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INSPIRING INNOVATION

ECONOMY

VALUE ADDED MATERIAL

MAINS 2025

Key Features:

Comprehensive Coverage:
Explains both foundational and contemporary economic themes

PYQ Integration:
Analyzes recurring exam themes and questions.

Data-Rich Content:
Offers relevant and practical economic statistics.

Critical Policy Evaluation:
Provides in-depth assessments of government policies.

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Student Notes:

ECONOMY

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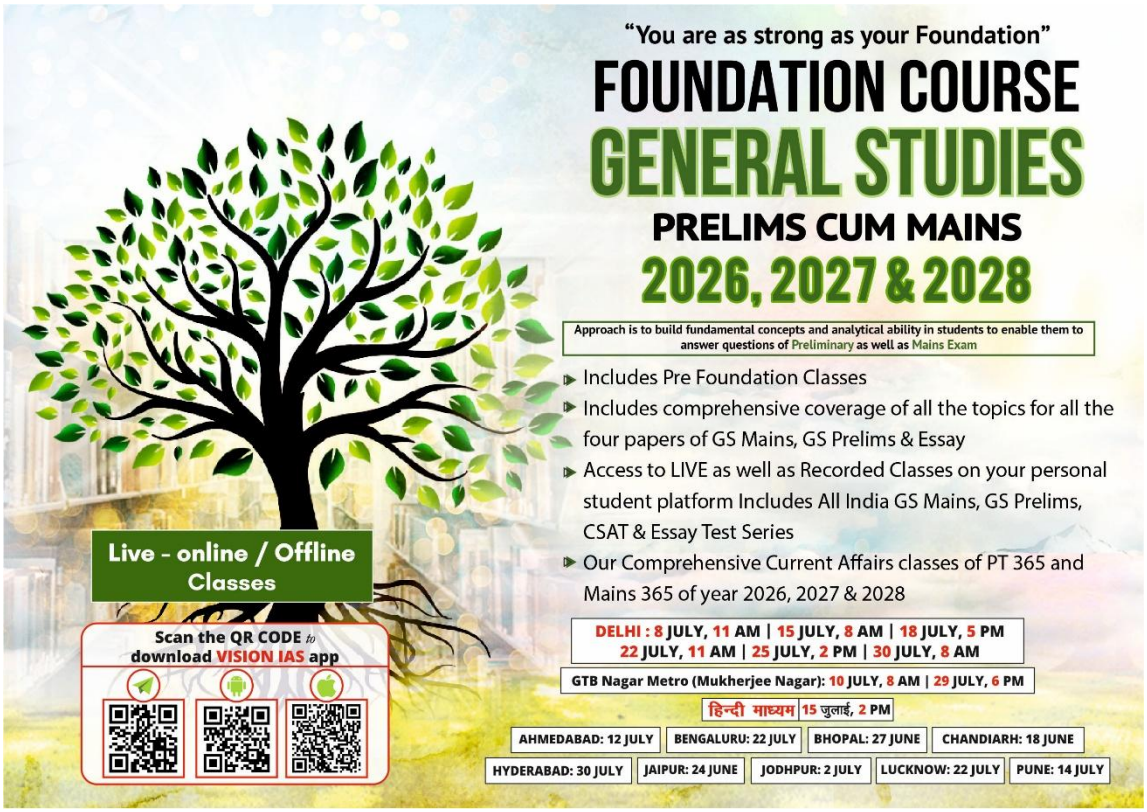

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Preface

Student Notes:

A Message to the Dedicated Mains 2025 Aspirant

Dear Aspirant,

Congratulations on conquering the first stage of the Civil Services Examination. The journey to Mains is a true test of not just your knowledge, but your strategy, endurance, and ability to articulate clear, analytical perspectives under immense pressure.

The Unique Challenge of GS-3 Economy

The Indian Economy section of GS Paper 3 presents a formidable challenge. Its syllabus is vast, and success requires a good blend of **static theory** with a sharp grasp of **dynamic current affairs**. The UPSC has moved decisively away from simple definitions; questions now demand a critical evaluation of government policy, a data-backed diagnosis of contemporary problems, and a holistic understanding of how different sectors of the economy interact. Reflecting this, questions have become progressively more analytical, a gap that conventional market materials often fail to bridge.

Our Philosophy: Precision and Relevance through Analysis

It is with this understanding that we have crafted this Economy Value Added Material (VAM). Our philosophy is grounded in precision and relevance. To ground your preparation in the reality of the exam, we have prefaced this material with a meticulous **PYQ-based analysis**. This will help you identify high-priority themes and understand the depth required for each topic, ensuring your efforts are sharply focused on what truly matters.

