic realignments, replacing globalization, increased global trade and investment restrictions, concentrated FDI flows.
<p>Deregulation and Economic Freedom: A Catalyst for Growth</p> <ul style="list-style-type: none"> States should systematically review regulations for cost-effectiveness, focusing on the Ease of Doing Business (EoDB) 2.0. 	

Geo-Economic Fragmentation – this time may be different

- Geo-Economic Fragmentation (GEF):** It refers to a policy-driven reversal of global economic integration, often motivated by strategic interests. This process involves disruptions in trade, capital, and migration flows, reshaping the global economy in ways that challenge the earlier trends of interconnectedness.
- Hyper-Globalization:** In recent decades, globalization has driven substantial growth in global trade, investment, and poverty reduction. The global economy tripled, lifting 1.3 billion people out of extreme poverty.
- Key Globalisation Trends**
 - Global trade grew from 39% of world GDP in 1980 to 60% in 2012, reflecting deeper market integration.
 - Foreign direct investment (FDI) inflows surged from USD 54 billion in 1980 to over USD 1.5 trillion in 2019, highlighting the rising role of multinational corporations.
- These statistics illustrate the profound changes globalisation has brought, driving economic integration and altering the global economic landscape. But, the next two decades are more likely to be about **economic fragmentation**.

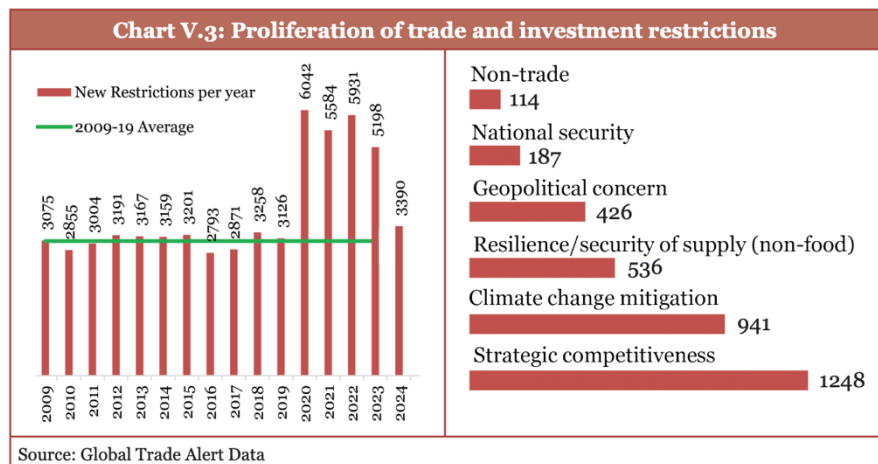
Growth implications of geo-economic fragmentation

- Rising Trade Restrictions:** Between October 2023 and October 2024, 169 new trade restrictions were introduced, affecting USD 887.7 billion worth of trade, a sharp increase from USD 337.1 billion the previous year.
 - This led to reduced **knowledge sharing** and less **cross-border investment**.
- Concentration of FDI:** Foreign direct investment (FDI) is increasingly flowing to geopolitically aligned countries, especially in strategic sectors, leaving emerging markets and developing economies at a disadvantage.
- Impact on Emerging Markets:** "Friend-shoring" and "re-shoring" are causing output losses for emerging markets and developing economies.
- Global Output Loss:** Trade fragmentation could reduce global output by 0.2% in a low-cost scenario and up to 7% in a high-cost scenario.
 - If technological decoupling happens, output losses could reach 8-12% of GDP in select countries.
- Shift in Capital Flows:** As global growth slows, capital is expected to move towards economies with more sustainable growth.



The Elephant And The Dragon In The Room

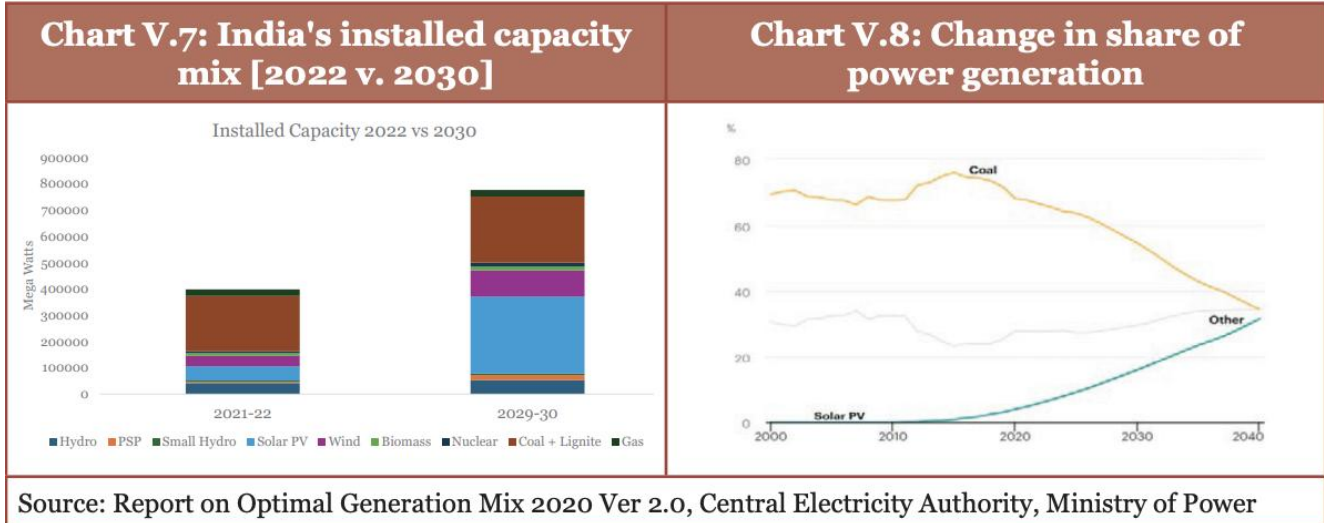
- The global economy is undergoing a significant shift, with long-standing principles being re-evaluated and some losing relevance.
- China's growing role in global supply chains is reshaping the **economic landscape**, leading many countries to operate in an **unfamiliar environment** marked by uncertainty about the future.
- China has become a **dominant force in global manufacturing and energy transition sectors**, leveraging its competitiveness to access and control critical resources for supply chains.
- In 2000, the US and its allies dominated global industrial production, while China accounted for just 6%. However, by 2030, China is projected to produce **45% of global manufacturing**, surpassing the US and its allies.



Climate Transition, China And Geopolitics

- Climate change has a major impact on the global economy. 1°C rise in temperature can reduce global GDP by 12%, with extreme weather events being key drivers.

- China, the US, the EU, and other G7 nations account for over 50% of global greenhouse gas emissions and aim for net-zero emissions by 2050.
 - However, **trade conflicts** around environmental goods and renewable energy technologies could slow **the green energy transition** and harm the global economy.
- India's "**Panchamrit**" framework will drive a major shift in its energy mix by 2030, increasing reliance on renewable energy, especially solar and wind, while reducing dependence on coal and lignite.



China's Role in the Global Energy Transition

- **Solar Energy Leadership:** China leads in solar photovoltaic (PV) manufacturing producing over 80% of solar panel components, and housing the top 10 PV equipment suppliers.
 - While this reduces costs, it increases risks of supply disruptions.
- **Wind Energy & Batteries:** China controls 60% of global wind energy capacity and nearly 80% of battery manufacturing.
- **Electric Vehicle Supply Chain:** China dominates the entire EV supply chain, processing 70% of global rare earth minerals crucial for batteries.
 - This creates challenges for **India's EV manufacturing**, which relies on imported minerals, as China's control over critical minerals like nickel, cobalt, and lithium poses significant supply risks.
- **Global Energy Transition Issues:** Disruptions in critical mineral trade could reduce renewable energy and EV investments by up to **30% by 2030 (IMF)**.
 - Multilateral structures supporting clean energy face increasing challenges.

Issues with India's Growth Prospects

- **Impact on India's Energy Transition:** India's EV manufacturing is hindered by dependence on imported minerals. China controls key minerals like nickel, cobalt, and lithium, creating supply risks.
- **Micro, Small, and Medium Enterprises (MSMEs):** Many stay small to avoid regulations, limiting growth, innovation, and productivity. Efforts like the **Jan Vishwas Act** aim to ease regulations, helping MSMEs..
- **Challenges with Current Regulations:** Regulations increase costs and limit growth. Factory rules discourage economies of scale, while overtime and compliance laws hinder job creation and innovation.
- **Gold-Plated Regulations:** Overly restrictive regulations based on unrealistic assumptions hurt businesses. Simplifying them to **international standards** could boost growth.

Way Forward and Outlook

Systematic Deregulation for States

- **Identify Areas for Deregulation:** States should focus on areas like land, local trade, and labor laws, removing unnecessary regulations that add costs and delays. Initiatives like **Ease of Doing Business (EoDB) 2.0** can drive this change.
- **Estimate Costs of Regulations:** States should assess the costs of regulations before passing them. **For example**, factory setback rules lead to land loss and job cuts, with high opportunity costs.
 - States should also factor in unintended consequences, **like long approval times** due to unnecessary environmental classifications.

• **Design Reform Options:** Deregulation should be **carefully designed** by evaluating each regulation’s impact and considering the state’s capacity. Low-state capacity can result in unrealistic expectations and burdensome compliance processes.

• **Learning from Other States:** States can adopt successful reforms from others. For example, Andhra Pradesh, Karnataka, and Haryana deregulated **night shifts for women** in IT industries.

• **Global Lessons:** States can learn from global examples like **the U.S. Office of Management and Budget, the U.K.’s ‘one-in, two-out’ policy**, and New Zealand’s Ministry of Regulation, applying these models to India’s context.

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

Making the Case for Ease of Doing Business (EoDB) 2.0

- **Liberalizing Standards and Controls:** Indian states impose 139 outdated restrictions on women in factory jobs, **despite evidence showing no health risks**. States should revisit these rules to enable women’s participation in higher-paying roles.
- **Rationalizing Parking Norms:** Restrictive parking rules force commercial buildings to add unnecessary floors, **increasing costs and wasting land**. Revising these norms could **optimize land use**, especially in key sectors like tourism, hospitality, and IT.
- **Legal Safeguards for Penalties and Enforcement:** States impose penalties without safeguards like show-cause notices or reasoned orders, leading to poor decisions and higher investment risks. Ensuring **procedural safeguards** can reduce legal risks, boost job creation, and encourage growth..
- **Reducing Tariffs and Fees:** High electricity tariffs (10-25% above supply cost) make Indian industries less competitive. **For instance, Vietnam charges 10% less** than the cost of generation. Reducing tariffs would boost industrial growth.
- **Applying Risk-Based Regulation:** Indian states limit private involvement in enforcing building safety regulations. Countries **like Australia and Canada use public-private partnerships (PPPs)** effectively. Involving private entities would improve enforcement and safety.

What the Budget Says?

- **National Manufacturing Mission - Furthering “Make in India”:** To focus on ease and cost of doing business; create future ready workforce for in-demand jobs; develop vibrant and dynamic MSME sector, clean tech manufacturing for climate friendly development.



- It will cover small, medium, and large industries by providing policy support, execution roadmaps, governance, etc.
- **Streamline the process of transfer pricing:** A new scheme will allow determining arm's length prices for international transactions over a 3-year block period.
- **Scope of safe harbour rules expanded:** With a view to reduce litigation and provide certainty in international taxation

Glossary

Terms	Meaning
Geo-Economic Fragmentation (GEF)	A policy-driven reversal of global economic integration, which is reshaping the global economy through trade, capital, and migration flows.
Energy Transition Technologies	Technologies involved in the shift from fossil fuels to renewable energy sources, such as solar and wind power. China leads in manufacturing these technologies, particularly solar panels and batteries.
Ease of Doing Business (EoDB)	A government initiative to improve the business environment by simplifying regulations and making it easier for businesses to operate in India.
Deregulation	The process of removing or reducing government regulations on businesses to foster

Test your learning

MCQs

1. **Consider the following statements regarding India's economic outlook:**
 1. India's current account deficit is projected to rise to 2.2% of GDP by FY30.
 2. The Survey highlights the importance of trusting people and organizations to drive economic growth.
 3. The IMF projects India's inflation rate to increase significantly over the next five years.

How many of the above statements are correct?

 - (a) Only one
 - (b) Only two
 - (c) All three
 - (d) None of the above

2. **With reference to the exchange rate projection for the Indian Rupee, consider the following statements:**
 1. The IMF expects the rupee to depreciate by an average of 3.3% per annum over the next five years.
 2. The rupee depreciated at an average rate of 3.3% annually in the three decades up to FY24.

Which of the statements given above is/are correct?

 - (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

3. **Which of the following best describes the trend in global extreme poverty rates?**
 1. The proportion of people living on less than USD 2.15 per day declined from 42% in 1981 to 8.4% in 2019.
 2. This decline was mainly driven by rapid economic growth in developed economies.

Which of the statements given above is/are correct?

 - (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2

4. How many of the following statements are correct?

1. Geo-Economic Fragmentation (GEF) refers to a market-driven reversal of global economic integration.
 2. GEF is replacing globalization, leading to imminent economic realignments and readjustments.
 3. China is projected to account for 45% of all global manufacturing by 2030, outmatching the US and its allies.
 4. China holds nearly 80% share of solar panel production and dominates the world's battery manufacturing capacity.
- (a) Only one
(b) Only two
(c) Only three
(d) All four

5. How many of the following statements are correct?

1. The share of renewable energy, especially solar and wind, in India's installed capacity is expected to decrease by 2030.
 2. The share of coal and lignite in India's installed capacity is projected to fall sharply by 2030.
 3. The shift towards renewable energy in India will not require any changes in the country's energy mix.
- How many of the above statements are correct?
(a) Only one
(b) Only two
(c) All three
(d) None of the above

Mains Questions

1. How does Geo-Economic Fragmentation (GEF) impact global trade and investment flows? Discuss its implications for emerging economies like India.
2. India aims to achieve an 8% growth rate to become a developed economy by 2047. What are the major challenges and reforms needed to attain this target?



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Chapter 6: Investment and Infrastructure: Keeping It Going

Introduction

- Central focus of the Government in last five years was on increasing public spending on infrastructure-physical, digital and social, and speeding up approvals, execution and resource mobilization.
- Union Government’s **capital expenditure** on key infrastructure sectors has **grown at a rate of 38.8%** from FY20 to FY24.
- **National Infrastructure Pipeline (NIP)** was launched with a target of infrastructure investment of around ₹111 lakh crore from FY20 to FY25. It serves as a centralised platform to facilitate projects monitoring and review.

Chapter Precap

Current Status <ul style="list-style-type: none"> • Capital expenditure on infrastructure sectors has increased. • National Infrastructure launched. 	Physical Connectivity: Developments across Infrastructure sectors <ul style="list-style-type: none"> • Railway, Road, Civil Aviation, Ports and Shipping, Power
Digital Connectivity <ul style="list-style-type: none"> • Telecommunication, Information Technology 	Rural Infrastructure <ul style="list-style-type: none"> • Rural Drinking Water and Sanitation • Urban, Tourism and Space
Urban Infrastructure <ul style="list-style-type: none"> • Initiatives and status 	Tourism Infrastructure <ul style="list-style-type: none"> • Various Initiatives taken
Space Infrastructure <ul style="list-style-type: none"> • Space Assets, Space Vision 2047 	

Physical Connectivity: Developments across Infrastructure Sectors

Railway Sector

Current Status

- Between April- October 2024, **17 new pairs of Vande Bharat trains** introduced to the network, and 228 coaches were produced.
- Indian Railways targets net zero emissions with **30 GW of renewable energy by 2029-30**.

Key Initiatives in rail system

- **Gati shakti multi-modal Cargo Terminal (GCT):** 91 GCTs commissioned and 234 locations approved by October 31, 2024.
- **Public Private Partnership (PPP):** 17 projects have been completed (₹16,434 crore) and 8 ongoing (₹16,614 crore) under the PPP model.
- **Major Projects:** Mumbai-Ahmedabad High-Speed Rail Project, Dedicated Freight Corridors (DFCs)

Steps for enhancing passenger amenities in railways

- **Amrit Bharat Station Scheme:** Enhancing railway station amenities with 1337 stations been identified for redevelopment.
- **One Station One Product Scheme:** This scheme is operational at 1,900 stations, featuring 2,163 outlets that benefit 79,380 local artisans by providing sales opportunities for their products.

Key initiatives to improve signalling systems in railways

- **Kavach:** This indigenously developed Automated Train Protection system has seen ₹1,547 crore invested (till November 2024).
- **Electronic interlocking:** EI systems have been installed at 227 stations in FY25, increasing the coverage to a total of 3,576 stations.
- **Automatic Block Signalling (ABS):** ABS is being installed to enhance capacity on high-density routes.

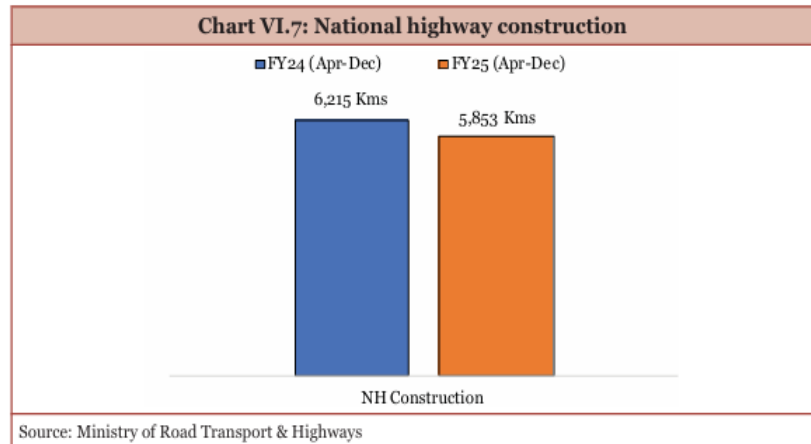
Road transport

Current Status

- India has a **total road network of 63.4 lakh km**, including National highway (NH) network of 146,195 km.
- **National Industrial Corridor Development Programme** aims to create advanced industrial cities in India, positioning them as major manufacturing and investment hubs.
- **NH carries about 40% of the overall road freight traffic.**
- **5853 km of NH was constructed in FY25.**

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.
- **National High-Speed Corridors (HSCs):** Length of HSCs expanded from 93 km in 2014 to 2,474 km in 2024.



Key Initiatives for logistics efficiency in road connectivity

- **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, Joghghopa and Bangalore have been awarded.
- **Vehicle scrapping policy; Ropeways projects development:** Fifteen projects are in progress.

Civil aviation

Current Status

- 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 airport's **cargo handling capacity** has been gradually increasing, reaching 8.0 million MT in FY24.

Key Initiatives

- **UDAN scheme:** 619 routes connecting 88 airports, including two water aerodromes and 13 heliports, have been operationalised so far.

Ports and shipping

Current Status

- **Improvements in operational efficiency and reduction in average container turnaround time** in major ports (48.1 hours in FY24 to 30.4 hours during FY25 (Apr-Nov)).
- **Progress under Sagarmala programme** highlights the highest project completion rates in port modernisation and port-led industrialisation.

Major achievements and initiatives in port sector

- **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.
- **Port-led Industrialisation**
 - **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.
- **International Linkages**
 - Chabahar Port and INSTC: Shahid Beheshti Port at Chabahar connects Mumbai to Eurasia via the INSTC
- **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.

Inland waterways transformation: key projects and initiatives

- **Harit nauka Guidelines:** Launched in 2024, it aims to green 1,000 inland vessels over next ten years.
- **Cargo promotion Scheme:** This initiative encourages cargo owners to switch from rail and road to inland waterways.

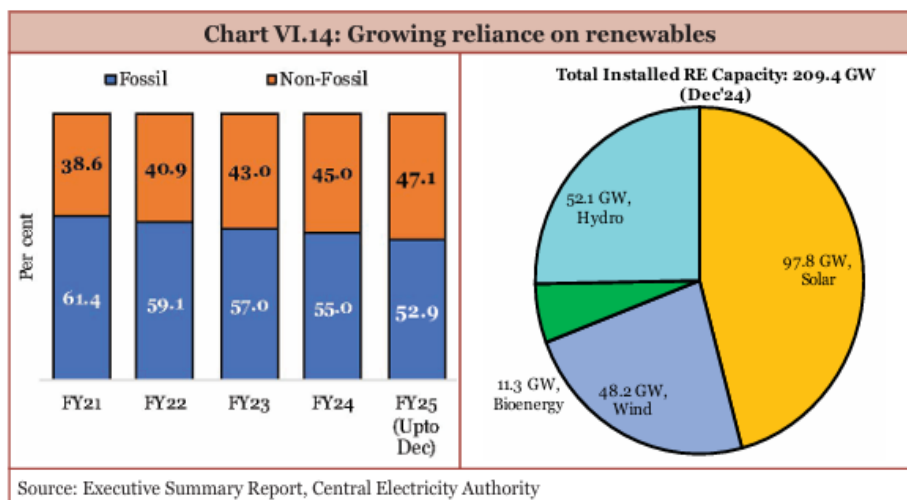
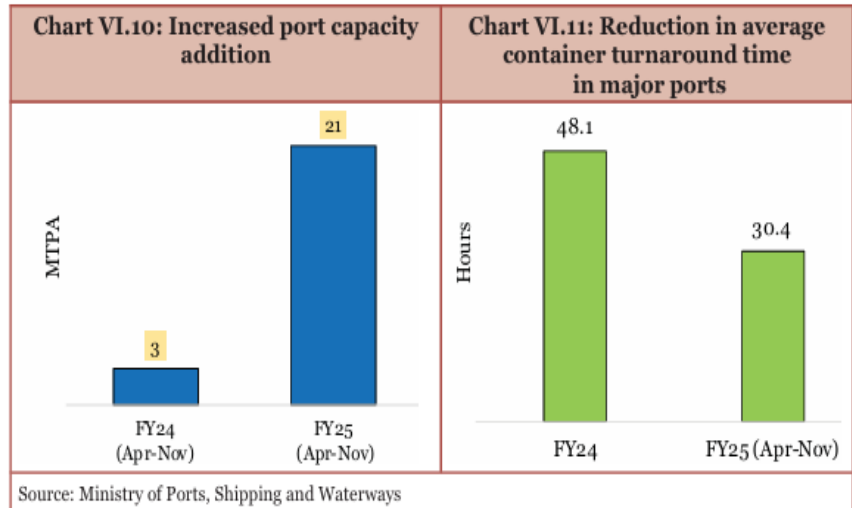
Power Sector

Current Status

- Installed capacity **rising by 7.2% year-on-year (YoY)** to 456.7 GW as of November 2024.
- **Share of renewable energy** in India's total installed capacity now stands at **47%**.
- Total **renewable energy installed capacity increased by 15.8% YoY**.

Key Initiatives

- **Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)**, Integrated Power Development Scheme (IPDS), Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)
- **Revamped Distribution Sector Scheme**, Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), Separate electricity connections for charging EVs supporting India's Net Zero goal by 2070 etc.



Digital Connectivity

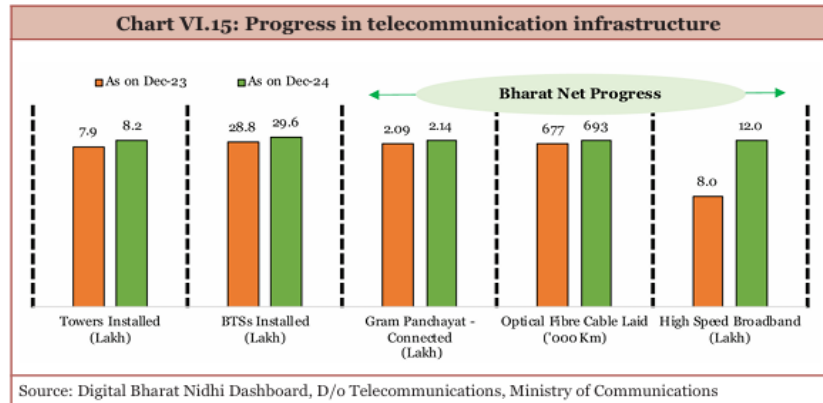
Telecommunications

Current Status

- By October 31, 2024, 5G services were launched in all states and union territories.

Key Initiatives

- Bharat Net Project** to connect all Gram Panchayats and villages with broadband.
- Telecom development for Andaman & Nicobar Islands and Lakshadweep Islands.
- Aspirational districts scheme:**
 - 502-Village Scheme: 215 towers commissioned, covering 251 villages across 112 districts in 4 states.