How This VAM Empowers Your Preparation

Our primary goal is to equip you with the content and confidence to write answers that command attention. This VAM is structured to achieve several key objectives:

- **Comprehensive Coverage:** This VAM is designed to explain both **foundational concepts**, like fiscal deficits and investment models, and **contemporary economic themes**, such as inflation dynamics, green energy transition, and digitalization.
- **PYQ Integration:** We have built this material around a deep **analysis of recurring exam themes and questions**. This PYQ-centric approach helps you decode the examiner's mindset and anticipate the specific demands of the paper.
- **Data-Rich Content:** A high-scoring Economy answer is built on evidence. This document arms you with **relevant and practical economic statistics**, key facts, and crucial findings from the Economic Survey, RBI reports, and various committees.
- **Critical Policy Evaluation:** We help you go beyond mere description by providing **in-depth assessments of major government policies**. You will be equipped with the analytical frameworks needed to evaluate the effectiveness, challenges, and real-world impact of schemes and reforms.

Our Commitment to Your Success

This document is a culmination of dedicated effort to simplify your preparation for this challenging paper. Our goal is to empower you to not just understand the Indian economy but to analyze it critically. Trust this resource, integrate its insights, and walk into the examination hall with the confidence to tackle the most demanding questions.

We wish you the very best.

Student Notes:

A Note on the Syllabus and Structure of This Document

The official UPSC syllabus for GS-3 Economy covers the following topics:

1. Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development, and Employment.
2. Inclusive Growth and issues arising from it.
3. Government Budgeting.
4. Major Crops - Cropping Patterns in various parts of the country, Different Types of Irrigation and Irrigation Systems, Storage, Transport, and Marketing of Agricultural Produce and Issues and Related Constraints, E-technology in the aid of farmers.
5. Issues related to Direct and Indirect Farm Subsidies and Minimum Support Prices.
6. Public Distribution System - Objectives, Functioning, Limitations, Revamping.
7. Issues of Buffer Stocks and Food Security.
8. Technology Missions.
9. Economics of Animal-Rearing.
10. Food Processing and Related Industries in India - Scope and Significance, Location, Upstream and Downstream Requirements, Supply Chain Management.
11. Land Reforms in India.
12. Effects of Liberalization on the Economy, Changes in Industrial Policy and their Effects on Industrial Growth.
13. Infrastructure: Energy, Ports, Roads, Airports, Railways, etc.
14. Investment Models.

To make this vast syllabus manageable and logical, we have arranged these topics into a structured, 8-unit journey. This sequence is designed to help you connect the dots and build a truly analytical perspective. Our approach is to:

- First, build your foundation with the **macroeconomic "big picture"**—what growth means, where the money comes from, and how the government manages it (Units 1-3).
- From there, dive deep into the **core "engines" of the economy**—Industry and Agriculture (Units 4-6).
- Finally, look at the **critical "enablers"** like Infrastructure and, most importantly, the **"real-world impact"** of all these policies on poverty, jobs, and inclusive growth (Units 7-8).

Thematic Analysis of Mains Questions and Strategic Insights

1. GS-3 Economy: Topic-Wise Marks Distribution (2013-2024)

S. N.	Theme	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Avg. weightage of the topic
1	Indian Economy: Growth, Development & Planning	0	12.5	0	0	10	30	10	10	25	15	0	0	10.09 %
2	Resource Mobilisation	0	12.5	0	12.5	10	0	0	15	0	0	0	0	4.48 %
3	Government Budgeting	30	0	10	12.5	0	10	10	15	10	0	0	10	9.64 %

Student Notes:

4	Liberalization & Industrial Policy	10	12.5	10	0	15	0	0	0	0	0	20	15	7.40 %
5	Land Reforms	10	12.5	12.5	12.5	10	0	0	0	10	0	10	10	7.85 %
6	Agriculture & Allied Sectors	30	25	37.5	25	40	25	40	25	15	50	40	40	36.10 %
7	Infrastructure & Investment Models	20	25	10	0	10	10	0	0	15	10	15	15	12.56 %
8	Inclusive Growth, Poverty & Unemployment	10	12.5	10	25	20	0	15	10	0	20	30	10	14.57 %
	Total Marks Each Year	**110**	**112.5**	**80**	**87.5**	**115**	**75**	**75**	**75**	**75**	**95**	**115**	**100**	**100%**

2. GS-3 Economy: PYQ Data Analytics Report

1: Year-wise Total Marks Trend

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Marks	110	112.5	80	87.5	115	75	75	75	75	95	115	100