Information Technology

Current Status

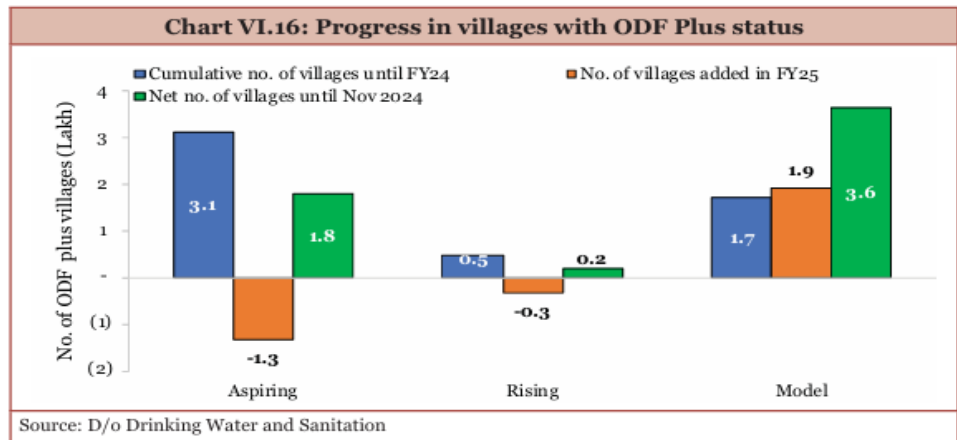
- As of November 2024, National Informatics Centre supports 1,917 applications on its cloud, under **MeghRaj, GI Cloud initiative**.
 - MeghRaj** aimed at **delivering ICT services via cloud computing** to Central and State/UT Departments.
- Data centre market** in India is expected to **grow** from US\$4.5 billion in 2023 to **US\$11.6 billion by 2032**.

Rural Infrastructure

Rural Drinking Water and Sanitation

Status and Initiatives

- Jal Jeevan Mission (2019):** Over 12 crore families have gained access of piped drinking water since 2019.
 - States achieved 100% coverage:** Arunachal Pradesh, Goa, Haryana, Himachal Pradesh, Gujarat, Punjab, Telangana and Mizoram.
 - UTs achieved 100% coverage:** Andaman & Nicobar Islands, Dadra Nagar Haveli & Daman Diu and Puducherry.
- Swachh Bharat Mission Phase II – Grameen (SBM-G):** During April-November 2024, **1.92 lakh villages were incrementally declared ODF+** under model category, taking the **total number of ODF+ villages to 3.64 lakh**.



Urban Infrastructure

- **Swachh Bharat Mission-Urban**
 - It envisions creating 'garbage-free cities', integrating waste management and sanitation practices aligned with sustainability and circular economy principles.
- **Pradhan Mantri Awas Yojana- Urban (2015):** Completed over 89 lakh houses in urban areas.
- **Urban transport:** Growing with metro and rapid rail systems operational or under construction in 29 cities, with **1010 km currently operational in 23 cities** and an additional 980 km underway.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme:** Under it, tap water coverage has increased to 70%, and sewerage coverage has risen to 62%.
- **Smart Cities Mission:** As of 13 January 2025, 8,058 projects worth 1.64 lakh crore have been proposed, with 7,479 projects worth 1.50 lakh crore completed.

Initiatives driving Urban transformation:

- **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 learning platform:** A scalable platform designed for capacity building among urban local bodies
- **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.

Tourism Infrastructure

Status and Initiatives

- **Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASHAD):** To develop tourism infrastructure at identified pilgrimage destinations and heritage cities.
 - As of December 2024, 26 out of 48 projects have been completed.
- **Swadesh Darshan Scheme 2.0 (2022):** To develop sustainable and responsible tourism destinations. As of December 2024, 75 out of 76 projects have been completed.

Space Infrastructure

Status and Initiatives

- India currently operates **56 active space assets** including 19 communication satellites, 9 navigation satellites, 4 scientific satellites, and 24 earth observation satellites.
- **Government's Space Vision 2047 includes four projects** i.e.
 - **Gaganyaan follow on mission** which will pave the way for establishment of first module of Bhartiya Antariksh Station.
 - **Chandrayaan-4 Lunar Sample Return Mission.**
 - Venus Orbiter Mission.
 - Development of Next Generation Launch Vehicle.

Way Forward and Outlook

- **Net Zero commitments** requires stress on creating renewable energy capacities.
- **Transport Modernisation:** Accelerating efforts to **build integrated multi-modal transport**, coupled with modernisation of existing physical assets will improve efficiency and last-mile connectivity.
- **Private Participation:** It should **accelerate in critical infrastructure sectors** in ways like programme and project planning, financing, construction, maintenance, monetisation and impact assessment.
 - Government has created mechanisms like **National Infrastructure Pipeline and National Monetisation Pipeline** to facilitate private sector involvement in infrastructure.



What does the Budget say?

Expenditure:

- **Transport:** 5,48,649 crores
- **Energy:** 81,174 crores
- **IT and Telecom:** 95,298 crores
- **Rural Development:** 2,66,817
- **Urban Development:** 96,777

Test Your Learning

MCQs

1. Consider the following initiatives and their objectives:

1. Kavach – Automated Train Protection system
2. Gati Shakti – Multi-modal logistics and infrastructure development
3. Harit Nauka – Greening inland water vessels

Which of the above pairs is/are correctly matched?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 2, and 3
- (d) 1 and 3 only

2. Which of the following is NOT a part of India's Space Vision 2047?

- (a) Bhartiya Antariksh Station
- (b) Chandrayaan-4 Lunar Sample Return Mission
- (c) Mars Sample Return Mission
- (d) Venus Orbiter Mission

3. Consider the following programs and their focus areas:

1. UDAN Scheme – Affordable air travel to underserved regions
2. PM Awas Yojana – Providing affordable urban and rural housing
3. Swadesh Darshan – Development of pilgrimage sites only

Which of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

4. With reference to the Amrit Bharat Station Scheme, consider the following statements:

1. It aims at the modernization and redevelopment of railway stations across India.
2. It focuses only on major metropolitan stations.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

5. The Bharatmala Pariyojana aims to:

- (a) Develop waterways for improved cargo transportation.
- (b) Develop an extensive railway network across India.
- (c) Develop national highways with a corridor-based approach.
- (d) Promote electric vehicle charging infrastructure on highways.

Mains Questions

1. Infrastructure development in rural areas is essential for inclusive growth. Discuss the role of schemes like Jal Jeevan Mission, Swachh Bharat Mission-Grameen, and PMGSY in improving rural infrastructure and their impact on socio-economic development.
2. With the increasing focus on digital connectivity, initiatives like BharatNet and 5G rollout are transforming India’s communication landscape. Analyze the challenges and opportunities associated with the digital infrastructure expansion in India.

CSAT

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(Approach is to revise and strengthen fundamental concepts, enhance problem-solving abilities, hone analytical skills, foster critical thinking, and improve comprehension skills for Prelims 2025.)

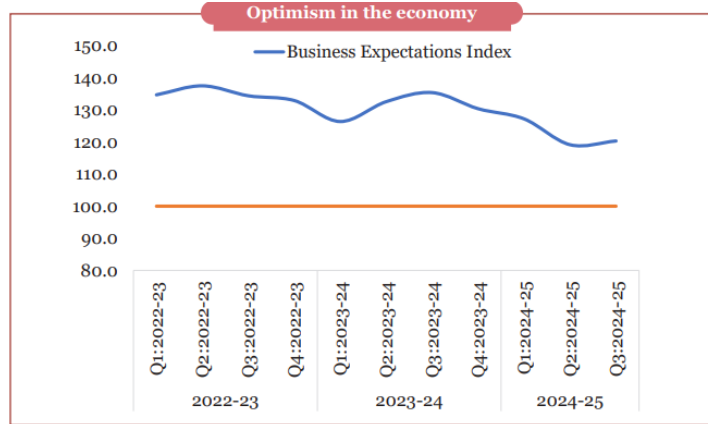
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Chapter 7: Industry: All About Business Reforms

Introduction

- India's manufacturing sector is growing, but challenges like geopolitical tensions, trade policies, and supply chain disruptions affect export demand. The sector is expected to grow by 6.2% in FY25, driven by electricity and construction.
- India holds 2.8% of the global manufacturing share, compared to China's 28.8%, offering significant growth potential.
- Sectors like cement, steel, automobiles, electronics, and pharmaceuticals show promise, with government schemes like PLI driving growth.



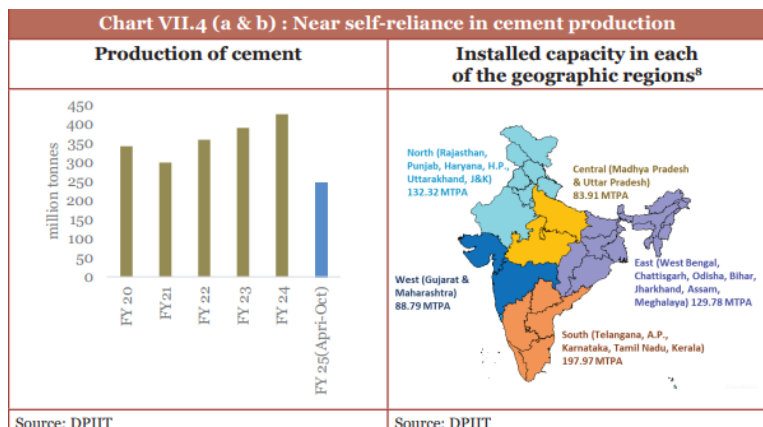
Chapter Precap:

<p>Outcomes</p> <ul style="list-style-type: none"> India's manufacturing sector is showing growth, with a projected 6.2% increase in FY25. India holds 2.8% of global manufacturing share, with potential for significant growth. Geopolitical tensions, trade policies, and supply chain disruptions remain key challenges. 	<p>Industries</p> <ul style="list-style-type: none"> Cement: India is the second-largest producer globally. Steel: Growth driven by policies like the National Steel Policy and government infrastructure projects. Chemical and Petrochemical Industries: India relies on imports for 45% of petrochemical intermediates. Capital Goods: Government promotion of Smart Manufacturing and Industry 4.0 to address technology gaps. Electronics: India manufactures 99% of its smartphones. Textiles: Major employer contributing 11% to manufacturing GVA. Pharmaceuticals: India ranks third globally in volume, with a turnover of ₹4.17 lakh crore in FY24 etc
<p>Innovation</p> <ul style="list-style-type: none"> India ranks sixth globally in patent filings (WIPO 2022). The National IPR Policy 2016 and recent patent rule changes have simplified the process. 	<p>State-Wise Patterns in Industrial Production</p> <ul style="list-style-type: none"> Significant regional disparities in industrial production, with Gujarat, Maharashtra, Karnataka, and Tamil Nadu accounting for 43% of India's industrial value.

Core Input Industries

Cement

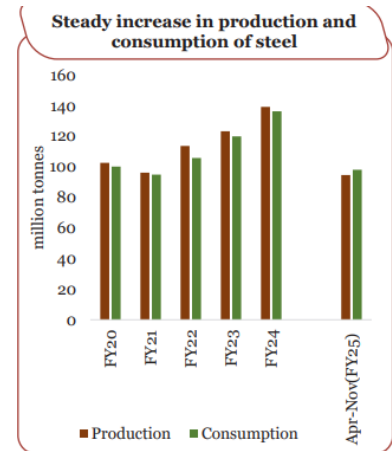
- India is the second-largest cement producer globally, with per capita consumption of 290 kg, compared to the global average of 540 kg.
- Around 87% of India's cement industry is concentrated in states like Rajasthan, Andhra Pradesh, Telangana, and others. The industry has sufficient capacity to meet domestic demand.



- Government projects like highways, railways, housing, and rural development are driving strong demand for cement.
- The cement industry has an environmental impact but is actively working to reduce carbon emissions by 2070.

Steel

- Steel demand in India is driven by sector growth, government policies like the National Steel Policy and PLI schemes, and initiatives in housing and infrastructure development.
- The government's Steel Scrap Recycling Policy promotes efficient recycling, reducing energy use by 40%, water consumption by 40%, and greenhouse gas emissions by 58%.
- The Steel Scrap Recycling Policy promotes efficient recycling, and securing high-quality scrap is vital for transitioning to green steel and supporting future industry growth.



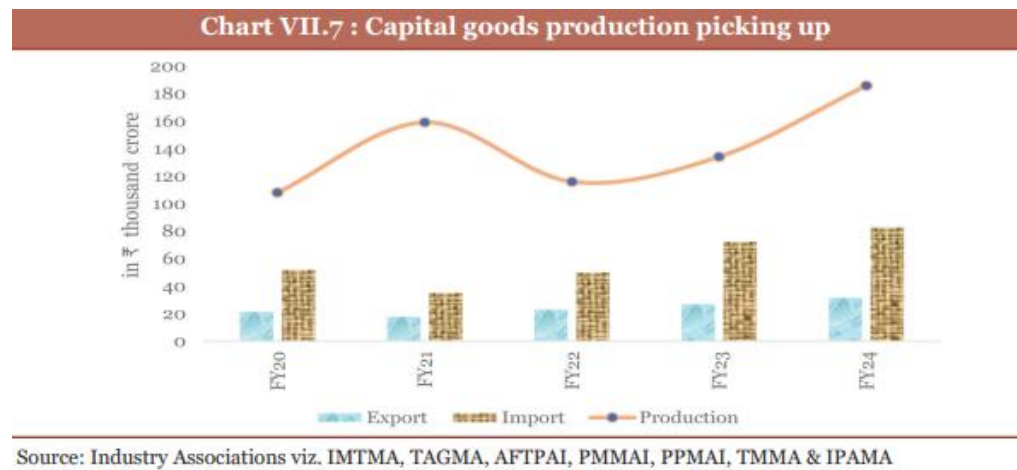
Chemical and Petrochemical Industries

- The chemicals sector accounted for 9.5% of manufacturing GVA in FY23. India is a net importer, relying on imports for about 45% of petrochemical intermediates.

Capital Goods

The sector is reliant on imports for high-end machinery due to technology gaps.

- To address this, the government launched Phase II of the Scheme for Enhancement of Competitiveness of the Capital Goods Sector.



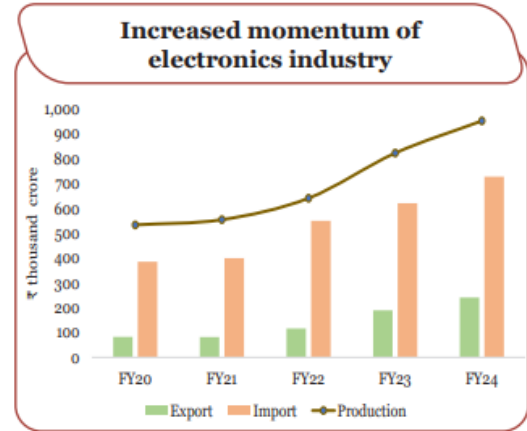
- Phase II focuses on technology innovation, advanced centers of excellence, and common engineering facilities to boost global competitiveness.
- The government is also promoting Smart Manufacturing and Industry 4.0, supporting the creation of SAMARTH Udyog centres to help SMEs adopt new technologies.

Automobile Industries

- The Indian automobile industry drives economic growth, with domestic sales rising by 12.5% in FY24. Recognizing its potential, the government has extended the PLI Scheme for another year.

Electronics

- India now **manufactures 99% of its smartphones**, reducing reliance on imports. Growth has been driven by a large domestic market, skilled talent, and low-cost labor. For example, the PLI scheme helped cut mobile phone imports from 78% of market value in FY15 to just 4% in FY23
- Programmes such as **Make in India** and **Digital India**, along with improved infrastructure, ease of doing business, and various incentives, have boosted domestic manufacturing and drawn foreign investments.
- However, India's electronics market makes up just 4% of the global share, mainly **focused on assembling, with limited progress in design and components**.

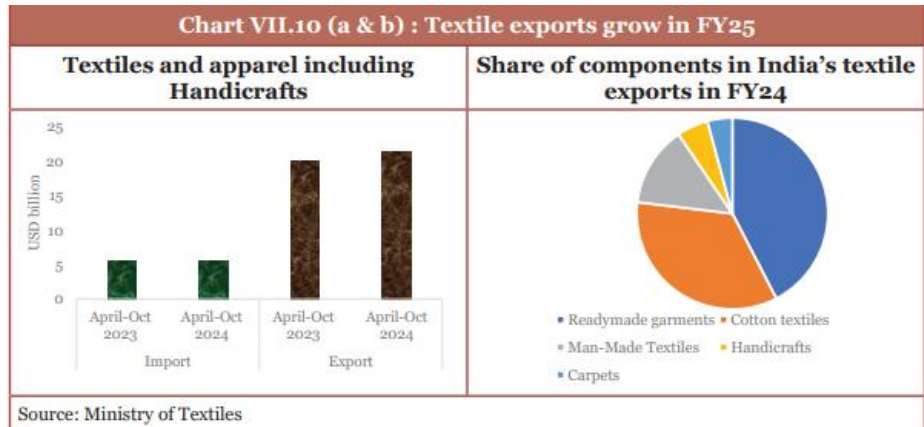


Textiles

- The textile industry is a key employment generator, contributing around 11% to India's manufacturing GVA.
- India is a **top producer of jute** and ranks second globally in cotton, silk, and man-made fibres.
- It is the **sixth-largest exporter of textiles** and apparel, with a 4% share of global trade.

Textiles and apparel, including handicrafts, made up about 8% of India's total merchandise exports in FY24.

India is aiming to diversify its export markets beyond cotton textiles. As global demand for **man-made fibres (MMF) grows**, India is focusing on increasing its MMF share alongside cotton textiles.



- India's **technical textiles sector** is growing fast, ranking fifth globally, with government support through the PLI scheme and quality control regulations for 68 products.
- Challenges:**
 - MSME dominance** limits scale and efficiency, fragmentation increases logistics costs, reliance on cotton limits competitiveness, **limited foreign direct investment**, lack of technological advancement, dependence on **imported machinery**, significant **skill gap** hindering productivity and innovation.

Pharmaceuticals

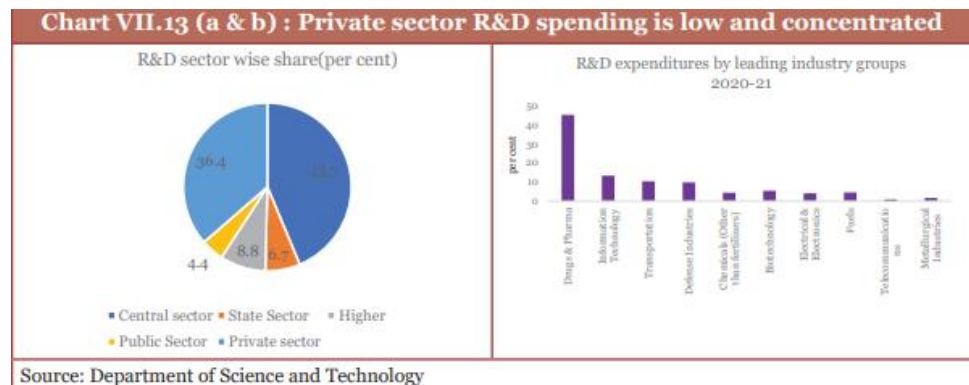
- India's pharmaceutical industry, **the third-largest globally by volume**.
- Government initiatives like the PLI scheme and Strengthening of Pharmaceuticals Industry (SPI) aim to boost self-reliance and reduce dependence on imports for **Key Starting Materials (KSMs)**, **Drug Intermediates**, and **Active Pharmaceutical Ingredients (APIs)**.
- India's medical devices holds 1.5% of the global market share **and ranks fourth in Asia**, after Japan, China, and South Korea. Globally, India is among the top 20 medical device markets.
- India is making progress in **cell and gene therapy**, with the approval of its first indigenously developed **CAR-T cell therapy**.
- To speed up access to new drugs, the Central Drugs Standard Control Organisation now allows **waivers for local clinical trials** for drugs approved in the USA, UK, Japan, Australia, Canada, and the EU.

Flourishing Innovations

- India's rank in the **Global Innovation Index** has risen to 39th in 2024, up from 81st in 2015.
- India has a strong intellectual property (IP) ecosystem, ranking 6th globally for patent filings (WIPO 2022).
- Key areas for patents include **computer & electronics**, mechanical & biomedical, and communications.
- Since the National IPR Policy 2016, India has streamlined patent, design, copyright, and trademark processes, with the 2024 Patent Amendment Rules further simplifying filing and maintenance.
- **Key Interventions:**
 - Expedited patent examination for start-ups, SMEs, women, and academic institutions.
 - **Fee reductions** for start-ups and MSMEs.
 - **Digitalization**, AI/ML search systems, and virtual hearings to enhance efficiency.
 - Support for start-ups through **the IP Protection Scheme** and the **IP Saathi Chatbot for guidance**.

- **Challenges:**

- India's R&D is just **0.64% of GDP**, mostly **government-funded**, far below China, Japan, South Korea, and the USA. In the USA, companies like Google and Amazon fund 70% of R&D.
- Industrial R&D is low and concentrated in a few sectors like **pharmaceuticals, IT, transportation, defense, and biotechnology**.
- Public sector R&D is mainly focused on **defense, fuels, and metallurgy**.
- India's R&D has traditionally emphasized **basic research over applied research**, which limits private investment.



Micro Small And Medium Enterprises (MSMEs)

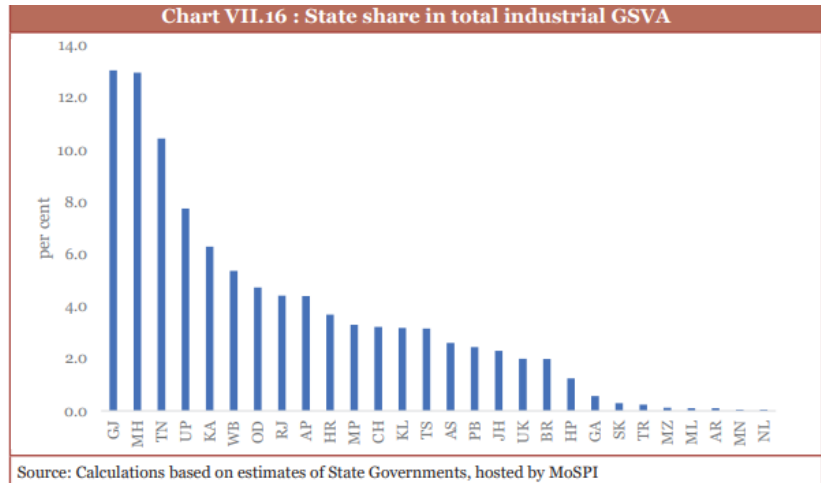
The MSME sector is vital to India's growth, driving entrepreneurship and creating jobs at low capital costs. As of November 2024, MSMEs employ 23.24 crore people, second only to agriculture.

Key interventions:

- **Udyam Registration Portal** : Simplified the registration process for MSMEs with a self-declaration system. Over 2.39 crore informal micro enterprises were formalized through the Udyam Assist Platform.
- **Credit Guarantee Scheme Revamp**: The Credit Guarantee Fund Trust for MSEs received ₹9,000 crore to facilitate ₹2 lakh crore in additional credit, with an increase in credit limits and reduced guarantee fees.
- **TReDS Platform**: Facilitates timely payments to MSMEs by buyers such as government departments and large corporates.
- **Self-Reliant India Fund (SRI Fund)**: Launched with a corpus of ₹50,000 crore to provide equity funding to MSMEs with scaling potential.
- **MSME Samadhan & CHAMPIONS(Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength) Portals**: Help address delayed payment issues by providing a platform for MSEs to file complaints and track payments from government entities and large buyers.
- **MSE-Cluster Development Programme (MSE-CDP)**: Focuses on developing MSME clusters across the country through Common Facility Centres (CFCs) to improve technology, skills, and productivity.

State-Wise Patterns In Industrial Production

- There are significant developmental disparities across Indian states, with different states excelling in various sectors such as agriculture, manufacturing, tourism, and finance.
 - For example, **Gujarat, Maharashtra, Karnataka, and Tamil Nadu together account for 43% of India's industrial value, while the northeastern states contribute just 0.7%.**



- Key points:**
 - Industrial Dependence:** High industrial share doesn't always mean high income. States like Gujarat and Himachal Pradesh leverage industrial dependence for higher income, while others do not.
 - Mining Sector:** Mining makes up 8% of industrial output, with five states (Assam, Chhattisgarh, Gujarat, Maharashtra, Odisha) contributing 60% of mining GSVA.
 - Factory and Small Enterprises:** Tamil Nadu has the highest factory concentration, while Bihar and Uttar Pradesh have more unincorporated manufacturing units.
 - State-level Policies:** State reforms, infrastructure, and human development drive industrial growth, with states that implemented strong reforms seeing progress.
 - Ease of Doing Business:** The **Business Reform Action Plan (BRAP)** categorizes states into four groups: top achievers, achievers, aspirers, and emerging ecosystems.

Outlook and Way Forward

- In the last decade, industries like chemicals, pharmaceuticals, automobiles, and machinery grew, but India still relies on imports for coal, capital goods, and chemicals.
- Industrial growth requires deregulation, **more R&D, innovation**, and a **skilled workforce**. Sectors like textiles and MSMEs need support in finance, compliance, and market access.
- State-wise industrial strengths and weaknesses vary, with business regulations influencing industrial progress. Thus, **grassroots-level reforms** are crucial.
- In this global climate, achieving India's manufacturing goals will require **synchronized efforts** from governments, the private sector, academic institutions, and financial stakeholders.

What does the Budget Say?

- Investing in Innovation:**
 - Research, Development and Innovation:** ₹ 20,000 crore to implement private sector driven Research, Development and Innovation initiative.
 - Deep Tech Fund of Funds:** To catalyze the next generation startups.
- Enhancement of credit availability** with guarantee cover for MSMEs.

Glossary

Terms	Meaning
Supply Chain Disruptions	Interruptions in the flow of goods and services, often due to external factors like pandemics, natural disasters, or political events.
Core Input Industries	Sectors that are critical to the functioning of the overall economy, such as cement, steel, chemicals, and petrochemicals, which are essential for manufacturing and infrastructure development.



Smart Manufacturing	The use of advanced technologies such as automation, artificial intelligence, and data analytics in the manufacturing process to improve efficiency and reduce costs
Foreign Direct Investment (FDI)	It refers to an ownership stake in a foreign company or project made by an investor, company, or government from another country.
MMF (Man-Made Fibres)	They are fibres made by man. MMF can be organic or inorganic. Organic MMF can be made from natural materials like wood, or are made from synthetic polymers.

Test your learning

MCQs

1. Consider the following statements regarding India's cement industry:

1. India is the second-largest cement producer globally.
2. The per capita cement consumption in India is higher than the global average.
3. Government infrastructure projects like highways and railways are driving strong demand for cement in India.

How many statements are **not** correct?

- (a) Only 1
- (b) Only 2
- (c) All of the above
- (d) None of the above

2. Consider the following statements regarding India's steel industry:

1. Steel demand in India is driven by government policies like the National Steel Policy and PLI schemes.
2. The Steel Scrap Recycling Policy is aimed at promoting green steel production.

Which of the following statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) None of the above

3. Consider the following statements about India's electronics sector:

1. India manufactures 99% of its smartphones, reducing import dependence.
2. India's electronics sector holds a 10% share in global electronics production.
3. The sector primarily focuses on assembling and has made limited progress in design and components.

How many statements are correct?

- (a) Only 1
- (b) Only 2
- (c) All of the above
- (d) None of the above

4. Consider the following statements about India's textile industry:

1. India is the second-largest global producer of jute, cotton, and silk.
2. India's textile industry accounts for 11% of India's manufacturing GVA.
3. India's textile export market share is above 10% globally.

How many statements are correct?

- (a) Only 1
- (b) Only 2
- (c) All of the above
- (d) None of the above

5. Consider the following statements regarding India's state-wise industrial patterns:

1. Gujarat, Maharashtra, Karnataka, and Tamil Nadu together contribute 43% to India's industrial value.
2. The northeastern states of India contribute 5% to India's industrial output.

Which of the statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) None of the above

Mains questions

1. Discuss the challenges and opportunities for India's manufacturing sector, focusing on key industries such as cement, steel, and pharmaceuticals. How can government initiatives like the PLI scheme contribute to the sector's growth?
2. India's manufacturing sector is expected to grow FY25. Analyze the role of electricity, construction, and technological advancements in driving this growth.

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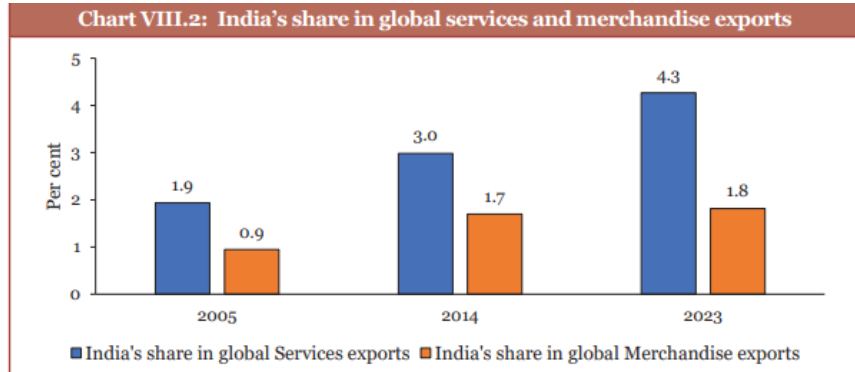
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Chapter 8: Services: New Challenges for the Old War Horse

Introduction

- Services contribute ~62% of global GDP and have driven growth in middle-income countries like **China, Thailand, and India**.
- Global supply chains** are facing major disruptions due to geopolitical issues, protectionism, wars, and climate challenges, posing risks to the global services sector.
- Manufacturing and services are becoming more **interconnected**, with **digital technologies and AI** reshaping service demand.
- India's share in global services exports **has steadily increased** over the past two decades, helping offset fluctuations in merchandise exports.
- India ranked **seventh globally** with a 4.3% share, behind the US (13%), UK (7.4%), Germany (5.5%), and others like Ireland, China, and France (around 5% each).



Chapter Precap

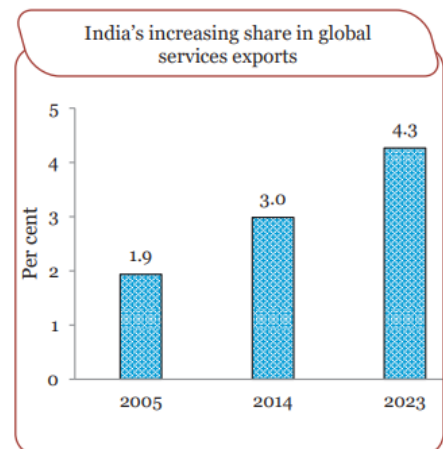
<p>Outcomes</p> <ul style="list-style-type: none"> The service sector's contribution to GVA increased from 50.6% in FY14 to 55.3% in FY25. India accounts for 4.3% of global services exports, ranking 7th worldwide. Services now provide employment to about 30% of India's workforce. 	<p>Key Sectors Performance:</p> <ul style="list-style-type: none"> Railways: Growth of 8% in passenger traffic in FY24. Road Transport: Accounts for 78% of the transport sector's GVA. Aviation: India is the fastest-growing aviation market globally. Ports, Waterways, and Shipping: Focus on maritime growth through the Maritime India Vision 2030. Tourism and Hospitality: Regained pre-pandemic GDP contribution of 5%. Telecommunication: Second-largest telecom market with rapid 5G rollout,
<p>State-Wise Analysis</p> <ul style="list-style-type: none"> Karnataka and Maharashtra combined contribute over 25% of India's total service sector GSVA, while 19 other states contribute only 25%. 	

Services sector performance in India

- The service sector's contribution to total GVA has risen from 50.6 per cent in FY14 to 55.3 per cent in FY25 (First Advance Estimates).
- It also provides employment to **approximately 30 per cent** of the workforce Services.
- It **contributes indirectly** to the GDP through the **servicification** of manufacturing, i.e., increasing utilization of services in manufacturing production and post-production value addition.

Trade in the services

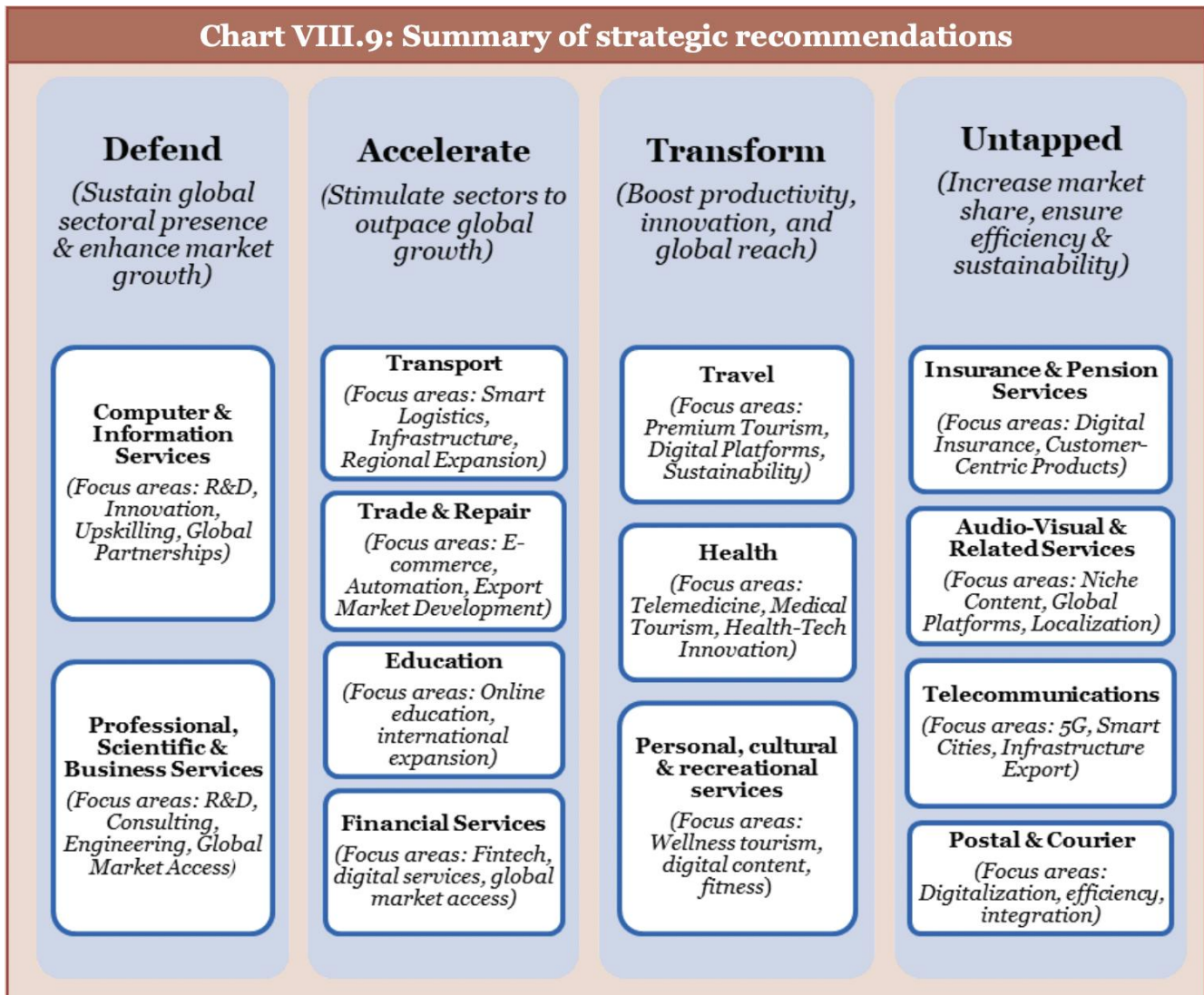
- Computer and business services make up about 70% of India's services exports. In FY25 (April-September), India was among the



top five countries for growth in services exports. India remained **amongst the top five** major countries in terms of growth in services exports in FY25.

- **Strategy for Services:** services are classified into four categories each with its own set of policy recommendations: defend, accelerate, transform, and untapped.

Chart VIII.9: Summary of strategic recommendations



Progress across various services

Railways

- Indian Railways, the **fourth largest network** globally, saw an 8% growth in passenger traffic and a 5.2% growth in freight revenue in FY24.
- To improve passenger experience, the government is upgrading amenities across 7,325 stations, including train indication boards, Wi-Fi, and digital clocks.
- **E-ticketing** has reached 86% in reserved tickets and 33% in unreserved tickets.
- To boost tourism, **Bharat Gaurav trains** showcasing India’s heritage have completed 325 trips, carrying over 1.9 lakh tourists.

Road transport

- It generates the **highest GVA** within transport services (78% of total)

- The government switched to electronic toll collection **via FASTag**, reducing average wait times at toll plazas from 734 to 47 seconds.
- The government has introduced a strategy to improve road safety on national highways, including a **cashless treatment** scheme for accident victims.
- It has set up driving training centers at regional, state, and district levels. Initiatives like the **Abhay project** focus on truck driver health, along with eye tests and regular health checks for drivers

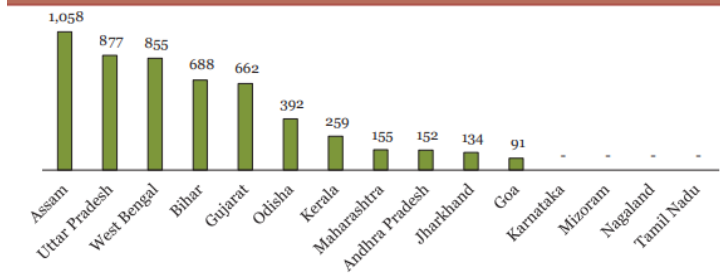
Aviation

- India is **the fastest-growing aviation** market, with airlines placing large aircraft orders to meet the rising air traffic demand.
- The government is boosting the **maintenance, repair, and overhaul (MRO)** industry by encouraging manufacturers to set up facilities in India and aligning the sector with global standards.
- New sectors like **drones, leasing, and MRO are also growing**. By October 2024, India had 140 drone training organizations, over 26,000 registered drones, and ₹60.6 crore disbursed under the PLI scheme.
- The **PM Gati Shakti initiative** integrates the aviation sector with other transportation modes, like railways, roads, and waterways, to improve connectivity.

Port, Waterways and Shipping: Sea of opportunities

- India’s major ports are expanding to meet rising trade demands.
- The government has launched **the Maritime India Vision 2030** and **Maritime Amritkaal Vision 2047** to make Indian shipbuilding and repair among the top five globally by 2047.
- **Inland water transport** has significant untapped potential, with 14,850 km of navigable waterways. By October 2024, India had 26 operational waterways spanning over 4,800 km.
- The government is promoting **river cruise tourism**, with passenger movement on national waterways reaching over 3.36 crore.

Chart VIII.15: Navigable length (in km) of operational waterways in different states



Source: Ministry of Ports, Waterways and Shipping

Tourism and hospitality

- The tourism sector's contribution to GDP returned to 5% in FY23, creating 7.6 crore jobs.
- **International tourist arrivals (ITAs)** in India reached pre-pandemic levels in 2023, with India capturing 1.45% of global ITAs.
- Foreign exchange earnings from tourism were 28 billion USD, ranking 14th globally in tourism receipts, accounting for **1.8% of the world’s total**.

Real Estate: Building the economy

- India's real estate market performed strongly in both office and residential sectors, driven by economic stability and positive sentiment.
- The country ranked 31st in the **2024 Global Real Estate Transparency Index**. Demand is growing in tier 1 and tier 2 cities due to improved **metro networks, roads, and connectivity**.
- The **Real Estate (Regulation and Development) Act** has improved sector transparency and project delivery. GST has simplified taxation, reducing tax evasion.
- **Real Estate Investment Trusts (REITs)** have boosted commercial real estate liquidity, attracting investors.
- **Digital platforms** for building plan approvals have reduced delays and increased transparency.

Information Technology (IT) Services

- India's IT/ITeS industry is globally dominant and crucial to export growth.
- The domestic market is expected to grow by 5.9%, reaching USD 54 billion. The sector added 60,000 jobs, bringing its workforce to 5.43 million.
- The removal of **angel tax**, along with reforms in safe harbour rules and transfer pricing, will boost **innovation** and **competitiveness**.
- Other reforms, including tax reliefs for **data center exports** and **e-commerce**, aim to support IT services and global business operations.

Global Capability Centers

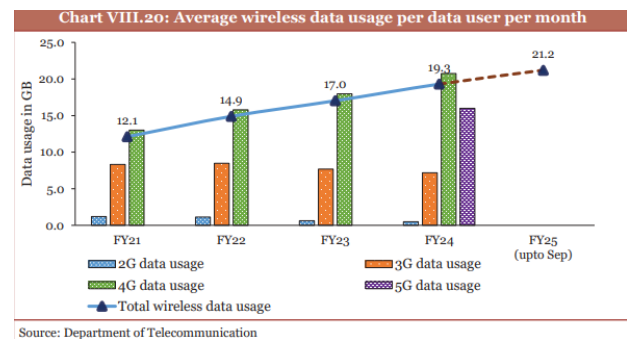
- GCCs are transforming the tech landscape by centralizing tech operations in India.
- This is especially noticeable in sectors like **aerospace, defense, and semiconductors**, where companies are focusing on developing next-generation platforms, products, and technologies.
- The adoption of AI and ML, along with the establishment of AI centers of excellence, is enhancing the GCC landscape by leveraging India's strong middle-management talent.

AI Adoption in Indian Services Sector

- **Finance:** Banks like SBI use AI for customer support (e.g., **SBI's chatbot**), fraud detection, and risk management.
- **Telecom:** AI optimizes customer support, network management, and maintenance. Telecom companies use AI-driven platforms to manage networks and detect issues proactively.
- **Retail & E-commerce:** AI enhances personalized marketing, inventory management, and customer experiences.
- **Transport & Logistics:** AI improves operations, route planning, and delivery accuracy, with AI-based systems in fulfilment centers streamlining processes and reducing costs.

Telecommunication

- India is the **second-largest telecom market**, with over 1.18 billion phone subscribers and 941 million broadband users.
- The country leads in mobile data consumption and offers the world's lowest data rates. India's rapid 5G rollout underscores its technological leadership in the sector.
- **C-DOT (Centre for Development of Telematics)** focuses on developing indigenous telecom solutions to reduce dependency on foreign technologies. **Key contributions:**
 - Developed **4G and 5G core networks** to reduce reliance on **global vendors** and telecom imports.
 - Created **quantum encryption systems** for secure government and strategic sector communication.
 - Developed **disaster management solutions with geo-targeted**, automated early warning systems.
 - Created **indigenous cybersecurity tools** to protect telecom infrastructure and mitigate risks.
 - Launched **SAMVAD app** for secure communication (text, image, audio, and video) in strategic sectors.
 - Through the C-DOT Collaborative Research Program (CCRP), it promotes telecom innovation and supports startups.
 - Government initiatives like **NIDHI** (National initiative for developing and harnessing innovations) and **Avishkar** nurture innovations into startups.



Open Network for Digital Commerce (ONDC):

- **Traditional e-commerce models** are dominated by a few large players, limiting flexibility for smaller sellers (e.g., MSMEs, local retailers, artisans).



- ONDC introduces a more **inclusive, interoperable digital commerce** ecosystem, promoting equity and reducing dependence on large platforms.
 - For ex-190+ network participants, including 7,000+ farmer producer organizations and 400+ self-help groups.

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.
- **Significance:**
 - Enhances supply chain resilience, scalability, and cost optimization.
 - Single-point integration streamlines operations.

State wise analysis of service sector performance

- **Service Sector Contribution:** In FY23, Karnataka and Maharashtra alone accounted for over 25% of the national service sector GVA, with Tamil Nadu, Uttar Pradesh, and Gujarat together making up over 50%.
 - 19 states collectively contribute **only 25%** to the service sector's GVA.
- **Regional Disparities:** Many **northeastern states** rely heavily on government resources due to natural disadvantages that hinder **large-scale industrialization** and commercial services.

State Categories Based on Service and Industrial Performance:

- **High Industrial GSVA:** States like Gujarat, Uttarakhand, and Himachal Pradesh excel in industry but have a **smaller service sector**.
 - They can grow further by boosting **industrialization**, which will help develop their service sectors.
- **Strong Service Sector:** States like Karnataka, Telangana, and Kerala excel in services but have average industrial performance.
 - These economies are largely **service-driven and urbanized**.
- **Dual Strength (Industry & Service):** **Maharashtra and Tamil Nadu** have both strong industrial and service sectors, with diversified economies integrating manufacturing, trade, and financial services.
- **Reform Potential:** States like **Arunachal Pradesh, Bihar, and Jharkhand** have significant potential for growth through business reforms.

Way forward and Outlook

- **Skilling the Workforce:** To capitalize on AI and digital transformation, it is crucial to focus on skilling the workforce across sectors.
- **Regulatory Reforms:** There is an urgent need to simplify complex procedures and regulations that hinder the growth of both manufacturing and services at the grassroots level.

What does the budget say?

- **Public Private Partnership in Infrastructure:** Each infrastructure-related ministry will come up with a 3-year pipeline of projects that can be implemented in PPP mode.
 - States will also be encouraged to do so and can seek support from the IIPDF (India Infrastructure Project Development Fund) scheme to prepare PPP proposals.
- **Support to States for Infrastructure:** An outlay of Rs1.5 lakh crore is proposed for the 50-year interest free loans to states for capital expenditure and incentives for reforms.

Glossary

Terms	Meaning
GVA (Gross Value Added)	It is the value that producers have added to the goods and services they have bought. When they sell their wares, producers' income should be more than their costs, and the difference between the two is the value they have added.
Services Sector	A broad sector of the economy that includes industries providing services such as trade, finance, tourism, transport, and communication.
Servicification of Manufacturing	The increasing use of services in manufacturing processes, from production to post-production, enhancing the value-added in the manufacturing sector.
Global Capability Centers (GCCs)	They are fully owned and integrated hubs typically established in talent-rich locations to build significant value and intellectual property (IP) using collaborative, distributed teams.
AI (Artificial Intelligence)	Technology that enables machines to simulate human intelligence, which will play a major role in the growth of skilled sectors like IT and business services.
Workforce Skilling:	The process of training and developing a workforce to meet the evolving demands of various sectors, particularly in the context of technological advancements like AI.

Test your learning

MCQs

1. Consider the following statements regarding India's share in global services exports:

- India has consistently maintained its position among the top five global services exporters over the past two decades.
- In 2023, India ranked seventh in global services exports with a 4.3% share.
- The United States had the highest share in global services exports in 2023, accounting for 13%.

How many of the above statements are correct?

- Only one
- Only two
- All three
- None of the above

2. Consider the following statements regarding India's services sector:

- The contribution of the services sector to India's Gross Value Added (GVA) has increased from 50.6% in FY14 to 55% in FY25.
- The services sector employs approximately 40% of the total workforce in India.
- The concept of servicification of manufacturing refers to the growing role of services in both production and post-production value addition.

How many of the above statements are correct?

- Only one
- Only two
- All three
- None

3. Consider the following statements regarding India's services exports:

- Computer services and business services account for approximately **50%** of India's total services exports.
- India was among the **top five countries globally** in terms of services export growth in FY25.
- The contribution of the tourism sector to GDP in FY23 was **6.5%**, surpassing pre-pandemic levels.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

4. Which of the following statements about India's transport sector is correct?

- (a) Road transport accounted for the lowest share in the total GVA of transport services.
- (b) India's aviation market is among the slowest-growing globally.
- (c) The inland water transport system in India has over 25,000 km of navigable waterways.
- (d) Maritime India Vision 2030 aims to position India among the top 5 shipbuilding and ship repair hubs by 2047.

5. Consider the following statements regarding India's real estate sector:

- 1. India ranked 31st out of 89 countries in the Global Real Estate Transparency Index 2024.
- 2. The enactment of the Real Estate Regulatory Authority (RERA) has significantly improved India's ranking in real estate transparency.

How many of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains

- 1. Examine the role of the service sector in India's economic growth, with a focus on its contribution to employment and Gross Value Added (GVA).
- 2. Discuss the significance of India's logistics and connectivity-based services in strengthening economic development and global trade.

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Chapter 9: Agriculture And Food Management: Sector of The Future

Introduction

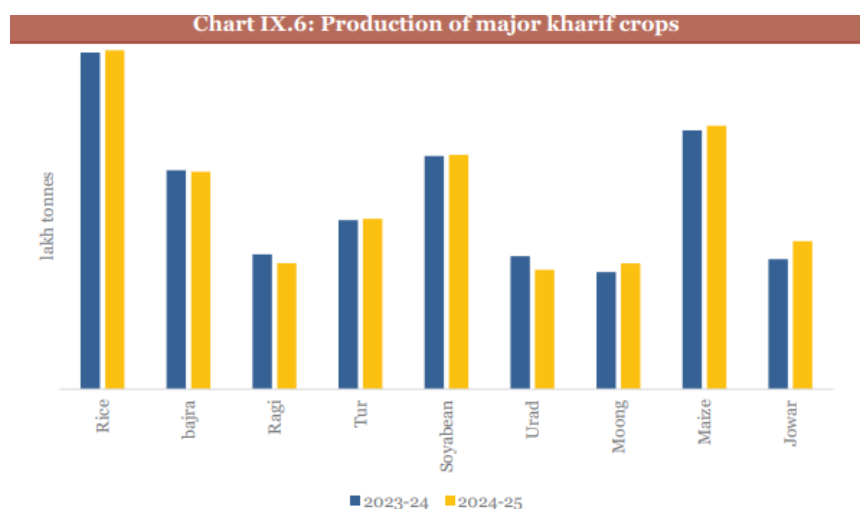
- India's agriculture sector has grown at an average rate of 5% annually from FY17 to FY23, showing resilience despite challenges.
- This improvement is likely due to **favorable weather, better agricultural practices**, and government support, including higher crop prices, easier access to credit, and a focus on **sustainability and productivity**.
- The **'Agriculture and Allied activities'** sector contributes approximately 16 per cent of the country's GDP for FY24 (PE) at current prices and supports about 46.1 per cent of the population
- The 1.9% growth in oilseeds is concerning, given India's reliance on imports for edible oil. However, high-value sectors like **horticulture, livestock, and fisheries** have become key drivers of overall agricultural growth.
- India produces **11.6% of the world's cereals**, but its crop yields are **much lower** than other top producers.

Chapter Precap

<p>Outcomes</p> <ul style="list-style-type: none"> • Agriculture and Allied Activities contribute around 16% of India's GDP in FY24. • High-value sectors like horticulture, livestock, and fisheries are driving agricultural growth. • India produces 11.6% of the world's cereals but has lower crop yields compared to other top producers. 	<p>Key Areas of Focus</p> <ul style="list-style-type: none"> • Crop Production, Rainfall and Irrigation Systems, Agriculture Mechanization, • Agriculture Marketing Infrastructure, Climate Action in Agriculture etc.
<p>Food Processing Industry A major employer in manufacturing, contributing 12.41% to total employment, with significant exports.</p>	

Crop Production: Incentivizing productivity increase, crop diversification and efficiency in the use of inputs

- Productivity depends on better access to quality seeds, irrigation, water management, soil health, post-harvest infrastructure, and markets.
- Agricultural price policies, like the **Minimum Support Price (MSP)**, also help farmers by providing stability and encouraging crop diversification and sustainable practices.
- The government has raised MSP for essential crops, with significant increases for **pulses, oilseeds, and nutri-cereals** in FY25, ensuring better returns for farmers.



Source: Ministry of Agriculture and Farmers' Welfare
Note: Production here is only for Kharif seasons for agriculture year 2023-24 and 2024-25

- For ex-The MSP for Masur has increased by 89%, and for rapeseed, it has risen by 98%.

Seeds-quality and use of fertilizers: the critical differentiator

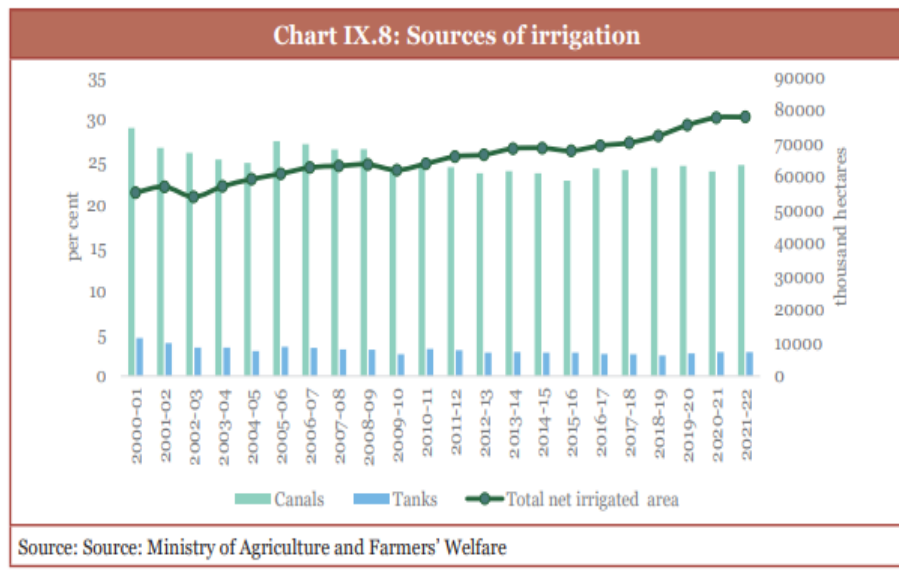
- Soil degradation, especially the loss of organic carbon, is a major challenge for Indian agriculture.
- Many soils lack key nutrients like carbon, boron, iron, and sulphur, reducing fertility, productivity, and sustainability.
- **Key Interventions:**
 - Development and release of **climate-resistant seed varieties**, with 2,177 out of 2,593 new varieties addressing climate challenges.
 - **Seed banks** have been established, and heat-tolerant wheat varieties have been adopted in heat-stressed regions.
 - The recently introduced '**Urea Gold**' combines urea with sulphur to reduce wastage and improve nutrient uptake.
 - **Drones and fertigation** techniques are also being used to optimize fertilizer use.
 - > Fertigation is a method of fertiliser application in which fertiliser is incorporated **within the irrigation water** by the drip system
 - **PMPANAM (Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother Earth)** initiative encourages states to adopt alternative fertilizers like **Nano Urea, Nano DAP, and organic options**.

Rainfall And Irrigation System: Building Efficiency and Extending Coverage

- **Impact of Climate Change:** Climate change disrupts rainfall patterns, affecting agricultural practices that rely on consistent weather.
 - **For ex-85% of India's farmers** are small-scale, with plots under 2 hectares, making them highly vulnerable to climate variability.

Coverage:

- Irrigation coverage increased from **49.3% to 55%** of the gross cropped area between FY16 and FY21.
- States like Punjab, Haryana, Uttar Pradesh, and Telangana have high irrigation coverage (up to 98%), while Jharkhand and Assam lag behind with less than 20%.
- **Micro-irrigation**, vital for reducing water usage in agriculture, is expanding but still lags behind countries like the **USA (68.6%) and China (13.7%)**, with India covering 8% of its irrigated area



- **Effect on Crop Yields:** Studies show significant crop yield losses due to rainfall deficiencies and temperature rises, with an **8-12% decline** in productivity expected by 2099.
- **Key Interventions:**
 - The government promotes water efficiency through the **Per Drop More Crop initiative** under the Pradhan Mantri Krishi Sinchayee Yojana.
 - The **Micro Irrigation Fund** provides a 2% interest subsidy.
 - The **Rain-fed Area Development program**, integrated into the Rashtriya Krishi Vikas Yojana, focuses on developing natural resources with farming.

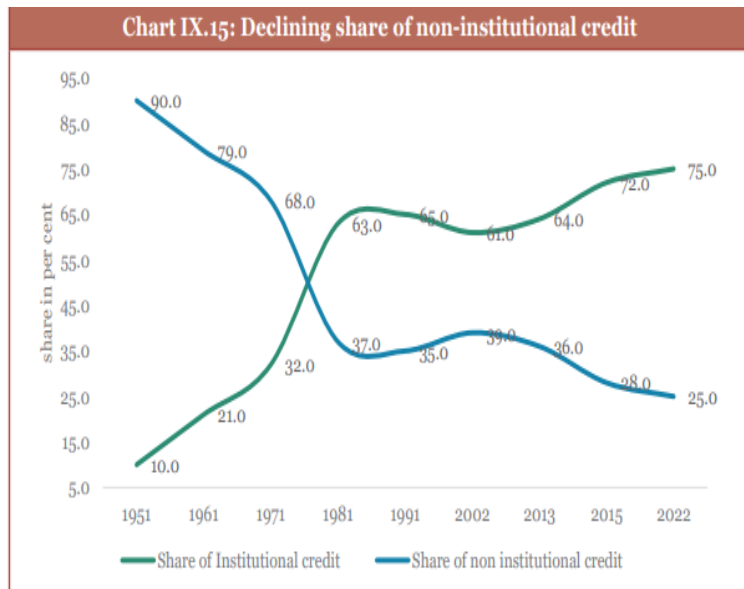
- A **community-driven, tech-enabled model** for rejuvenating water bodies can enhance rural water security, aid groundwater recharge, and restore water bodies using tools like **CLART GIS and AVNI Gramin**.

Agriculture credit: a critical input

- Providing adequate **credit support**, especially to **small and marginal farmers**, is key to improving agricultural productivity and income.
- **Ground-level credit** to agriculture has grown at 12.98% annually, with a significant rise in loans to small and marginal farmers, from ₹3.46 lakh crore (41%) in FY15 to ₹14.39 lakh crore (57%) in FY24.

Key Interventions:

- The **Kisan Credit Card scheme** has helped farmers meet short-term capital needs, with 7.75 crore operational accounts and ₹9.81 lakh crore in loans.
- The **Modified Interest Subvention Scheme** offers concessional loans at 7%, with an additional 3% incentive for on-time repayments.
- Claims are processed faster through the **Kisan Rin Portal**, enabling quicker transactions and better access to agricultural credit.
- **Banks** are required to allocate 40% of their credit to priority sectors, including agriculture.
- All the above measures have significantly reduced the reliance on **non-institutional credit sources from 90 per cent in 1950 to around 25.0 per cent in FY22**.
- The **Pradhan Mantri Fasal Bima Yojana** provides crop insurance to safeguard against natural disasters, pests, and diseases.



Source: Ministry of Agriculture

Innovative Ways of Land Leasing – Case of Kerala

- The **Model Agricultural Land Leasing Act, 2016**, aims to legalize and facilitate land leasing to improve access for landless and marginal farmers, while protecting landowners' rights.
- Kerala has introduced an innovative land leasing model, where **SHGs lease land for horticulture cultivation**. Under this arrangement, the lessee shares profits or pays fixed compensation.
- The **Gram Panchayat** notarizes the agreement, enabling SHGs to access benefits like credit and insurance.
- This 3 to 5-year model improves land care, **farm efficiency**, and access to land for low-income farmers, with over 85% of members from poor backgrounds.

Agriculture mechanisation: facilitating access

High machinery costs limit farm mechanisation for small farmers. Custom hiring and farm machinery banks provide affordable access to equipment.

Key Interventions:

- The **Sub-Mission on Agricultural Mechanisation** supports state governments in setting up Custom Hiring Centres and offering training.
- A new scheme provides **drones** to **Women Self-Help Groups (SHGs)** for rent to farmers. SHGs receive 80% financial support.

Agriculture extension: the enabler

Agricultural extension is vital in **disseminating knowledge, enhancing productivity**, and promoting sustainable agricultural practices.

Key Interventions:

- The government is enhancing agricultural extension services through the **Sub-Mission on Agricultural Extension (SMAE)** to improve productivity and sustainability.
- The **Agricultural Technology Management Agency (ATMA)** shares modern farming technologies through training, demonstrations, farmer events, and farm schools.
- The **Kisan Call Centre** supports farmers by answering their queries in 22 languages.

Improvement in agriculture marketing infrastructure

Key Interventions:

- The **Agriculture Marketing Infrastructure (AMI) sub-scheme**, provides capital subsidies for storage facilities, market infrastructure, and mobile post-harvest systems.
- The **Agriculture Infrastructure Fund (AIF)**, further supports post-harvest management with medium-term financing for projects like processing units and cold storage.
- The e-NAM Scheme, launched to improve agricultural marketing, **offers free software, hardware funding, and infrastructure for grading, sorting, and packaging.**

Climate action in agriculture

- The **Composite Index of Agricultural Sustainability**, calculated by ICAR (**Indian Council of Agricultural Research**) using 51 indicators, shows that Indian agriculture is **moderately sustainable** with an average value of 0.49.
- States like **Mizoram, Kerala, Madhya Pradesh, Andhra Pradesh, Manipur, West Bengal, and Uttarakhand** perform above the **national average**.
- In contrast, **Rajasthan** has the least sustainable agricultural practices.
- States with higher sustainability scores have seen better **crop diversification, improved infrastructure, farm credit, and sustainable inputs.**
- The **Indo-Gangetic Plains** (Uttar Pradesh, Punjab, Bihar, Haryana) and rice-growing states like Jharkhand and Assam are more **vulnerable to climate change.**

Allied Sectors: Potential To Build Resilience

- The livestock sector has become a **key driver of agricultural growth**, increasing its contribution to the Gross Value Added (GVA) of agriculture from 24.38% in FY15 to 30.23% in FY23.
- Its output reached ₹17.25 lakh crore (US\$205.81 billion), with the milk industry alone generating ₹11.16 lakh crore (US\$133.16 billion), surpassing **staple crops like paddy and wheat.**
- **Key Interventions:**
 - initiatives like the **Rashtriya Gokul Mission** for indigenous bovine breeds, the Livestock Health and Disease Control Program, IVF technology promotion, and the establishment of Multipurpose AI Technicians in Rural India (MAITRIs).





- **Fisheries:**
 - **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** aims to boost productivity.
 - **Fisheries and Aquaculture Infrastructure Development Fund (FIDF)** supports infrastructure development.
 - The sector has embraced modern **technologies like cages, Recirculating Aquaculture Systems (RAS), and bio flocs**, alongside improved cold storage and marketing infrastructure.
 - > This has led to a rise in fish production from 95.79 lakh tonnes in FY14 to 184.02 lakh tonnes in FY23.
 - The **Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana** launched the National Fisheries Digital Platform, mobilizing over 16.35 lakh stakeholders in just 4 months.

Cooperative Societies: Strengthening The Institution to Serve Better

They play a key role in sectors like agriculture, credit, housing, and women's welfare, promoting **financial inclusion** by providing credit to farmers and small entrepreneurs

Key Interventions

- The government has **introduced Model Bye-Laws** for Primary Agricultural Credit Societies (PACS), computerized PACS for efficiency, and is establishing multipurpose **PACS, dairy, and fishery cooperatives**.
- Initiatives also include **turning PACS into Common Service Centres**, offering services beyond finance, setting up **petrol outlets**, and **creating micro-ATMs** for easier banking access.
- PACS now function as **Pradhan Mantri Kisan Samridhi Kendras**, offering vital **agricultural services**, while 1,723 micro-ATMs have been set up for doorstep financial services.

Food Processing Industries: Critical for the Economy

- It is one of the **largest employers** in organized manufacturing, making up 12.41% of total employment in the sector.
- In FY24, agri-food exports, including processed food, totaled USD 46.44 billion, making up 11.7% of India's total exports.
- **Key Interventions:**
 - **Pradhan Mantri Kisan Sampada Yojana (PMKSY)** focuses on modernizing infrastructure, improving supply chains, reducing post-harvest losses, boosting processing capacity, and increasing exports to advance the food processing industry.
 - The **Production Linked Incentive Scheme for Food Processing** aims to develop globally competitive food processing leaders by supporting branding and marketing in international markets.
 - **Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME)** scheme offers technical, financial, and business support to establish or upgrade micro food processing businesses.

Food Management: Enabling Food Security

It aims to guarantee access to adequate, nutritious food for a healthy life, focusing on the key aspects of food availability, accessibility, proper utilization, and stability over time.

Key Interventions:

- The government has moved from a **welfare-based to a rights-based approach** with the **National Food Security Act (NFSA) 2013** and **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**.
- The government aims for 100% **e-KYC compliance to improve the Public Distribution System, supporting the One Nation, One Ration Card scheme**.
- The **Credit Guarantee Scheme** for electronic-negotiable warehouse receipt-based pledge financing helps small farmers get loans for stored produce, **boosting post-harvest lending and improving incomes**.
- **Measures for enhancing foodgrain storage in India**
 - Building steel silos through **public-private partnerships** to increase storage capacity.
 - Developing a **Hub and Spoke Model** for silos, with transportation from spoke to hub by road and hub to hub by rail.



- Exploring **mobile storage units, Flospan**, in collaboration with the World Food Programme, to improve storage in remote areas.
- Modernizing grain warehouses with '**Smart Warehouses**' that use sensors to monitor and improve storage conditions, reducing losses.

Way forward and Outlook

- India's agricultural sector is crucial for economic growth and food security, despite challenges like climate change and water scarcity. It has **remained resilient**, driven by government initiatives that boost productivity and support farmers' welfare.
- To unlock **agriculture's full potential**, India must address issues like **overproduction of cereals, underproduction of pulses and edible oil**, and improve policies on soil health, price risk, and water use. This will boost productivity and enhance food security both domestically and globally.

What does the budget say?

- **Prime Minister Dhan-Dhaanya Krishi Yojana - Developing Agri Districts Programme:** Through the convergence of existing schemes and specialized measures, the programme will cover 100 districts with low productivity, moderate crop intensity and below-average credit parameters.
- **Mission for Aatmanirbharta in Pulses:** Unlimited procurement of these 3 pulses by central agencies (NAFED and NCCF) during the next 4 years from farmers who register with these agencies and enter into agreements.
- **Makhana Board in Bihar**
- Enhanced Credit through Kisan Credit Cards (KCC)

Glossary

Terms	Meaning
Crop Diversification	The practice of growing a variety of crops to increase resilience and reduce dependency on a single crop.
Seed Banks	Facilities that store seeds to preserve plant genetic diversity and provide high-quality seeds for future planting.
Micro Irrigation Fund (MIF)	A fund established to promote micro-irrigation systems like drip and sprinkler systems in agriculture.
Primary Agricultural Credit Societies (PACS)	Cooperative societies that provide credit facilities to farmers for agricultural activities.
Common Service Centres (CSCs)	Centres that offer digital and other essential services in rural areas, including banking and e-governance.

Test your learning

MCQs

- Which of the following factors play a crucial role in increasing agricultural productivity in India?**
 - Quality seeds and irrigation
 - Improved post-harvest infrastructure
 - Efficient water management
 - All of the above
- What is the key objective of the interventions like Per Drop More Crop and Micro Irrigation Fund?**
 - Increasing crop diversification
 - Improving irrigation efficiency
 - Expanding seed production
 - Providing credit to farmers

3. Which statement best describes the relationship between climate change and agriculture in India?
- Climate change has no impact on Indian agriculture.
 - A rise in temperature and increased rainfall will likely reduce agricultural productivity.
 - Climate change will only affect crop yields but not livestock.
 - India's agricultural productivity is expected to improve due to climate change.
4. What role do cooperative societies play in agriculture?
- They directly handle agricultural production.
 - They provide financial support and resources to farmers through credit and welfare schemes.
 - They focus only on food processing and marketing.
 - They replace government agricultural schemes.
5. How many of the following statements are correct regarding major measures for promoting sustainable farming?
- Paramparagat Krishi Vikas Yojana.
 - Mission Organic Value Chain Development focuses on organic farming in the North Eastern Region.
 - Soil Health Card.
 - The National Bamboo Mission
- Only 1
 - Only 2
 - Only 3
 - All of the above.

Mains questions

- Discuss the challenges and government interventions in improving crop productivity and food security in India's agricultural sector.
- Analyze the role of allied sectors, such as fisheries, livestock, and food processing, in supporting India's agricultural growth. What are the key interventions for these sectors?

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Chapter 10: Climate And Environment: Adaptation Matters

Introduction

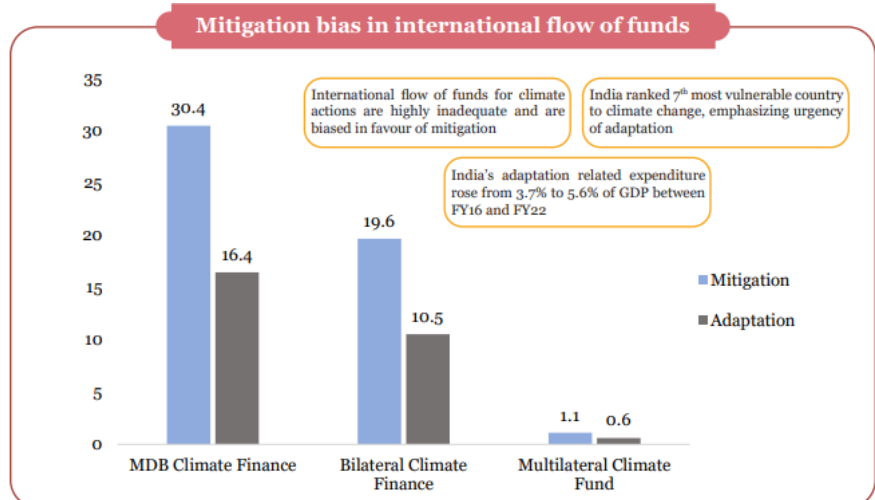
- India’s goal of becoming a developed nation by 2047 focuses on inclusive, sustainable development. Despite being among the fastest-growing economies, India’s per capita carbon emissions **are one-third of the global average**.
- The country aims for low-carbon development, ensuring energy security, job creation, economic growth, and **environmental sustainability**.
 - However, challenges remain, especially in scaling renewable energy due to **storage limitations** and **access to minerals**.
- India’s climate action has largely been financed domestically, but **international funds** remain insufficient and mitigation-focused.
 - For ex- At COP29, the proposed climate finance goal of USD 300 billion annually by 2035 is much lower than the estimated USD 5.1-6.8 trillion needed by 2030.

Chapter Precap

Bringing Adaptation to the Forefront <ul style="list-style-type: none"> Climate Adaptation Strategy: Focus on vulnerable sectors due to diverse geography and climate. Adaptation Spending: Increased from 3.7% of GDP in FY16 to 5.6% in FY22. 	Key Adaptation Initiatives <ul style="list-style-type: none"> Agriculture: Research on climate-resilient seeds, groundwater preservation, and soil health. Urban Areas: Adapting to urban flooding, heat stress, and groundwater depletion through NMSH, AMRUT, and Smart City Missions. Coastal Regions: Mitigating extreme events via MISHTI, Coastal Regulation Zones, and mangrove conservation. Water Management: Jal Shakti Abhiyan, National Aquifer Mapping, and the FloodWatch India app.
Energy Transition <ul style="list-style-type: none"> India’s Energy Challenges: Reliance on coal, contrasting with developed countries’ shift to gas. Progress on Energy Transition: 46.8% of electricity generation capacity from non-fossil fuels. 	Optimizing Lifestyles for Sustainable Development <ul style="list-style-type: none"> Lifestyle for Environment (LiFE) Mission: Promoting eco-friendly lifestyles for global consumers. Circular Economy Potential: Resource circularity could save 11% of GDP by 2030 and 30% by 2050.

Bringing adaptation to the forefront

- India is the **seventh most vulnerable country** to climate change, facing extreme weather, rising sea levels, biodiversity loss, and water insecurity, which impact lives, livelihoods, and the economy.
- The Ministry of Environment, Forest and Climate Change (MoEFCC) is developing a





National Adaptation Plan (NAP) to align adaptation strategies with sustainable development goals.

- India's adaptation strategy focuses on **policy changes, sector strategies**, resilient infrastructure, research, and funding, tailored to regional needs.
- Adaptation spending increased **from 3.7% of GDP in FY16 to 5.6% in FY22**, mainly funded by domestic resources with the public sector leading.
 - However, **international climate funding** remains insufficient and focused more on mitigation than adaptation.

Adaptation across various sector

- **Agriculture:** focus on research and development of climate-resilient seeds, measures to preserve and enhance groundwater resources, improve soil health, and modify cropping practices.
- **Building resilience in urban areas:** With increasing urbanization and climate impacts, India is focusing on adapting to heat stress, urban flooding, and groundwater depletion.
- **Key Interventions:**
 - The **National Mission on Sustainable Habitat (NMSH)** promotes low-carbon urban development through waste, water, energy, mobility, and urban planning.
 - The **Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** enhances water supply, revitalizes water bodies, boosts groundwater recharge, and promotes green spaces and mobility.
 - > **AMRUT 2.0** also emphasizes water reuse and greywater management.
 - The **Smart City Mission** focuses on livability, economic growth, and sustainability, while the **Urban River Management Plan (URMP)** and **River Cities Alliance** work to sustainably restore rivers in over 145 cities.
 - **Vertical gardens** address urban challenges like heat islands and air pollution, enhancing thermal performance, sequestering carbon, and improving biodiversity.
 - > **For ex-**The Income Tax Department's project in 17 states uses waste plastic bottles for these gardens.
 - India's Energy Conservation and Sustainable Building Code (ECSBC) 2024 promotes energy-efficient buildings, with potential to integrate vertical gardens, aligning with **global practices in Singapore, Japan, and the EU.**

Adaptation in coastal regions: Coastal regions in India face extreme climate events and slow onset issues like sea-level rise, increasing the risk of flooding.

- **Key Interventions:**
 - The **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)**, aims to restore mangrove forests along India's coasts by 2028, boosting coastal livelihoods, carbon sequestration (4.5 million tons), and nature tourism.
 - India protects and enhances mangrove forests through schemes like the **Conservation and Management of Mangroves and Coral Reefs** and regulatory measures such as **the Coastal Regulation Zone (CRZ) Notification (2019)** and laws like the Wild Life (Protection) Act, 1972 and the Indian Forest Act, 1927.
 - The **"Enhancing Climate Resilience of India's Coastal Communities"** project improves resilience in vulnerable coastal populations, particularly women, through community-based and ecosystem approaches.

Adaptation action for water management

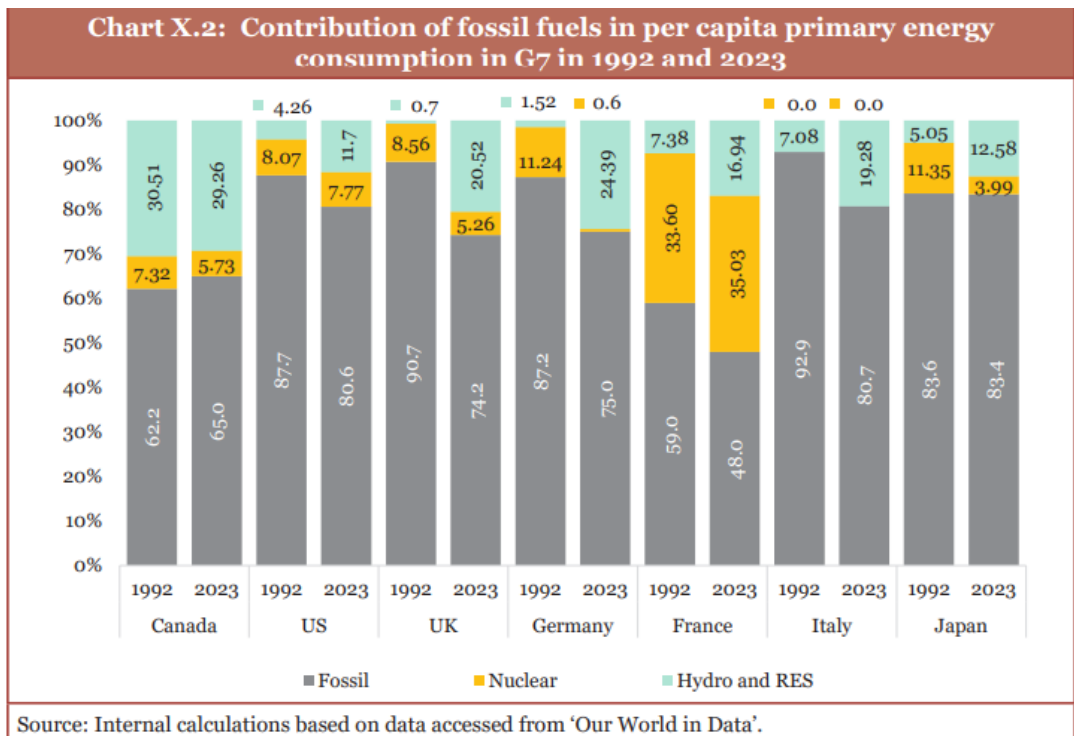
- **Jal Shakti Abhiyan (2019):** Tackled water stress with rainwater harvesting, water body mapping, afforestation, and awareness.
 - The Catch the Rain – 2024 campaign emphasized women's role in water conservation with the theme **"Nari Shakti se Jal Shakti."**
- **National Aquifer Mapping Project (NAQUIM):** Covered 25 lakh square kilometers, providing water conservation plans and recharge structures for state-level implementation.

- **Bhu-Neer Portal:** A platform by the Central Ground Water Authority for efficient groundwater management, ensuring transparency and sustainability.
- **FloodWatch India App (Version 2.0):** Offers real-time flood forecasts, monitoring data from 592 stations, and reservoir storage details for effective flood management.
- **State-Specific Measures:**
 - **Jal Sanchay Jan Bhagidari:** Builds rainwater harvesting structures to promote water sustainability.
 - **Smart Laboratory on Clean Rivers (SLCR):** Launched in Varanasi under India-Denmark collaboration, it focuses on rejuvenating the Varuna River.
 - **Mawrah Multipurpose Reservoir Project (Meghalaya):** Aims to conserve rainwater, recharge groundwater, restore springs, and rehabilitate degraded areas.

Energy transition - learning from the experience of developed countries and weighing the options

Energy transitions have primarily been driven by **commercial interests, not emissions reduction**. Today, energy security and commercial factors continue to dominate. **For ex-**the EU’s REPowerEU plan aims to reduce dependence on Russian gas.

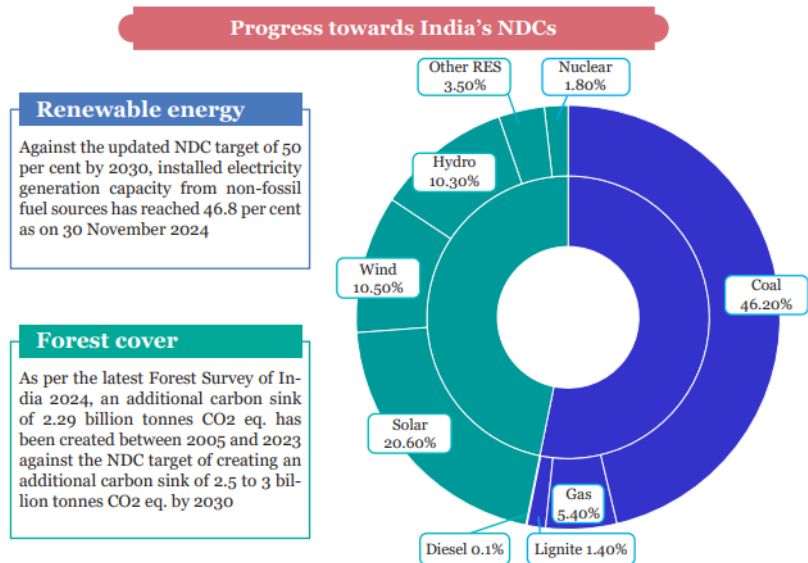
- The G7 still heavily relies on fossil fuels, particularly gas, with little change in energy consumption from 1992 to 2023.
- India faces a **gap in meeting development goals** due to rising energy demand. While renewable energy is promoted, technology challenges like **grid**



- **integration and intermittency persist.**
- Coal remains vital to India’s energy mix due to abundant reserves and limited alternatives. India **holds 10% of global coal reserves** but only 0.7% of natural gas reserves.
 - To improve efficiency, it has adopted advanced technologies like **super-critical, ultra-super-critical, and advanced ultra-super-critical coal plants**.
- Nuclear energy offers a **cleaner alternative**, but **safety concerns** and supply chain issues remain.
 - Additionally, renewable technologies, like solar panels, present disposal challenges.
- Growing electricity demand **from AI and data centers** could increase fossil fuel use, particularly natural gas, as emissions offset through **renewable energy certificates** may not be effective.
- The shift to sustainable energy faces challenges, with tensions between **security, economic growth, and environmental goals** in both **developed and emerging economies**.

Progress made on India's energy transition

- India has made significant strides in energy mitigation, with 46.8% of its total electricity generation capacity (213,701 MW) coming from non-fossil fuel. The target is to reach 50% by 2030.
- New initiatives and updates on existing policies/schemes to boost energy transition:**
 - New Solar Power Scheme:** Electrifies 100,000 households in tribal areas, providing off-grid solar systems for 63,000 villages, 1,500 multi-purpose centers, and 2,000 public institutions under the **Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan**.
 - PM-Surya Ghar Yojana:** Aims for **rooftop solar installations** in 10 million households, targeting 40-45 GW capacity by 2027.
 - Offshore Wind Energy:** Launches Viability Gap Funding scheme with ₹7,453 crore budget for offshore wind projects in Gujarat and Tamil Nadu.
 - Green Energy Corridor:** Strengthens **renewable energy transmission** with ongoing projects across multiple states (GEC-I and GEC-II).
 - National Bioenergy Programme:** Supports **waste-to-energy**, biomass, and biogas initiatives, contributing significantly to installed capacity.
 - Solar Parks & Ultra-mega Solar Projects:** Develops 40,000 MW capacity through 55 parks, with 39.9 GW capacity already sanctioned.
 - PM-KUSUM Scheme:** aims to add 34.8 GW solar capacity through solar-powered **agricultural pumps** and grid-connected plants.
 - Production Linked Incentive Scheme:** To achieve a gigawatt-scale manufacturing capacity of high-efficiency **solar photo-voltaic modules**.
 - National Green Hydrogen Mission:** Aims for 5 million metric tonnes of green hydrogen production annually by 2030, with corresponding renewable energy capacity.
- Lessons Learnt:**
 - Developed economies show the **risks of closing thermal energy without reliable alternatives**.
 - India must use its resources, technologies, and expertise to meet growing energy needs while pursuing a **low-carbon path** to becoming a developed nation by 2047.
 - In the **short to medium term**, India must address challenges in renewable energy, including **battery storage**, grid infrastructure, and **critical minerals**.



Growing Carbon sink of forests in India

- India's NDC targets increasing carbon sinks by 2.5 to 3 billion tonnes of CO₂ by 2030 through expanded tree cover.
- According to the **2024 Forest Survey**, India's carbon sink reached 30.43 billion tonnes in 2023, up from 28.14 billion tonnes in 2005, adding 2.29 billion tonnes.
- The FSI projects a carbon sink of 31.71 billion tonnes by 2030, **exceeding** the NDC target.

Developments in financial regulation on green investments

- Business Responsibility and Sustainability Report (BRSR):** SEBI requires the **top 1000 listed companies** to report ESG metrics under BRSR from FY23, including GHG emissions, water and energy use, gender diversity, and inclusivity.
- Green Debt Securities Framework:** SEBI introduced new categories like **transition, blue, yellow, and circular economy** bonds in 2023 to fund sustainable projects.

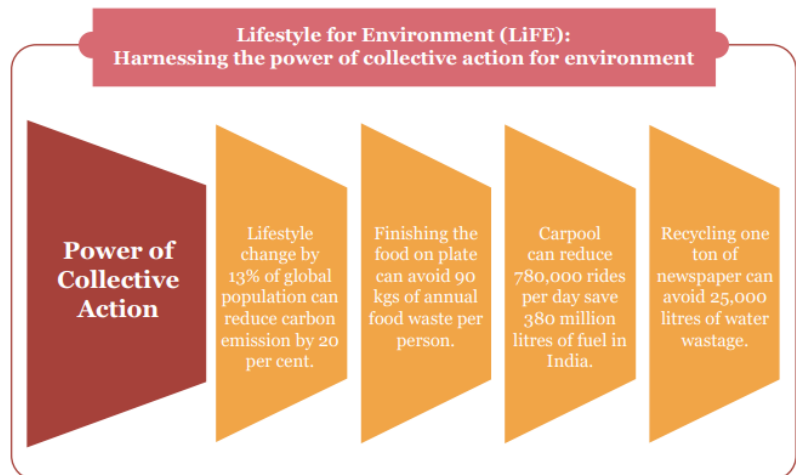
- Issuers must disclose environmental and social risks and mitigation plans.
- **Sovereign Green Bonds (SGrBs):** The Government issued ₹16,000 crore in FY23 and ₹20,000 crore in FY24 to finance green infrastructure.
- **Green Deposits by RBI:** To encourage entities to **accept deposits** for green projects. Loans for renewable energy projects like solar, wind, and biomass are classified under **priority sector lending**.

Optimizing lifestyles for sustainable development

- **Food Waste and Emissions:** Around **17% of global food** is wasted annually, contributing over 8% of global greenhouse gas emissions.
- **Impact of Dietary Preferences:** Reducing dairy and meat consumption can cut emissions by 66%. A **plant-based diet** can reduce an individual's carbon footprint by up to 2.1 tons annually, with **vegan diets** having the biggest impact.
- **Mission LiFE:** Launched by India at COP26 in 2021, the Lifestyle for Environment (LiFE) Mission **encourages eco-friendly lifestyles**.
 - **Objective:** The goal is to mobilize 1 billion people globally for environmental action from 2022 to 2028, with 80% of India's villages and urban areas becoming environmentally friendly by 2028.
 - **Co-Benefits of LiFE Measures:** Sustainable practices can reduce energy inequalities, lower air pollution, cut costs, and improve health and well-being.
 - **Potential Savings:** By 2030, LiFE measures could save consumers USD 440 billion globally through reduced consumption and lower prices.

Government initiatives

- **Excise Duties and EV Incentives:** High excise duties on fossil fuels and incentives for electric vehicles encourage greener alternatives.
- **Ecomark and Star-labelling:** These initiatives certify eco-friendly products and promote energy efficiency and electromobility awareness.
- **PAT Scheme:** The Perform Achieve and Trade scheme boosts energy efficiency.
- **Waste Management Regulations:** These minimize environmental impact by enforcing sustainable waste practices.
- **Green Credit Programme:** incentivize voluntary conservation efforts like tree plantation, with public participation through the GCP Portal.
- **Ek Ped Maa Ke Naam:** A tree plantation campaign that encourages people to honor nature, drawing on the **deep respect** for mothers.
- **Swachh Bharat Mission 2.0:** Focuses on waste management and sanitation aligned with sustainability and circular economy principles, transforming sanitation access in India.



Circular Economy and Resource Efficiency

- The main goal of a circular economy is **to minimize waste, recover valuable materials, and reduce dependence on raw resources**.
 - For ex-By 2030, circularity could **save 11% of GDP, and 30% by 2050**.
- India is adopting a multi-faceted approach with regulations, financial incentives, and awareness campaigns to support this.



- **Recycling e-waste** plays a vital role in India's renewable energy efforts, especially by extracting resources from solar and wind equipment waste.
- The government offers incentives like **tax breaks, subsidies, and low-interest loans** for recycling.
- **India's Extended Producer Responsibility (EPR)** holds manufacturers accountable for post-consumption waste, promoting sustainable design, recycling, and better waste management.

Plastic pollution

- It is a major contributor to climate change and biodiversity loss. By 2050, plastic will account for **15%** of global greenhouse gas emissions.
- India has one of the **lowest per capita plastic consumption** rates.
- **Plastic Waste Management Rules, 2016**, aim to manage plastic waste sustainably. The rules require local bodies to manage **plastic waste, ban open incineration, and restrict single-use** plastics from July 2022 to reduce pollution.

Air pollution

- According to the WHO, **99% of the global population** breathes air with pollutants exceeding recommended limits, especially in low- and middle-income countries.
- In northern India, particularly Delhi and NCR, air quality worsens during the transition from autumn to winter, with particulate matter levels frequently exceeding WHO guidelines.
- Factors such as **vehicular traffic, agricultural practices**, and the use of coal and wood for cooking contribute to this pollution, along with geography and wind direction.
- **Key Interventions**
 - **National Clean Air Programme (NCAP)**: It targets 130 cities to reduce air pollution through action plans at the national, state, and city levels by using resources from central schemes like **Swachh Bharat Mission, Smart City Mission, AMRUT, SATAT, and Nagar Van Yojana**
 - **Graded Response Action Plan (GRAP)**: This plan enforces preventive actions based on air quality levels to combat poor air quality.
 - **Agricultural Mechanization**: The "**Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue**" scheme offers financial assistance for machinery and custom hiring centers to reduce stubble burning in Punjab, Haryana, Uttar Pradesh, and Delhi.

Way forward and Outlook

India is adopting a holistic approach, focusing on both **mitigation (reducing emissions) and adaptation (building resilience to climate impacts)**.

Some Suggestions:

- **Policy Integration**: Targeted policies, sufficient financing, and integrating adaptation strategies into development programs are important. Solutions should be region-specific, tailored to India's diverse geography.
- **Efficiency and Low-emission Technologies**: Maximizing the efficiency of existing fossil fuel resources and advancing low-emission thermal power technologies, like Advanced Ultra Super Critical (AUSC) power plants, is essential in the medium term.
- **Agriculture and Climate Resilience**: Developing climate-resilient seeds and improving agricultural practices are critical to reducing climate impacts in rural areas
- **Public Awareness**: Promoting lifestyle changes for climate mitigation through the LiFE mission can drive low-carbon behaviors.
 - Integrating environmental education into curricula will help foster an environmentally conscious future generation.
- **Research & Development**: Investing in research for battery storage technologies and the recycling of renewable energy waste is crucial for ensuring reliable and sustainable energy.



What does the budget say?

- Nuclear Energy Mission for Viksit Bharat:** Development of at least 100 GW of nuclear energy by 2047 is essential for our energy transition efforts. For an active partnership with the private sector towards this goal, amendments to the Atomic Energy Act and the Civil Liability for Nuclear Damage Act will be taken up.

Glossary

Terms	Meaning
Climate Adaptation	Adjustments or strategies implemented to deal with climate change and its impacts, such as changes in agriculture or infrastructure.
Energy Transition	The global shift from fossil fuels to renewable energy sources to combat climate change.
Lifestyle for Environment (LiFE) Mission	An initiative to encourage eco-friendly, sustainable lifestyles to reduce carbon footprints.
Circular Economy	An economic system aimed at minimizing waste and making the most of resources by reusing, recycling, and reducing consumption.
Extended Producer Responsibility (EPR)	A policy that holds manufacturers accountable for the entire lifecycle of their products, including post-consumer disposal.

Test your learning

MCQs

- How many of the above statements are correct regarding India’s climate adaptation strategy?**
 - India’s adaptation spending rose from 3.7% of GDP in FY16 to 5.6% in FY22.
 - International climate funding is mostly directed towards adaptation rather than mitigation.
 - The Ministry of Environment, Forest and Climate Change (MoEFCC) is developing the National Adaptation Plan (NAP).

(a) Only 1
(b) Only 2
(c) Only 3
(d) None of the above
- How many of the above statements are correct regarding India’s energy transition?**
 - India has installed 46.8% of its electricity generation capacity from non-fossil fuel sources.
 - India relies on coal and has only 0.7% of global reserves of natural gas.
 - India’s energy transition plans include the Viability Gap Funding (VGF) scheme for offshore wind energy projects.

(a) Only 1
(b) Only 2
(c) only 3
(d) None of the above
- How many of the above statements are correct about India’s Lifestyle for Environment (LiFE) Mission?**
 - The mission promotes eco-friendly, nature-aligned lifestyles.
 - It aims to reduce food waste by 17% by 2030.
 - It could save global consumers USD 440 billion by 2030 through reduced consumption.

(a) Only 1
(b) Only 2
(c) Only 3
(d) None of the above

4. Which of the following statements about plastic pollution is correct?

- 1. By 2050, plastic will account for 15% of global greenhouse gas emissions.
 - 2. India has one of the highest per capita plastic consumption rates at 35 kg.
- (a) 1
(b) 2
(c) Both Statements 1 and 2 are correct
(d) Neither Statement 1 nor Statement 2 is correct

5. Which of the following are key interventions for improving air quality in India?

- 1. National Clean Air Programme (NCAP)
 - 2. Graded Response Action Plan
 - 3. Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue
- (a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3
(d) All the above

Mains questions

- 1. Discuss India’s climate adaptation strategy and the challenges it faces in addressing climate vulnerabilities. What are the key government interventions aimed at overcoming these challenges?
- 2. How do the key interventions under the Lifestyle for Environment (LiFE) Mission contribute to mitigating climate change and promoting sustainable practices?

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Chapter 11: Social Sector: Extending Reach and Driving Empowerment

Introduction

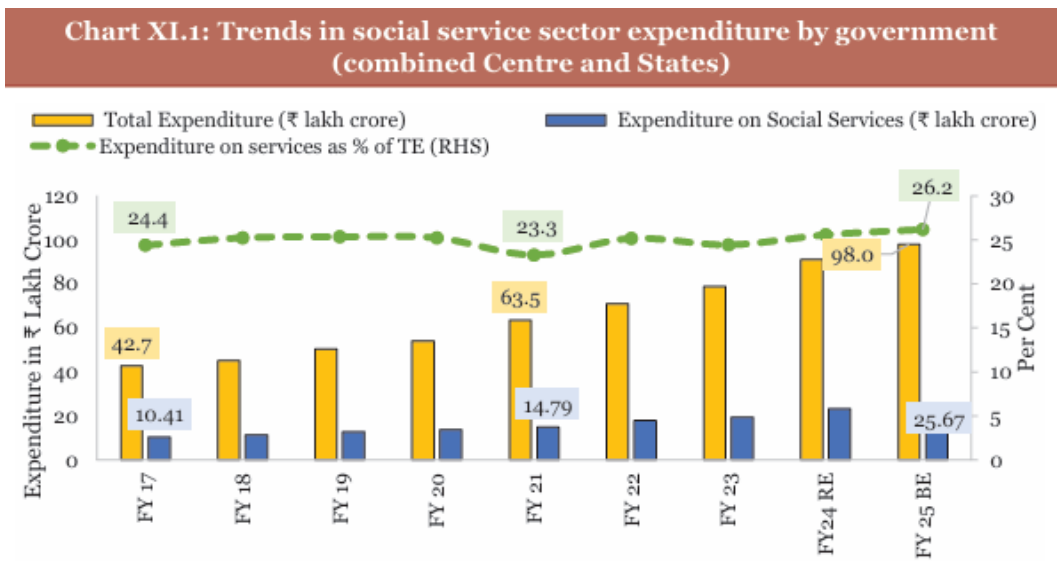
- The **economic and social development** starts with **sustainable and inclusive** economic growth, central to the vision of **Viksit Bharat 2047**.
- Inclusive growth** also improves the overall living standards of citizens of the country in terms of healthcare, education, basic necessities of life and livelihood.
- For **growth to transition** into meaningful development focus is required on education, health, social security, enhancing employment opportunities through skilling etc.

Chapter Precap

Outcomes <ul style="list-style-type: none"> Social services expenditure has shown a rising trend Urban-rural gap in MPCE has declined Inequality has reduced 	Education <ul style="list-style-type: none"> School Education Social and emotional learning Various programmes for promotion of education Bridging the gap with Digital technology Higher Education
Health <ul style="list-style-type: none"> Government expenditure increased Transforming healthcare for tomorrow Disruptive technology Mental well-being 	Rural economy <ul style="list-style-type: none"> Rural Infrastructure Localising SDGs to Power rural progress Rural Welfare: Social inclusion, Gender Enhancing Rural Incomes

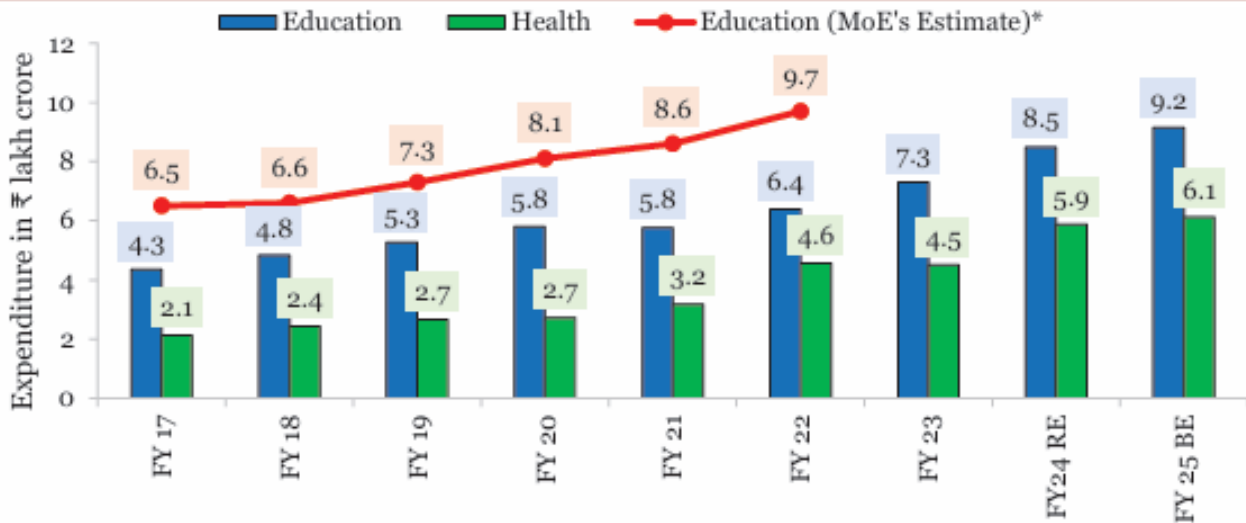
Trends in Social services expenditure

- Social services expenditure (SSE):** The SSE as a percentage of total expenditure (TE) has increased from **23.3% in FY21 to 26.2% in FY25 (BE)**. From FY21 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).

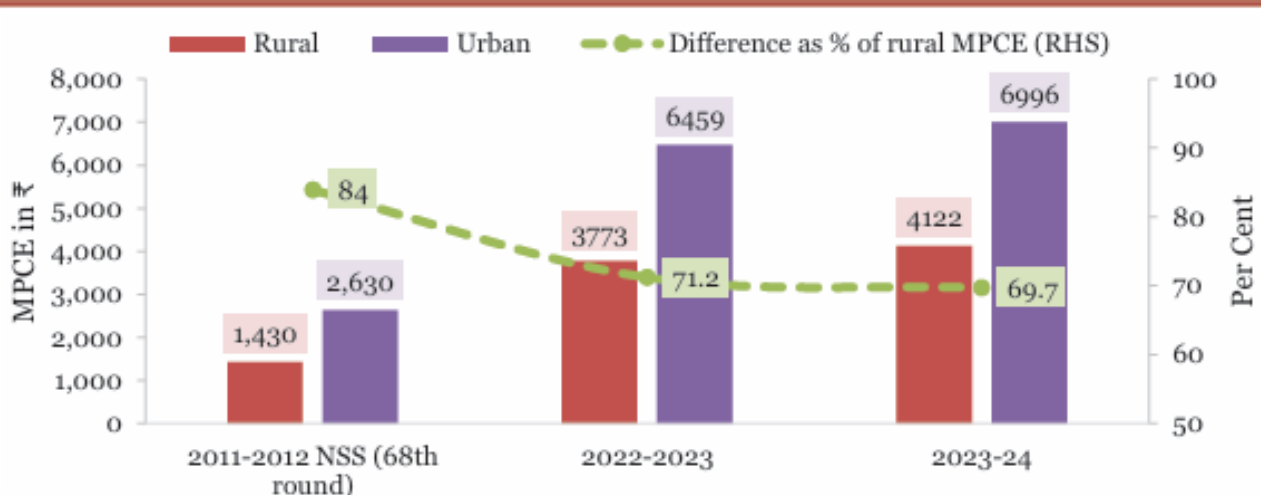
Chart XI.2. Expenditure on education and health



Household Consumption Expenditure Survey 2023-24: Outcomes

- Narrowing Urban-rural gap:**
 - 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.
 - The average **monthly per capita expenditure (MPCE)** in rural and urban India in 2023-24 is estimated at ₹4,122 and ₹6,996, respectively.
- Inequality reduced:** 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).
- Reasons for reduced Inequality:**
 - Public spending on social services** such as education and health; Welfare schemes such as free foodgrain or subsidised availability of foodgrains, subsidised cooking fuel, insurance cover, etc.
 - Re-distribution impact of the Public Distribution System (PDS), Study by World Bank**
 - The **market-equivalent value of the PDS/PMGKY subsidy equals 4%** of the (final or post-subsidy) nominal **monthly consumption expenditure per capita (MPCE)**, on average, across all households.

Chart XI.3. Declining urban-rural gap in consumption



Source: HCES 2023-24, MoSPI

Education: treading new pathways

- Education and human capital development are among the **foundational pillars** of development.
- **The New Education Policy (NEP)** states that it aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our **Constitution**.

School education

- The **NEP 2020 aims** for a 100 % Gross Enrolment Ratio (GER) by 2030.
- **Early Childhood Care and Education:** 85 % of brain development occurs before the age of six years.
- **Initiatives taken:** Aadharshila, Navchetana, National Framework for Early Childhood Stimulation.

Progress in School Infrastructure

- **Enrollment:** Gross Enrollment Ratio (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 %).

Year	2019-20	2021-22	2022-23	2023-24
Girls Toilet	96.9	97.5	97	97.2
Boys Toilet	95.9	96.2	95.6	95.7
Hand wash Facility	90.2	93.6	94.1	94.7
Library/Reading Room/Reading corner	84.1	87.3	88.3	89
Electricity	83.4	89.3	91.7	91.8
Medical check-ups in school in a year	82.3	54.6	74.3	75.2
Computer	38.5	47.5	47.7	57.2
Internet	22.3	33.9	49.7	53.9

- **Dropout:** School dropout rates have **steadily declined** standing at 1.9 % for primary, 5.2 % for upper primary, and 14.1 % for secondary levels.

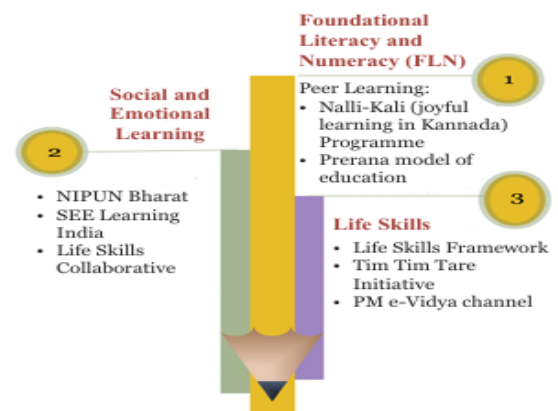
Building strong foundations through literacy and numeracy

- NEP 2020 stipulates that **foundational literacy and numeracy (FLN)** is critical for education and lifelong learning success.
- National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat), launched to ensure that every child in the country necessarily attains FLN by the end of Grade 3, by 2026-27.
- **Initiatives taken:** Peer Teaching E.g. Nalli-Kali (joyful learning in Kannada) programme, Prerana model of education (Andhar Pradesh, Karnataka) etc.

Empowering minds: Unlocking potential with Social and Emotional Learning (SEL)

- **SEL** is a process of acquiring the competencies to recognize and manage emotions, develop care and concern for others, establish positive relationships, make responsible decisions, and handle challenging situations effectively. (UNESCO)
- **Every dollar invested in SEL initiatives, results in estimated long-term economic return of \$11**, with outcomes around mental health, education, and employability.
- **Initiatives Taken: The Tim Tim Tare initiative**
 - Aim: impart **essential life skills** to adolescent students across India.

Building Blocks for a Better Education





- 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.)

Programmes	Purpose
NISHTHA	Integrated teacher training program
District Institutes of Education and Training (DIETs)	District level nodal institutions guiding school education and teachers education
Kasturba Gandhi Balika Vidyalaya	Residential schools for girls from disadvantaged groups
National Assessment Centre PARAKH	Guiding school educational boards, Achievement Surveys, standards norms for student assessment, building capacity for assessments.
Digital Infrastructure for knowledge sharing (DIKSHA)	Digital platform for school education by NCERT.
Strengthening of teaching learning and results for states (STARS)	Improving quality of governance of school education
Pradhan Mantri Schools for Rising India (PM SHRI)	Setting up exemplar schools
ULLAS-Nav Bharat Saaksharta Karyakram	Foundational literacy and numeracy for non-literates above 15 years of age.
PM POSHAN	One hot cooked meal for student of class 1-VIII in government and government aided schools.
Vidyanjali	Connects volunteers(alumni of educational institutions, serving and retired teachers, scientists) directly with schools of their choice
Navchetana	It focuses on holistic development for children from birth to three years, offering 140 age specific activities through a 36-month stimulation calendar.
Aadharshila	It promotes play-based learning with over 130 activities for children aged three to six years that support child-led and educator-led learning.

Bridging the gap with Digital technology

Digital literacy ensures that students remain competitive by mastering skills like analysing, synthesising, and communicating digital information

Initiatives taken

- **SWAYAM (Study Webs of Active Learning for Young Aspiring Minds):** an open learning massive open online courses platform.
- **Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA).**
- **PM e-VIDYA:** unifies digital education efforts by offering diverse content through DIKSHA and Sathee platforms.
- **Leveraging technology** for efficient and effective education delivery
 - Leveraging AI for teachers' professional development and providing AI-driven personal tutors for students.
 - Integrating industry-relevant skills and certifications into education.
 - Building personalised learning software layers & developing AI labs.
- The **traditional method of learning** through physical methods in the classroom still holds merit.
 - **Illam Thedi Kalvi Scheme** launched by the **Tamil Nadu** government aimed to bridge the education gap brought about by the Covid-19 pandemic and the digital divide

Children with Special Needs (CwSN)

- 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:** Disability Screening PRASHAST, PM eVidya, National Guidelines and Implementation Framework on Equitable and Inclusive Education (NGIFEIE) (2021-2030).

Higher Education

- There has been an **increase of 26.5% in enrollment in higher education** from 2014-15 to 2021-22.
- **GER** for the **18–23** age group has increased from **23.7% to 28.4%** during this same period
- Number of **Indian Institutes of Technology increased** from 16(2014) to 23(2023), while **Indian Institutes of Management has grown** from 13(2014) to 20(2023).
- Total **Higher Education Institutions (HEIs) increased** by **13.8%** from 2014-15 to 2022-23.
- **Measures taken to make India’s HEIs multidisciplinary:**
 - NEP 2020, Online education and Open Distance Learning (ODL), scholarships by private/philanthropic universities, ‘**light but tight**’ **regulatory model** envisioned by the NEP etc.
- **Challenges to medical education:**
 - **Affordability** (fees remain high at ₹60 lakh to one crore or more in the private sector which holds 48% of MBBS seats.),
 - **Geographical reach** (51% of undergraduate seats and 49% of postgraduate seats are in the southern states)
 - **Specializations** is skewed towards some branches,
 - **Remuneration** is less for entry level and doctors, **Faculty** availability.

Towards a healthy nation

Health Estimates

- **Total Health Expenditure** per capita (at constant prices) has shown an increasing trend since FY19.
- Government health expenditure has increased from **29.0 % to 48.0 %**.
- **Out-of-pocket expenditure (OOPE)** in THE (Total Health Expenditure) has **declined from 62.6% to 39.4%**.

Chart XI.5 Key pillars of health policy⁹²

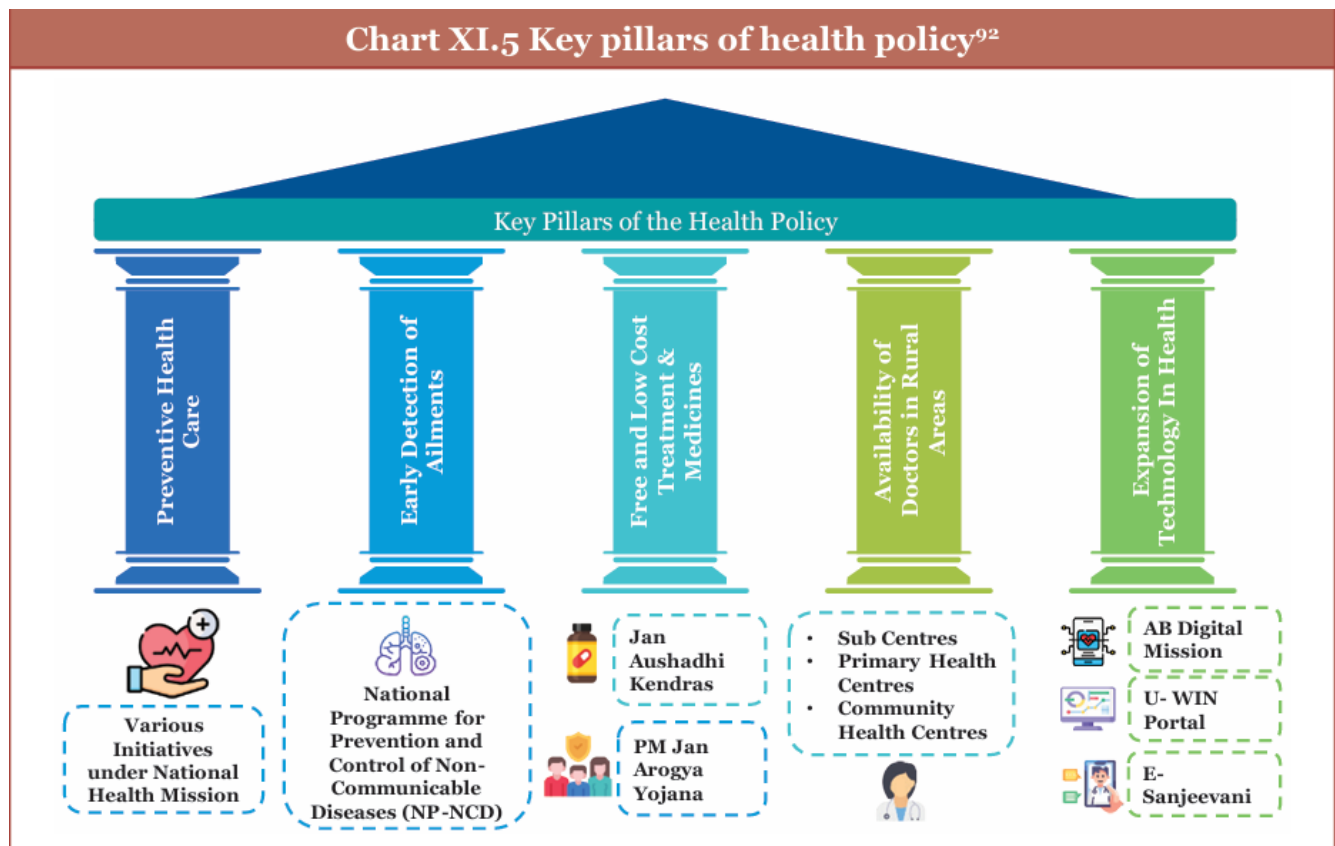
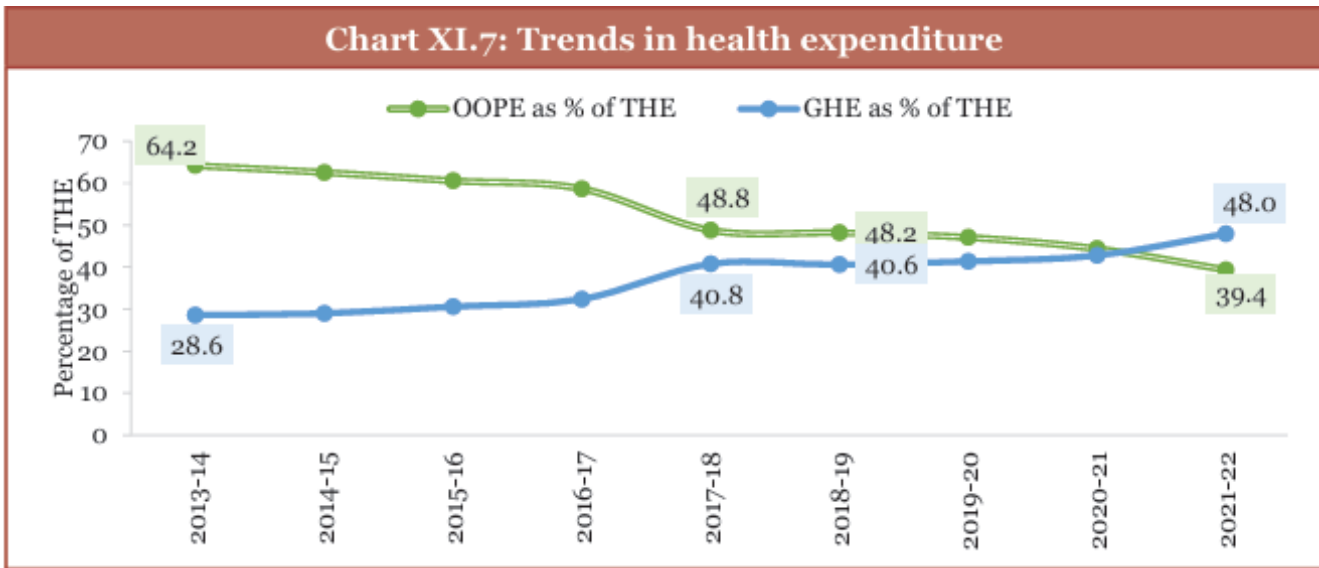


Chart XI.7: Trends in health expenditure



- **Initiatives taken for Insurance Coverage:-**
 - Employees State Insurance Corporation (ESIC)
 - Central Government Health Scheme (CGHS)
 - Ex-Servicemen Contributory Health Scheme (ECHS)
 - Rashtriya Swasthya Bima Yojana (RSBY)
 - Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)

Transforming healthcare for tomorrow

- **Initiatives taken:**
 - **Ayushman Bharat (AB):** Launched in 2018, AB represents a paradigm shift from selective health services to a **comprehensive continuum** of care, addressing prevention, promotion, and treatment across **primary, secondary, and tertiary levels** with operationalization of **Ayushman Arogya Mandirs (AAM)**.
 - **PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM):** Launched in October 2021, the Mission is being implemented over five years from FY22 to FY26, with the aim to strengthen the **public health infrastructure**.
 - **Free Drugs Service Initiative (FDSI):** This provides **financial support** to **states/UTs** for ensuring the availability of essential drugs.
 - **Universal Immunisation Programme (UIP):** It offers **11 vaccines free of cost**, protecting against 12 vaccine preventable diseases. Full immunisation coverage for FY24 at 93.5 % nationally.
 - **Jan Aushadhi scheme**, launched to provide affordable medicines, has gained significant momentum, achieving record sales in 2024 and expanding to over 14,000 kendras nationwide.

Disruptive technology providing seamless and equitable healthcare

- **U-WIN:** This user-friendly platform enables seamless access to **immunisation** records, flexible scheduling, and **‘Anytime Access’** and **‘Anywhere’ vaccination**.
- **E-Sanjeevani: National Telemedicine Service** has emerged as the world's largest telemedicine implementation in primary healthcare.
- **Ayushman Bharat Digital Mission (ABDM):** Launched in September 2021 with the aim of creating a national digital health ecosystem, it supports universal health coverage.
- **Aerial angels:** Changing the healthcare landscape, e.g. **‘i-DRONE’ (ICMR’s Drone Response and Outreach for North East):** It uses drones to deliver vaccines and medical supplies.



- **Advancing healthcare through AI:** AI combined with robotics and the Internet of Medical Things (IoMT) can potentially become the ‘**new nervous system for healthcare**’. E.g. Use of Tele-Radiology and AI in silicosis management by Rajasthan government etc.
 - **Challenges in adoption of AI includes** lack of specialised talent (both technical and domain-specific), data complexities, and difficulties in scaling up.

The Impact of lifestyle and work culture on mental well-being

- **Mental well-being** is not static. There are a myriad of factors, including workplace culture, working hours and lifestyle that influence mental well-being.
 - **Mental Health Quotient assessment** evaluates mental functioning from distressed to thriving.
- 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**.
- **Mental health issues in children and adolescents:** It is often linked to the overuse of the internet and, specifically, social media.
 - **“Phone-based childhood”** is rewiring the very experience of growing up.
- **Initiatives taken:** National Mental Health Policy, 2014, Mental Healthcare Act, 2017, Tele-MANAS Mobile Application.

Impact of lifestyle choices on health

- **Non-communicable diseases (NCDs):**
 - 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.
 - **Proportion of deaths** due to NCDs in India increased from **37.9 % in 1990 to 61.8 % in 2016**.
 - > **Reasons:** unhealthy diet & ultra-processed foods, lack of physical activity, tobacco use, and alcohol consumption
 - **Initiatives taken:**
 - > **National Programme for Prevention and Control of NCD (NP-NCD)**
 - > **Population-Based Screening (PBS) initiative** for early NCD detection, targeting individuals aged 30 and above.
 - **Way Forward:** Health Tax, labelling and restricting marketing, awareness, LiFE, regulation of advertisement etc.

Rural economy

Government emphasis is on improving the quality of life in rural areas to ensure more **equitable and inclusive development**. Various measures encompassing rural housing, drinking water and sanitation, clean fuel, social protection, rural connectivity have been taken in this regard.

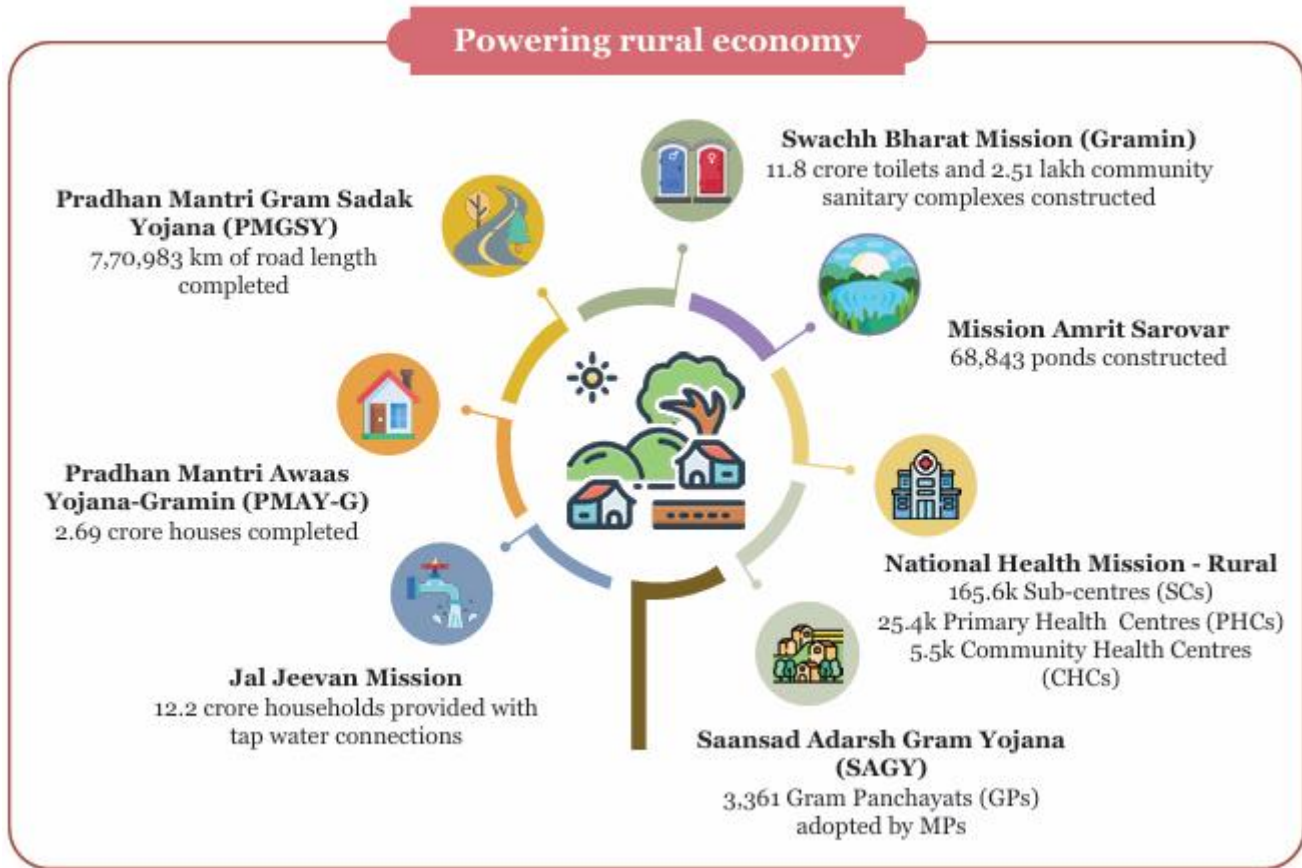
Rural Infrastructure

- **Rural Housing: Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN)**, a separate vertical has been launched under Pradhan Mantri Gram Sadak Yojana (PMGSY) to provide the connectivity to unconnected PVTG habitations.

Localising SDGs: Powering rural progress

- **SDG localisation** is the process of adapting and customising SDGs 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**).
 - This approach drives **inclusive growth** and improved **quality of life** at the grassroots level.
- 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)**.

- The preparation for a **Local Indicator Framework (LIF) at the GP level** is already in the process where nine themes have been designed spanning across the 17 SDGs.
- **Examples in India:**
 - **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 Ayog.



Other measures towards rural welfare

- **Food, Nutrition, Health, and WASH (FNHW):** To address health, nutrition, WASH, and sanitation issues, 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) have developed state-specific strategies to integrate DAY-NRLM components and community institutions, addressing issues such as 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).
 - Over 25 lakh GPPs and more than 89,000 Gender-CRPs work within more than 31,000 Cluster Level Federations (CLFs) and 5,00,000 Village Organisations (VOs).
- **Free legal assistance in remote and rural areas:** The National Legal Services Authority (NALSA), established under the Legal Services Authorities (LSA) Act of 1987, provides free legal services to disadvantaged sections of society.
- **Others:** Gram Nyayalayas Act, 2008, National Social Assistance Programme (NSAP).



Enhancing rural incomes

- **Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY NRLM)**
 - DAY-NRLM is a flagship poverty alleviation programme, launched in 2011 with the aim to reduce poverty by enabling poor households to access gainful self employment and skilled wage employment opportunities.
- **Mahatma Gandhi National Rural Employment Guarantee Scheme:**
 - The MGNREGA 2005 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.
 - **99.98 % payments** are through **National Electronic Fund Management System**.
 - MGNREGS began as a **wage employment scheme**, it has evolved into a durable **rural asset creation programme** for sustainable livelihood diversification.
 - > **Rural ecological health** through improvement of soil quality and plantation and improved rural water management for agriculture through integrated watershed management (IWM) assets.
 - > **Capacity development of workers** is being promoted through initiatives like Bare Foot Technicians (BFT) and UNNATI skilling project.
 - **Convergence with other Initiatives:** Nutri Gardens with NRLM, fodder farms with the Department of Animal Husbandry and Dairying (DAHD), promoting aquaculture in ponds and farm ponds with Department of Fisheries, rural roads with PM Gram Sadak Yojana etc.

Outlook

- A **welfare-enhancement approach** by the government, focusing on empowering all citizens and ensuring the efficient delivery of welfare measures.
- With the focus on **education, health, skilling, and innovation**, with improved social and economic infrastructure the aim is to achieve welfare for all.
- There is a **gap between class standards and actual learning** levels which can be improved by implementing **innovative teaching methods** and strategies that **prioritise** peer learning, social and emotional development, digital literacy, and life skills.
- The National Health Policy 2017 advocates universal health coverage, affordable care, and prevention of NCDs. Moreover, **Mental health initiatives and strategies** are crucial for promotion of healthier lifestyles, addressing Non Communicable Diseases and boosting productivity.
- **Trust-based regulation** backed up by **transparency and disclosure** is also needed along with promotion of markets to receive the demographic dividend in full in the coming years.

What does the Budget say?

- **Social Welfare:** 60,052 crores
- **Rural Development:** 2,66,817 crores
- **Education Expenditure:** 1,28,650 crores
- **Health Expenditure:** 98,311 crores
- **Rural Infrastructure:** PMGSY (phase IV) to provide all weather connectivity to 25,000 rural habitations.

Glossary

Terms	Meanings
Life Skills	Life skills are abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life (WHO) . E.g. empathy, critical thinking, etiquette, time management.
Social and Emotional Learning (SEL)	SEL as a process of acquiring the competencies to recognize and manage emotions, develop care and concern for others, establish positive relationships, make responsible decisions, and handle challenging situations effectively. (UNESCO)



Out of pocket expenditure	It represents the expenditures borne directly by a patient when insurance does not cover the full cost of the health good or service.
Household Consumption Expenditure Survey	It collects information on consumption of goods and services by the households.
SDG Localization	It is the process of adapting and customising SDGs and translating them into local development plans and strategies.

Test Your Learning

MCQs

1. Which of the following is the purpose of the Aadharshila?

- (a) Early Childhood Care and Education
- (b) Affordable social insurance scheme
- (c) Subsidised medicines for critical illnesses
- (d) Employment generation programme

2. Which of the following is the purpose of the Tim Tim Tare Initiative?

- 1. It aims to impart essential life skills to adolescent students across India.
 - 2. Built on the World Health Organization's (WHO) Life Skills Framework.
 - 3. It places emphasis on soft skills.
 - 4. Each topic is designed with activity-based learning.
- (a) Only One
 - (b) All four
 - (c) None
 - (d) Only two

3. Consider the following statements regarding the impact of the Universal Immunisation Programme (UIP):

- 1. It aims to provide immunisation at free of cost.
- 2. It offers 11 vaccines i.e. Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B, Haemophilus Influenza type B (Hib), Pneumococcal and Diarrhoea.

How many of the above statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 & 2
- (d) None

4. Consider the following pairs:

- 1. **U-WIN:** This user-friendly platform enables seamless access to **immunisation** records, flexible scheduling, and 'Anytime Access' and 'Anywhere' vaccination.
- 2. **E-Sanjeevani: National Telemedicine Service** has emerged as the world's largest telemedicine implementation in primary healthcare.
- 3. **'i-DRONE' (ICMR's Drone Response and Outreach for North East):** Using drones to deliver vaccines and medical supplies.

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) None
- (d) All three


5. Which of the following about Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) are true?
- A separate vertical has been launched under PMGSY.
 - The population norms have been relaxed upto 1,00,000.
 - A total of 80,000 Km of Road length is targeted to be constructed under this vertical.
 - It is to provide the connectivity to all tribal habitations.

Mains Questions

- Education is foundation to the development of the country. Discuss whether Technology has disrupted the traditional learning structure in Indian context. What are the various measures taken to improve school education by the government? (250 words)
- “Phone-based childhood” is rewiring the very experience of growing up. Discuss the impact of social media on children and suggest measures to minimize the harm. (150 words)

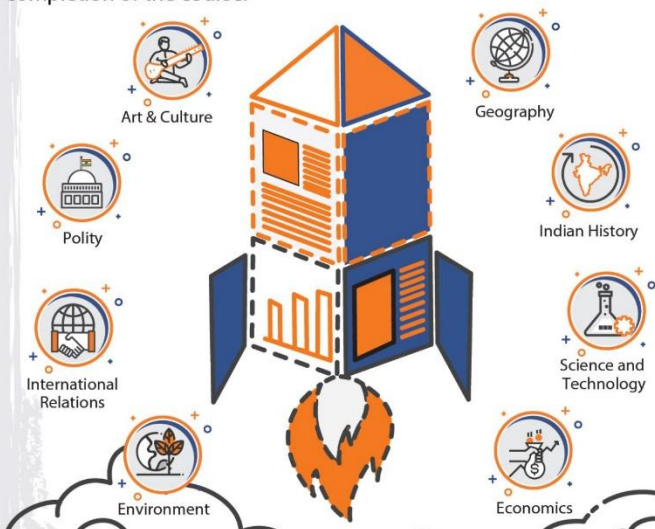
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Chapter 12: Employment and Skill Development: Existential Priorities

Introduction

Employment is the crucial link between growth and prosperity. Generation of suitable employment opportunities, commensurate with the legitimate aspirations of India's youth, is necessary to reap the country's once-in-a-lifetime demographic opportunity.

Chapter Precap

State of Employment

- Current Employment Scenario: Unemployment rate declined.
- Rise in Female LFPR provides a tapping potential for economic growth
- Wages and Earnings has Improved
- Growing formal sector in India: Net additions to EPFO subscriptions

Job creation: action towards enhanced employment opportunities

- Security vs. Flexibility: The role of regulation in job creation
- Driving employment opportunities through the digital economy
- Building a green workforce: Job creation in the renewable energy sector

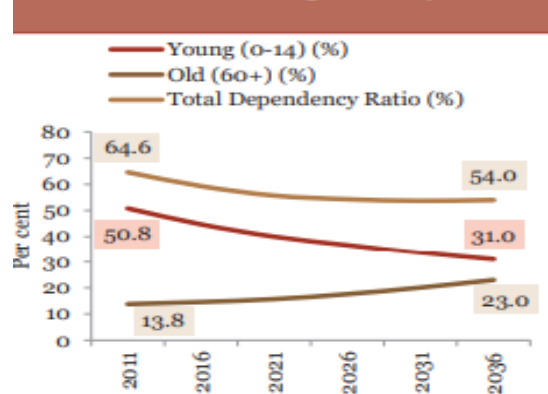
Skill Development: Upskilling, Reskilling And New Skilling For A Changing World

- Skilling Scenario
- Tiered skill framework for reskilling and upskilling
- International mobility of skilled workers

Demographic Dividend of India

- Around **26 % of the population is in the age group 10-24 years** leading to decline in dependency ratio.
- The **declining dependency ratio** is further marked by the **falling child dependency ratio**, declining fertility rates, contributing to demographic advantage.
- The **total dependency ratio has declined** from 64.6% (2011) to 55.7% (2021) and is projected to fall further to 54.3 % by 2026.

Chart XII.2 (b): Dependency ratio



Source: Statement 4.1: Projected Population Characteristics as of 1 March; Women and Men in India 2022, MoSPI.

State of Employment

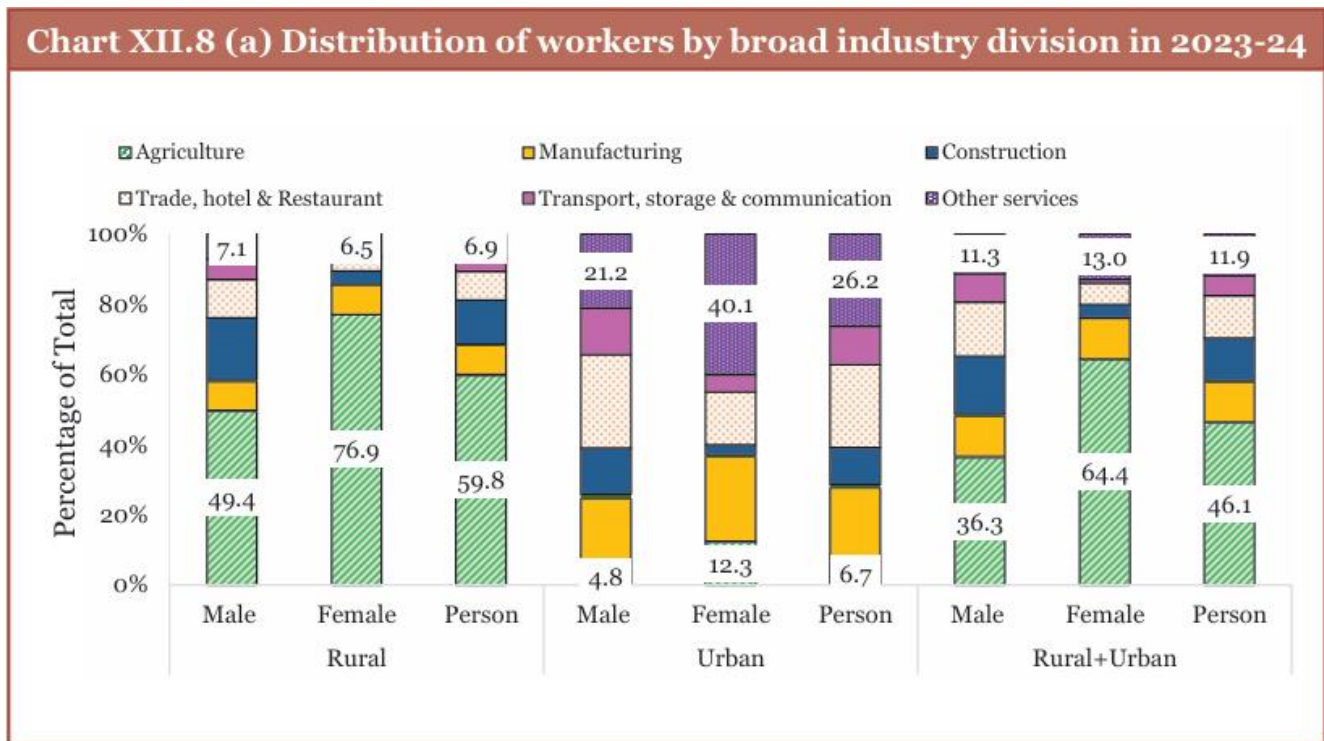
Current Employment Scenario

- **Unemployment:**
 - The all-India annual **unemployment rate (UR)** for individuals aged 15 years has declined to **3.2% in 2023-24 from 6.0% in 2017-18.**
 - The **urban UR** has dropped from 6.6% in Q2 FY 24 to 6.4% in Q2 FY 25.
- **Labour Force Participation:**
 - **Labour force participation rate (LFPR) increased from 49.3% to 50.4%**, and the **worker-to-population ratio (WPR) rose from 46% to 47.2%** during the same period (Q2 of FY24 to Q2 FY25).
 - 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 %.
- **Categories of workers:**
 - **Self-employed workers:** It has grown from 52.2% in 2017-18 to 58.4% in 2023-24.
 - **Regular/salaried job workers:** It **decreased from 22.8% to 21.7%** during the same period, the trend has stabilised since 2020-21.

- **Decline in casual workers: From 24.9% to 19.8%**, also indicates a shift toward more structured forms of self-employment.
- **Women:**
 - > While the proportion of women in **regular wage/salaried employment decreased**, more women engage in **self-employment or contribute to household enterprises**.

Sectoral distribution of the workforce

- Share of **agriculture in employment has risen from 44.1% in 2017-18 to 46.1%** in 2023-24.
 - The share of **female workers increased** significantly, from 57.0% in 2017-18 to 64.4% in 2023-24, whereas, **male participation in agriculture decreased** from 40.2% to 36.3%.
- Share of **manufacturing sector in employment has fallen** from 12.1% to 11.4% and
- Share of **services sector in employment has also fallen** from 31.1% to 29.7% during the same period.



Rise in Female LFPR: Tapping into female labour for economic growth

- From the gender perspective, the female labour force participation rate (FLFPR) has risen from **23.3% (2017-18) to 41.7% (2023-24)**.
 - The main reason behind the same is **rising participation of rural women** (Rural FLFPR rose from 24.6% in 2017-18 to 47.6% in 2023-24).
 - Moreover, rise in rural FLFPR can be attributed to the skilling initiatives and improved access to credit for diversified livelihoods provided to women’s collectives under the **Deendayal Antyodaya Yojana - National Rural Livelihood Mission (DAY-NRLM)**
- **Most states (21)** have a FLFPR in the range of **30-40 %**.
- Seven states/ UTs reported FLFPR greater than 40% in 2023-24 (**Sikkim reported maximum rate of 56.9%**).
- **Challenges faced by women:** Childcare responsibilities, transitioning from traditional to non-traditional, skill development, gender parity.

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

- Female participation in Various Sectors

- >80% artisans in Khadi Sector are women
- >50% of persons practicing sericulture are women

- Concerns

- Ownership & Leadership: Only 22% MSME enterprises are owned by women.** Moreover, they hold only 18.3% of board seats in 2023

- Rural Women** face challenges such as limited business skills, market access, and technology gaps, compounded by a lack of mentorship and networking.

- Systemic**








challenges such as skill gaps, compliance barriers, and limited mobility restrict women's access to digital platforms.

- Initiatives taken: Global Alliance for Mass Entrepreneurship (GAME), "Growthertor"** programme provides mentorship and peer networks for MSME growth, fostering profitability & job creation, **WE Hub - The Women Entrepreneurs Hub** of Telangana government.

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 Enterprises³⁰

 Formalisation of Enterprises³² 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.	

Ministry of Skill Development and Entrepreneurship

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
- Nominal wages have shown good growth across all categories, outpacing growth in real wages.
- Rural wages: Rural wages rose at above 4% every month, YoY in FY25 (April to September 2024).**
 - Nominal wage rate** in agriculture grew by 5.7% for men and 7% for women.
 - In non-agricultural activities, nominal wage growth for men was 5.5% while for women it stood at 7.9%.
- Wages in unincorporated sector enterprises:**
 - Annual Survey of Unincorporated Sector Enterprises (ASUSE) results:**
 - The **average emolument per hired worker rose** by 13% in 2023-24 compared to 2022-23.
 - Corporate profitability**

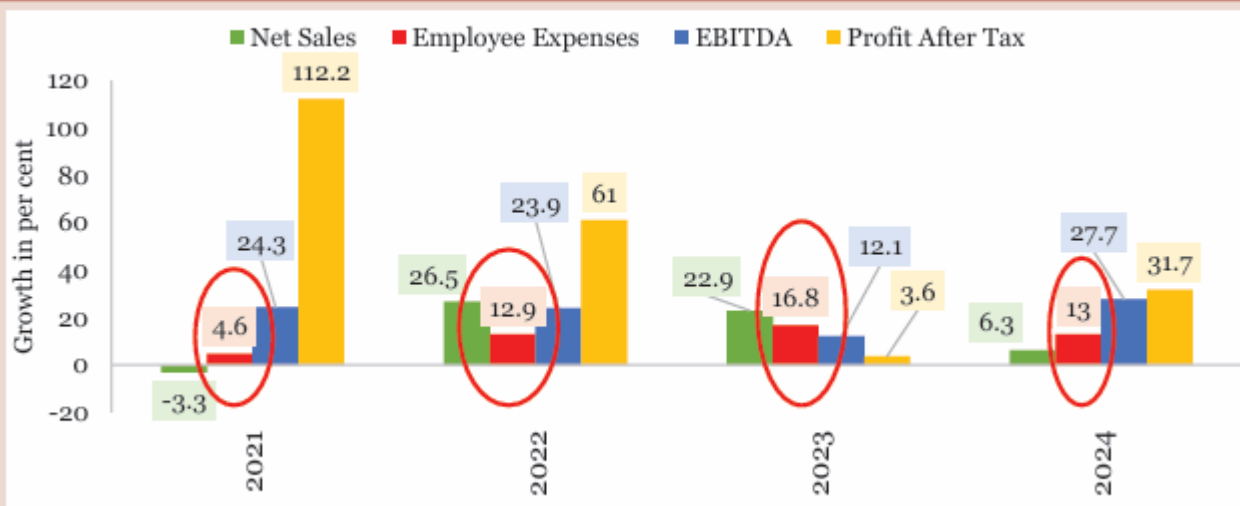
- > It soared to a 15-year peak in FY2024 with profits climbing 22.3%, however employment grew by a mere 1.5 %.
- > **Solution:** A social contract between the government, the businesses and workers as done in Japan after WW II.

Table XII.2: Trends in earnings

₹ Nominal Value	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Self-employed	10323	10454	10563	11678	13131	13279
Regular	15885	16728	17572	18391	19491	20702
Casual	277	291	318	374	403	418

Note:1. For regular and self-employed workers, average monthly nominal earnings are reported.
2. For Casual workers, the average per-day earnings are reported.
Source: Annual PLFS 2023-24, MoSPI

Chart XII.12: Growth of key parameters of 4000 listed entities

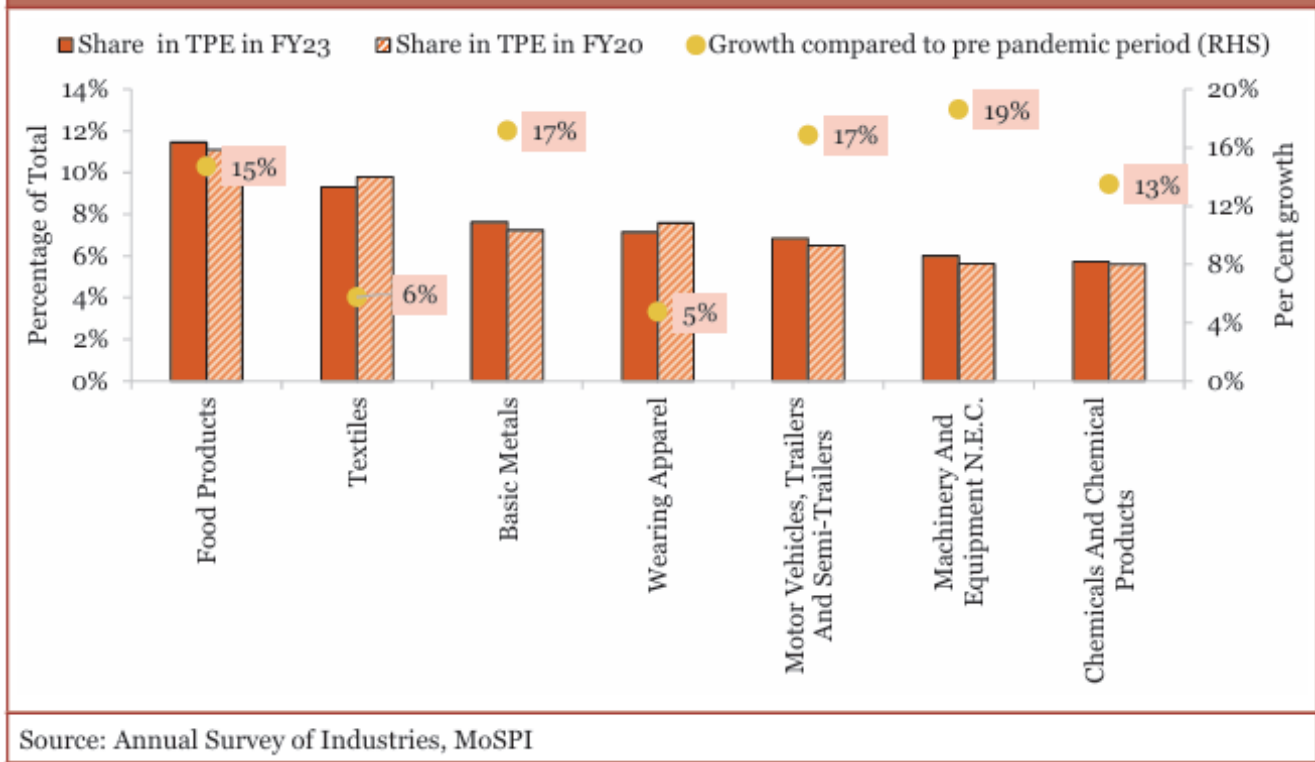


Source: Cline; SBI Research; around 4000 listed entities

Employment in Factories

- **Annual Survey of Industries (ASI) results FY23:**
 - **Manufacturing sector** showed more than 7% increase in employment.
 - **Large factories** employ ~80 % of total workers.
 - Computer, electronic and optical products and the manufacture of furniture have seen strong growth.

Chart XII.15. Industry groups registering high share in employment



Growing formal sector in India

- **Net additions to EPFO subscriptions** have more than doubled, rising from 61 lakh in FY19 to 131 lakh in FY24.
- **Industrial composition: Expert services form the largest share of EPFO payroll addition** (50 % in FY25, April-November), followed by trading other industries (12 %) and trading-commercial establishments (7 %).
- **Age group:** 18-25 years contributed to 47 % of the net payroll addition.

Welfare of Unorganised Workers

- **eShram portal** was launched to register and support unorganised workers.
- **eShram- “One-Stop-Solution”** was launched which entails the **integration of different social security/welfare schemes** on a single portal.

Job creation: action towards enhanced employment opportunities

Security vs. Flexibility: The role of regulation in job creation

- **Purpose of Regulation:** Ease of Doing Business, Flexibility in labour market, safeguarding worker rights and holding firms accountable
- **Steps taken:** Formulation of **four Labour Codes**
 - Code on Wages, 2019
 - Code on Social Security, 2020
 - Industrial Relations Code, 2020
 - Occupational Safety, Health, and Working Conditions Code, 2020.
- **Challenges:**
 - **Occupational safety and health.**
 - > **Solution:** Technology-Driven Solutions, adopting the internet of things (IoT) for risk detection in MSMEs, affordable virtual reality training modules, blockchain technology for tracking of claims.

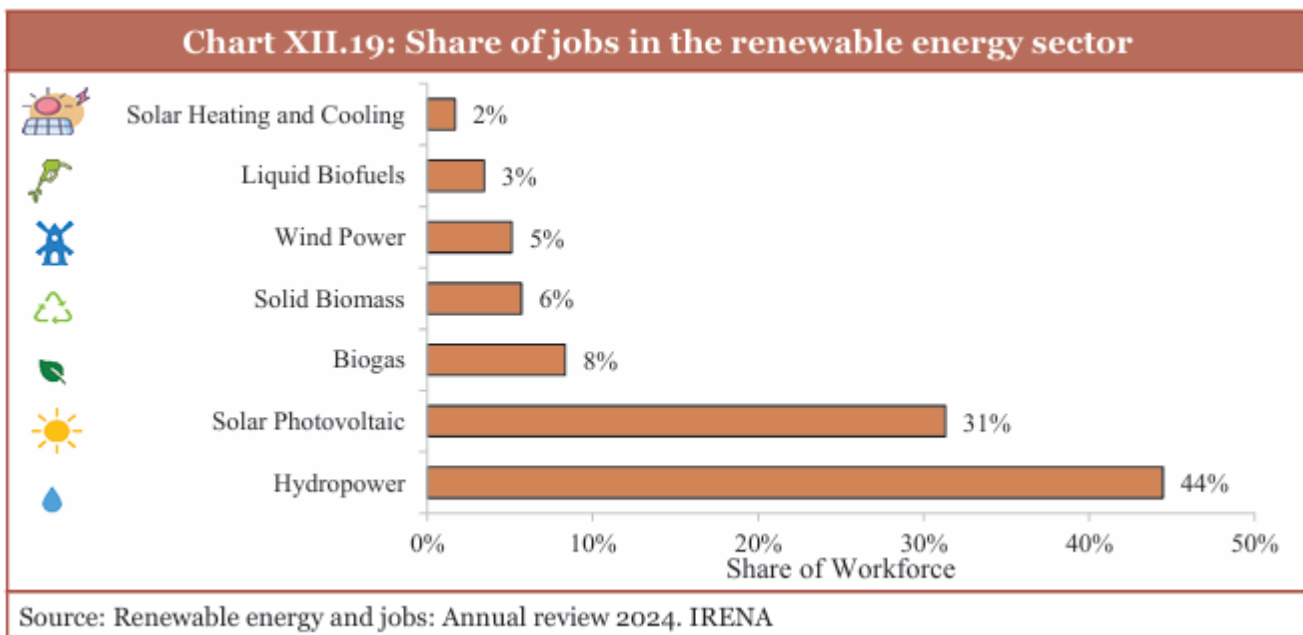
- > **Other:** safety awards, tax breaks, and a machine safety subsidy programme.
- **Inflexibility:** Excessive compliances, limit on working hours e.g. Section 51 of the Factories Act (1948), Restrictions on overtime for factory workers e.g. Section 65(3)(iv) of the Factories Act (1948).

Driving employment opportunities through the digital economy

- **OECD defines digital economy** as “all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, infrastructure, digital services, and data. It refers to all producers and consumers, including the government, utilising these digital inputs in economic activities”.
- **India's digital economy** is projected to **surpass USD one trillion by 2025**.
 - **Composition:** delivery personnel, cab drivers, beauty professionals, software engineers, data analysts, Hyperlocal service platforms like the transportation, food delivery, and home services industries.
 - **Statistics:**
 - > 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.
 - > **Fintech** will lead to **female employment and gender equality**.

Building a green workforce: Job creation in the renewable energy sector

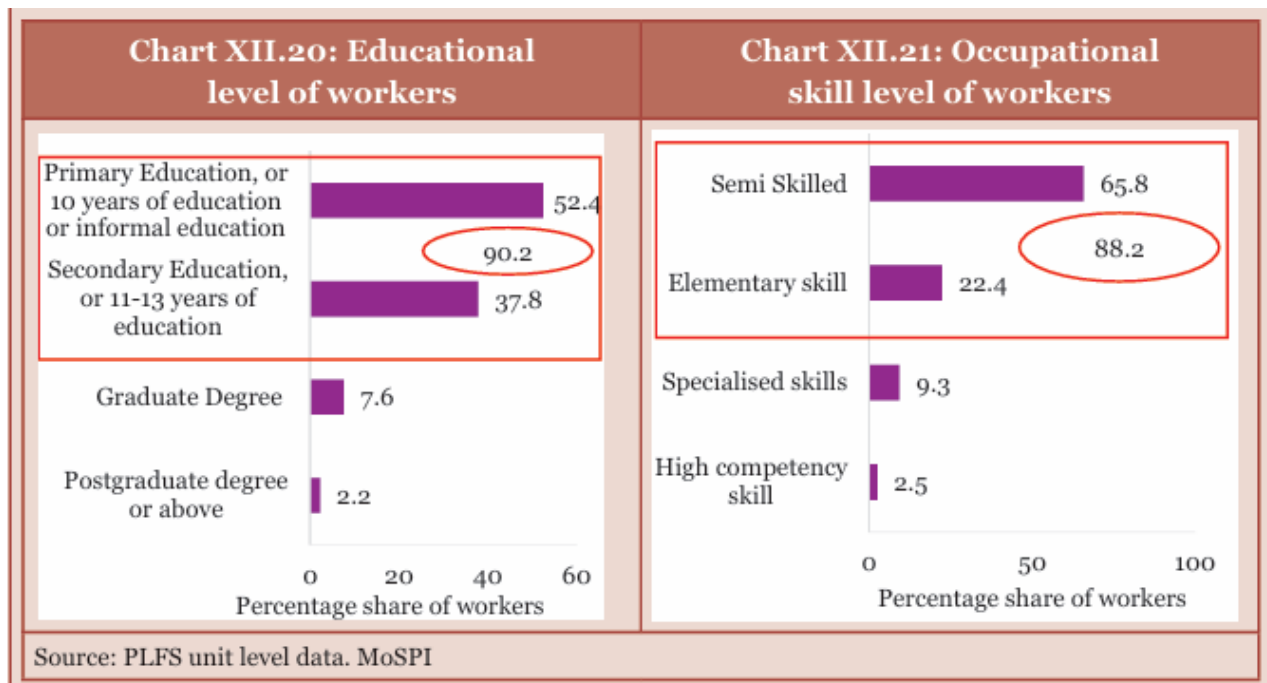
- Total number of jobs in the renewable energy sector in India reached an estimated 1.02 million in 2023 (IRENA, 2024) with Hydropower being largest.
- **Global Energy Alliance for People and Planet (GEAPP) interventions:** GEAPP India works closely with the **DAY-NRLM** to design and develop programmes to provide reliable clean energy access leading to improved livelihood for women enterprises.
- **Challenges to Women Employment:**
 - Climate Change, Disasters, Gender-biased tools, limited financing, socio-cultural and geographic barriers.
 - > Remote and hilly areas face additional challenges, including limited mobility, market access, and energy reliability.
- **Solution: Climate-smart solutions** that use **Decentralized Renewable Energy (DRE)** can be used **E.g.** Boipariguda-Sabujima FPO under Odisha's Millet Mission has adopted solar-powered processing.



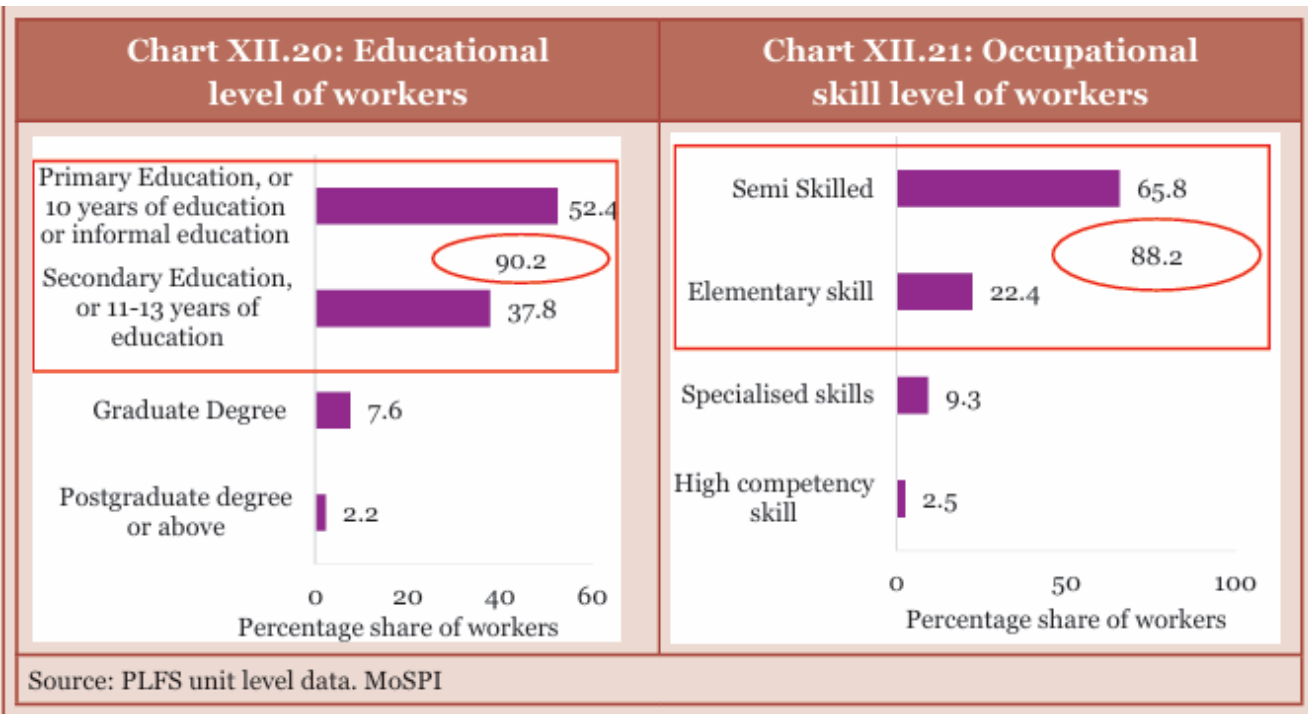
Skill Development: Upskilling, Reskilling and New Skilling For A Changing World

Skilling Scenario

- Education and Skill Level:**
 - PLFS data shows that **90.2% of the workforce** has **equivalent to or less than a secondary level of education**.
 - 88.2%** are involved in low-competency occupations- **elementary skilled and semi-skilled** occupational skills.
 - 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** like agricultural labourers, clerical staff, factory workers, and small-scale service providers.
- Challenges:**
 - 65.3% of the workforce received **no form of vocational training**.
 - Skill mismatch:** Reasons being imperfect matching between employers and workers, primarily driven by labour market inefficiencies or an imbalance between aggregate supply and demand for specific skills.



- Progress:** There is a significant improvement in the **proportion of skilled people from 2018-19 to 2023-24** across all socio-economic classifications.



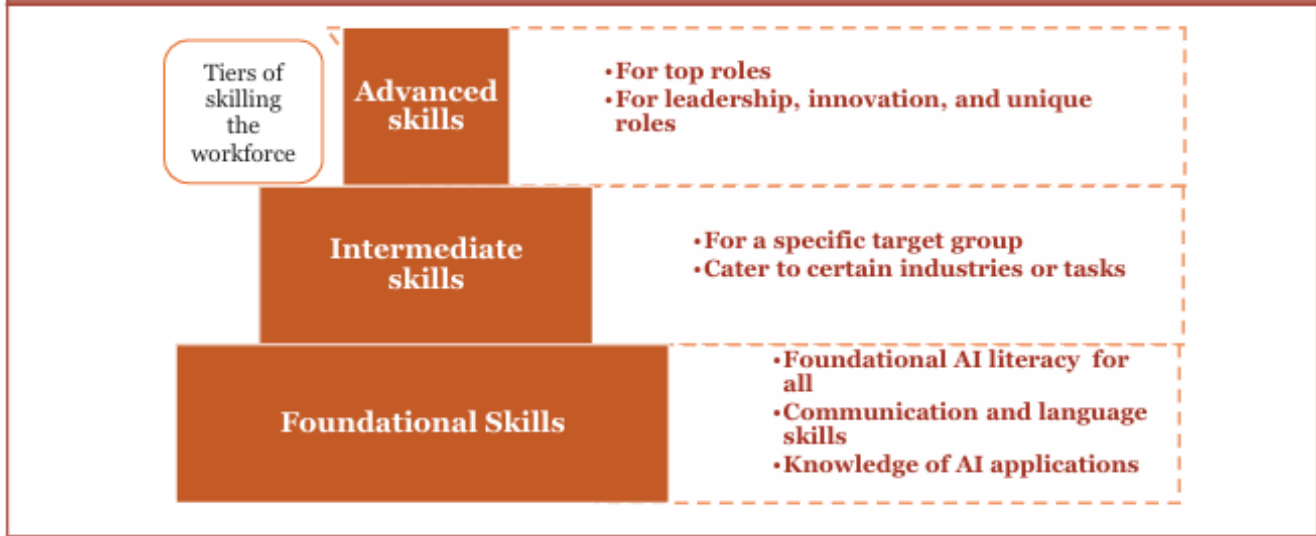
Initiatives taken by Government:

- **Reskilling & upskilling:** Over 1.24 crore enrolled in **Craftsmen Training Scheme** at Industrial Training Institutes (ITIs)
- **Women Participation:** Under **PMKVY** Women’s participation is 58% (FY25), in ITI/ National Skill Training Institutes (NSTI) women’s participation increased from 9.8% (FY16) to 13.3% (FY24).
- **Industry partnerships: New ITI Upgradation Scheme** (2024) with Upgrade of 1,000 ITIs in hub-and-spoke, **PM Internship Scheme**.
- **Digital public infrastructure for skilling: Skill India Digital Hub Portal, Democratising Skills** with Easy access to industry-aligned courses.
- **Way Forward:**
 - Education, school and higher;
 - Skill development incorporating Industry 4.0 and new age technologies like AI, ML;
 - Vocationalisation, Modernisation and Upgradation
 - Internship Programmes; public-private partnership for skill development and vocational training.

Tiered skill framework for reskilling and upskilling

- **A layered approach needed.** This new approach could include skills tailored for specific tasks or job roles, targeted at selected groups of workers, and foundational AI skills provided universally to everyone and across all sectors.

Chart XII.24: Skills Pyramid: Tiered framework for AI upskilling, reskilling and new skilling



International mobility of skilled workers

- India has a **diaspora population of 32 million, up from 18 million in 2020.**
- There is likely to be a demand of **97 million new jobs worldwide by 2025** in sectors such as healthcare, construction, IT, agriculture, and financial services.
- **Initiatives taken:**
 - **Bilateral partnerships: Migration and Mobility Partnership Agreements (MMPA), Labour Mobility Agreements (LMA), and Labour Welfare Agreements.**
 - **G2G Memorandums of Understanding** with countries such as Australia, Denmark
 - Curriculum development under the **National Skills Qualification Framework (NSQF)**
 - Skill India International Centers, Pre-Departure Orientation Training, Skill India International Centres, MEA's e-Migrate platform
- **Way Forward:** Conduct regular detailed demand-supply analyses to map global skill gaps and align skilling programmes with international labour market needs.

Conclusion

- India has seen **good growth in employment** with the growth in entrepreneurship, formalisation, skill development, and transformation of the regulatory framework.
- **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.
- A **'virtuous cycle of job creation'** has been fostered supporting sustainable employment growth and economic inclusivity.

What does the Budget say?

- **Tourism for employment-led growth:** Top 50 tourist destination sites in the country to be developed in partnership with states through a challenge mode.
- **National Centres of Excellence for Skilling:** 5 National Centres of Excellence for skilling to be set up with global expertise and partnerships to equip our youth with the skills required for "Make for India, Make for the World" manufacturing.



Glossary

Terms	Meanings
Demographic Dividend	It refers to the economic growth potential arising from a shift in a country's age structure, where the working-age population (15 to 59 years) outnumbers the non-working-age groups.
Dependency Ratio	The dependency ratio is the number of children (age 0-14 years) and older persons (age 60 years and above) per 100 working age population (15-59 years).
LFPR	LFPR is the percentage of working-age population engaged in work or making tangible efforts to seek 'work' or being available for 'work' if it is available.
WPR	WPR is defined as the percentage of employed persons in the total population.
ASUSE	ASUSE conducted by NSSO, is a survey of unincorporated non-agricultural establishments belonging to three sectors viz., Manufacturing, Trade and Other Services.
Digital Economy	All economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, infrastructure, digital services, and data. It refers to all producers and consumers, including the government, utilising these digital inputs in economic activities.

Test Your Learning

MCQs

1. Consider the following statements regarding the Employment Scenario:

1. Unemployment rate (UR) for individuals aged 15 years has declined.
2. Labour force participation rate (LFPR) and the worker-to-population ratio (WPR) have increased.

How many of the above statements is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 & 2
- (d) None

2. Consider the following pairs:

1. eShram portal: It was launched to register and support unorganised workers.
2. Growtherator: Provides mentorship and peer networks for MSME growth, fostering profitability, job creation, and long-term success.
3. Nandini Sahakar Scheme: 2 % interest subvention for innovative cooperative projects.
4. Swayam Shakti Sahakar Yojna: Working capital loan to support women SHGs.

How many of the above pairs is/are correctly matched?

- (a) Only one
- (b) Only two
- (c) None
- (d) All Four

3. With reference to India's efforts in facilitating overseas employment for its workforce, consider the following statements:

1. India has a diaspora population of 18 million as of 2024.
2. The government has undertaken initiatives such as Migration and Mobility Partnership Agreements (MMPA) and Labour Mobility Agreements (LMA) to enhance overseas employment opportunities.



- The National Skills Qualification Framework (NSQF) plays a role in aligning India's skilling programs with international job market needs.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2, and 3

4. With reference to the Government of India's initiatives for skilling and employment generation, consider the following statements:

- The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) has trained over 1.57 crore individuals, with a certification rate of more than 75%.
- The participation of women in Industrial Training Institutes (ITIs) and National Skill Training Institutes (NSTIs) has tripled from FY16 to FY24.
- The Skill India Digital Hub Portal aims to provide easy access to industry-aligned courses as part of India's digital public infrastructure for skilling.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2, and 3

5. With reference to India's digital economy and gig workforce, consider the following statements:

- India's digital economy is projected to exceed USD 1 trillion by 2025.
- The gig workforce constitutes software engineers, data analysts and administrative officers.
- The growth of Fintech in India is expected to enhance female employment and gender equality.

Which of the statements given above is/are correct?

- 1 and 3 only
- 2 and 3 only
- 1 and 2 only
- 1, 2 and 3

Mains Questions

- Despite various government initiatives, a significant portion of India's workforce remains low-skilled and faces challenges such as skill mismatch and lack of vocational training. Discuss the key factors contributing to this issue and suggest measures to enhance skill development in line with Industry 4.0 and emerging technologies.
- The digital economy has emerged as a key driver of employment generation in India, particularly through the expansion of the gig workforce and fintech-led financial inclusion. Analyze the potential of the digital economy in creating sustainable employment opportunities while highlighting the challenges associated with job security, social security, and skill requirements.



Chapter 13: Labour in the AI Era: Crisis or Catalyst?

Introduction

- The rapid advancement of artificial intelligence (AI) presents both unprecedented opportunities and significant challenges for labor markets worldwide.
- **Artificial Intelligence (AI)** will disrupt labour markets because of developments in the field over last four years. This **economic displacement** adds to a fear about AI exacerbating existing **social and economic divides**.

AI Scenario

- Between 2021 and 2023, **global corporate investments** in all types of AI totaled USD 761 billion.
- International Labour Organisation estimates that nearly **75 million jobs globally** are at complete risk of automation due to AI.
- NASSCOM estimates that the **Indian AI market will grow** at 25 to 35 % CAGR by 2027.

Need for Robust Institutions

- Past technology revolutions, **when not carefully managed**, have **been painful** characterized by widespread economic hardships, protracted unemployment and widening income inequalities.
- **Thus, there is need of High-quality institutions** act as mediators, ensuring that technological advancements yield broad-based benefits. Weak or absent institutions often exacerbate disparities, resulting in uneven economic and social outcomes.
- **Institutional Requirements for Workforce Transition**
 - **Enabling Institutions:** They are focused on equipping the workforce with the **necessary skills** needed to adapt and thrive in a shifting landscape. They **impart skills and augment** the content of **education**, ensuring that learning keeps up with the demands of the job market.
 - > They facilitate the **smooth transition** of the workforce to these new jobs, reducing the damage to worker income and preventing loss of employability.
 - **Insuring Institutions:** They 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.
 - > These institutions help **secure a standard of living** during the shift, keep inequalities in check and aid in keeping the social fabric cohesive. They are also responsible for reducing the recession risk, for individuals and for societies.
 - **Stewarding Institutions:** These will be responsible for designing an approach that delicately **balances public welfare without stifling innovation**.
 - > These institutions would be agile, crosscutting across sectors and up to date on the latest developments, so that they are **equipped to identify** both opportunities and threats.

Vision to Viability: AI's Real World Challenges



Practicality

Translating breakthroughs into practical, widely adopted applications remains challenging, as AI currently shows experimental and uneven utility



Reliability

Ensuring AI reliability is critical for real-world applications, as failures in key industries like autonomous vehicles or healthcare can prove problematic



Infrastructure

AI at scale requires substantial investments in infrastructure, including data centres, clean data pipelines, and computational resources

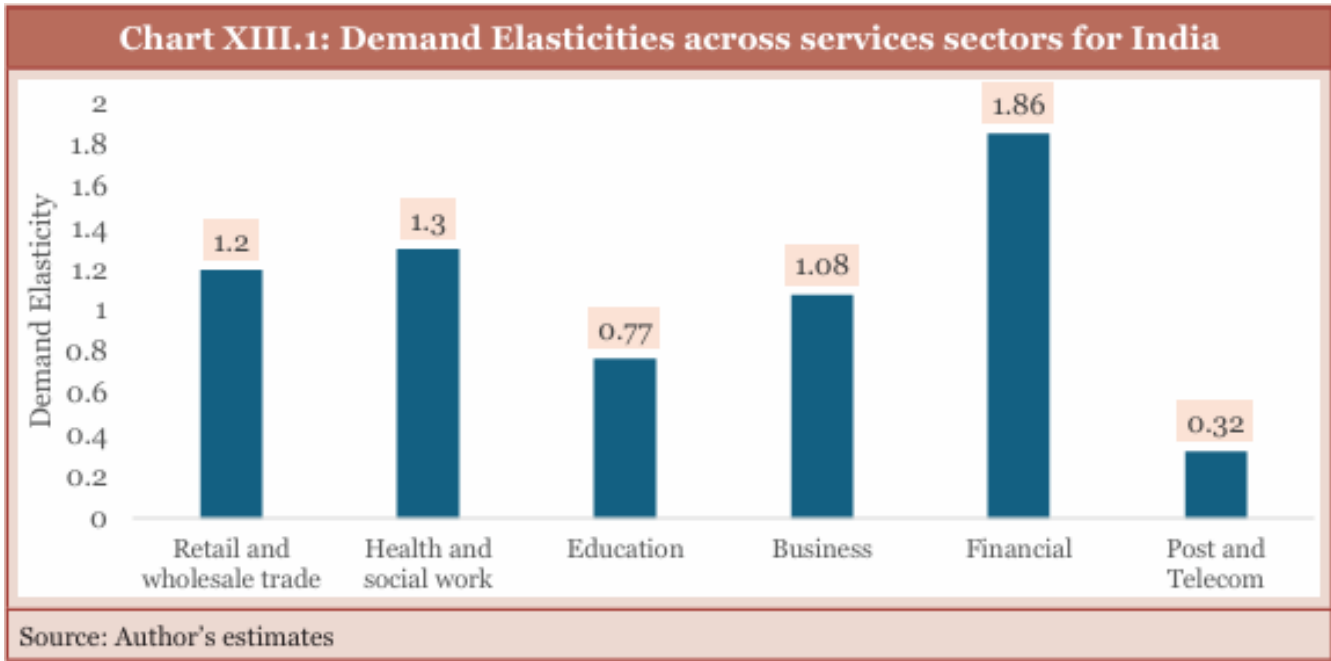


Resources

Large Models are resource intensive, requiring high energy consumption, dependency on scarce minerals for hardware, and finance, making sustainable innovation essential

AI And India: Are There Opportunities?

- The nation's predominantly services-driven economy coupled with its young and dynamic population offers a fertile ground for leveraging the benefits of emerging technologies.
- **Labour Market:**
 - Technical change has resulted in strong employment growth during the decades the technology was being refined.
 - > E.g. Automated manufacturing had robust job growth and higher earnings on the textiles, steel, and automotive industries of the United States.
 - **Accountability**, an understanding of the subjective and practical realities of the world, consistently adapting reasoning, cognisance of consequences, and critical thinking are **brought by humans**. Therefore **AI must be seen as a tool** to help humans in solving problems.
- **Augmenting India's Services Sector:**
 - As automation handles the routine and mundane tasks, there is a **need to upgrade skills** to focus on more complex questions and issues.
 - India's employment challenge is not just about numbers but also about raising the **overall 'quality' of the workforce** focusing on more **foundational skills** such as soft skills and core competencies.
- **Implication for the services sector in India:**
 - **Demand elasticities** can help gauge a sector's ability to raise employment because of productivity enhancements from automation.
 - High elasticities show that automation can aid productivity and employment gains in the sectors.
 - Demand for new products and services will create new, auxiliary tasks.
 - This will lead to **productivity effect** and **reinstatement effect** – reinstating labour into a broader range of tasks and thus changing the task content of production in favour of labour.



Conclusion

- The policymakers must **balance innovation with societal costs**, as AI driven shifts in the labour market could have lasting effects.
- **Coordinated efforts** between the government, private sector, and academia are required for a future of work where AI is **'Labour Augmenting'** rather than **'Labour Replacing'**.
- The future of work revolves around **'Augmented Intelligence'**, where the workforce **integrates** both human and machine capabilities.
- **Capacity building and institution building** is the need of the hour for India to capitalise on the opportunity that lies ahead along with **education and provision of safety nets**.

What does the Budget say?

- **Centre of Excellence in AI for Education:** A Centre of Excellence in Artificial Intelligence for education to be set up with a total outlay of ₹ 500 crore.
- **Deep Tech Fund of Funds:** It is to be explored to catalyze the next generation startups.

Glossary

Terms	Meanings
'Augmented Intelligence'	'Augmented Intelligence' , is condition where the workforce integrates both human and machine capabilities.
Reinstatement Effect	It refers to the process where automation creates new tasks, leading to job creation.

Test Your Learning

MCQs

1. **With reference to AI's impact on the global labour market, consider the following statements:**
 1. According to the International Labour Organization (ILO), nearly **75 million jobs globally** are at complete risk of automation due to AI.
 2. The Indian AI market is projected to grow at a Compound Annual Growth Rate (CAGR) of **50% by 2027**, as per NASSCOM estimates.



Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

2. Consider the following statements regarding AI and India's labour market:

- 1. The **'Reinstatement Effect'** refers to the process where automation creates new tasks, leading to job creation.
- 2. High **demand elasticity** in a sector indicates that automation will primarily lead to employment growth.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

3. Which of the following best describes the concept of "Augmented Intelligence" in the AI era?

- (a) AI completely replacing human workers in the workforce.
- (b) Humans and AI working together, with AI enhancing human capabilities.
- (c) AI automating only low-skilled jobs, leaving high-skilled jobs unaffected
- (d) AI being used solely for data analysis without any human intervention.

4. Which of the following are considered key challenges in implementing AI-driven solutions at scale?

- 1. High energy consumption and dependence on scarce minerals
- 2. Lack of accountability in AI decision-making
- 3. Absence of a tripartite compact between the government, private sector, and academia
- 4. Decline in demand for new skills and competencies

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 1, 2, and 3 only
- (c) 2 and 4 only
- (d) 1, 2, 3, and 4

5. Which sector in India is likely to benefit the most from AI-driven augmentation rather than replacement?

- (a) Manufacturing
- (b) Agriculture
- (c) Services
- (d) Mining

Mains Questions:

- 1. Artificial Intelligence (AI) is expected to disrupt global labour markets, raising concerns about job losses and widening economic inequalities. How can India leverage AI to create 'labour-augmenting' rather than 'labour-replacing' outcomes? Suggest measures to ensure inclusive and sustainable AI adoption.
- 2. Institutions play a critical role in shaping the future of work in the AI era. Explain the significance of 'Stewarding Institutions,' 'Enabling Institutions,' and 'Insuring Institutions' in mitigating AI-driven job disruptions.



Answers to MCQs

Chapter 1 Answers:

1) C	2) C	3) C	4) C	5) C
------	------	------	------	------

Chapter 2 Answers:

1) A	2) C	3) B	4) A	5) A
------	------	------	------	------

Chapter 3 Answers:

1) C	2) A	3) A	4) D	5) B
------	------	------	------	------

Chapter 4 Answers:

1) B	2) A	3) C	4) C	5) C
------	------	------	------	------

Chapter 5 Answers:

1) B	2) B	3) A	4) B	5) B
------	------	------	------	------

Chapter 6 Answers:

1) C	2) C	3) B	4) A	5) C
------	------	------	------	------

Chapter 7 Answers:

1) A	2) C	3) B	4) A	5) A
------	------	------	------	------

Chapter 8 Answers:

1) B	2) B	3) B	4) D	5) C
------	------	------	------	------

Chapter 9 Answers:

1) D	2) B	3) B	4) B	5) D
------	------	------	------	------

Chapter 10 Answers:

1) B	2) C	3) B	4) A	5) D
------	------	------	------	------

Chapter 11 Answers:

1) A	2) B	3) C	4) D	5) A
------	------	------	------	------

Chapter 12 Answers:

1) C	2) D	3) B	4) C	5) A
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Chapter 13 Answers:

1) A	2) C	3) B	4) B	5) C
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