2: Theme-wise Average Weightage Distribution

Rank	Theme	Average Weightage
1	Agriculture & Allied Sectors	36.10%
2	Inclusive Growth, Poverty & Unemployment	14.57%
3	Infrastructure & Investment Models	12.56%
4	Indian Economy: Growth, Development & Planning	10.09%
5	Government Budgeting	9.64%
6	Land Reforms	7.85%
7	Liberalization & Industrial Policy	7.40%
8	Resource Mobilisation	4.48%

3: Recent Trend Analysis (2022-2024)

Theme	2022	2023	2024	3-Year Avg.	Status
Agriculture & Allied Sectors	50	40	40	43.3	🔥 Very High
Inclusive Growth, Poverty & Unemployment	20	30	10	20.0	🔴 High
Infrastructure & Investment Models	10	15	15	13.3	🔴 High
Liberalization & Industrial Policy	0	20	15	11.7	🟠 Resurging
Land Reforms	0	10	10	6.7	🟡 Moderate

Indian Economy: Growth, Development & Planning	15	0	0	5.0	🟢 Low
Government Budgeting	0	0	10	3.3	⚠️ Abrupt
Resource Mobilisation	0	0	0	0.0	❄️ Cold

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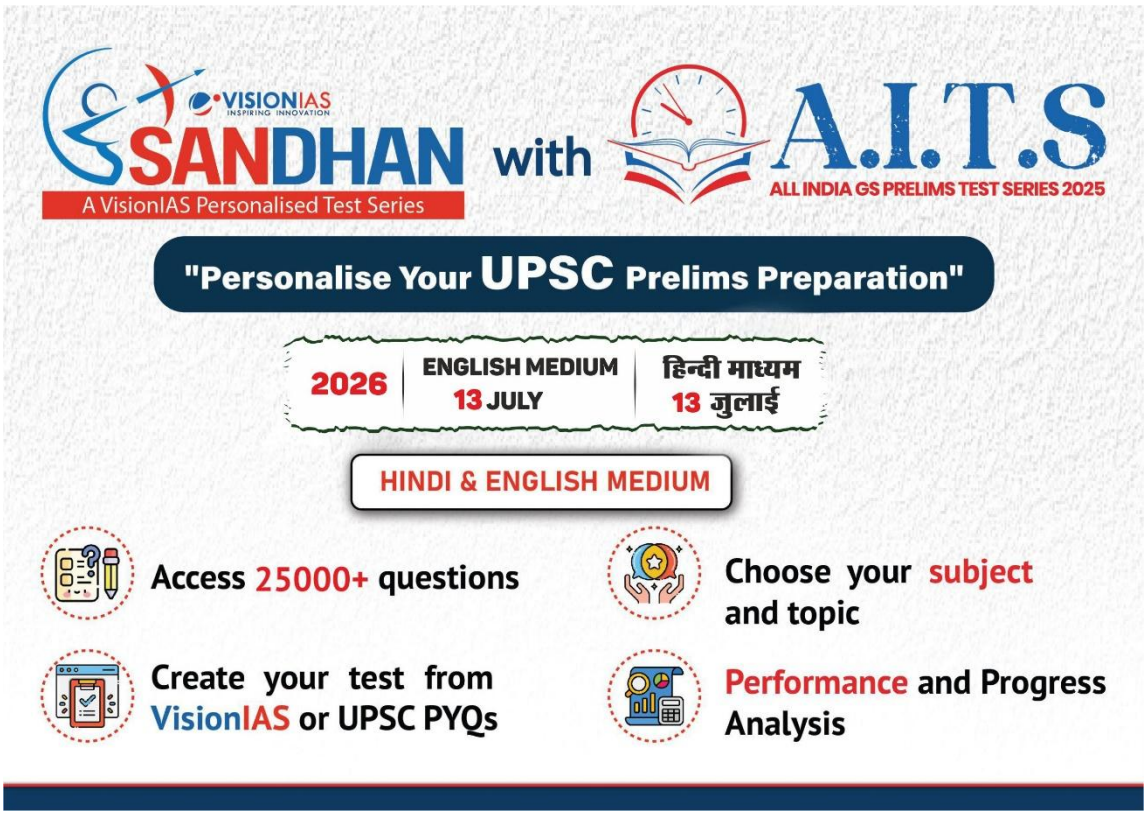


Student Notes:

1. INDIAN ECONOMY: PLANNING AND GROWTH & DEVELOPMENT

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis

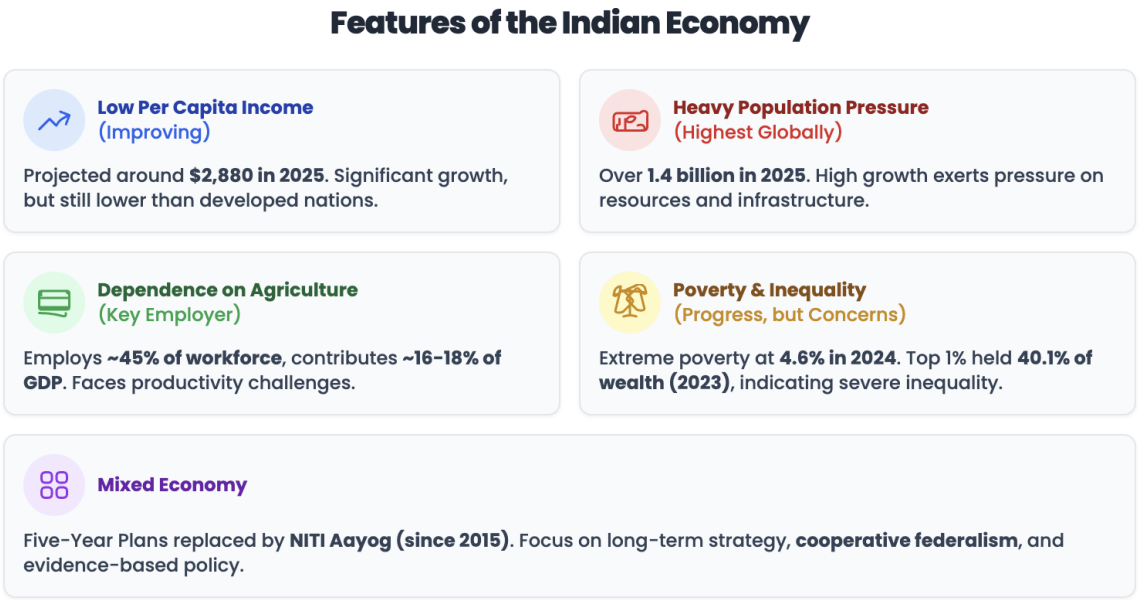
1. "Economic growth in the recent past has been led by an increase in labour productivity". Explain this statement. Suggest the growth pattern that will lead to the creation of more jobs without compromising labour productivity. (2022, 15 Marks)
2. Explain the difference between computing methodology of India's Gross Domestic Product (GDP) before the year 2015 and after the year 2015. (2021, 10 Marks)
3. Do you agree that the Indian economy has recently experienced V-shaped recovery? Give reasons in support of your answer. (2021, 15 Marks)
4. Define potential GDP and its determinants. What are the factors that have been inhibiting India from realizing its potential GDP? (2020, 10 Marks)
5. Do you agree with the view that steady GDP growth and low inflation have left the Indian economy in good shape? Give reasons in support of your arguments. (2019, 10 Marks)
6. How are the principles followed by the NITI Aayog different from those followed by the erstwhile Planning Commission in India? (2018, 15 marks)
7. How would the recent phenomena of protectionism and currency manipulations in world trade affect macroeconomic stability of India? (2018, 15 marks)
8. Normally countries shift from agriculture to industry and then later to services, but India shifted directly from agriculture to
	This foundational chapter tests your **'big picture' diagnostic skills** on the Indian economy. The examiner's focus is on the **quality** and **nature** of India's growth, moving beyond just its headline rate. Questions probe the unique drivers of our economy and the challenges in measuring and sustaining its performance.
	
	You are often required to analyze India's **unconventional growth path**. A deep understanding of the historical context and consequences is essential to tackle questions about India's direct leap from an agrarian to a service-based economy.
	
	Q. Normally countries shift from agriculture to industry and then later to services, but India shifted directly from agriculture to services. What are the reasons for the huge growth of services vis-à-vis industry in the country? Can India become a developed country without a strong industrial base? (2014, 12.5 marks)
	
	Beyond the sectoral shifts, the examiner consistently focuses on two other key analytical areas:
	
	• **Measuring Performance and Potential:** There is a strong emphasis on your ability to diagnose the gap between the economy's actual performance and its potential. This requires a clear understanding of core concepts and the **inhibiting factors** that hold back growth.
	  ○ **Q.** Define **potential GDP** and its determinants. What are the factors that have been inhibiting India from realizing its potential GDP? (2020, 10 Marks)
	• **Institutional Evolution:** You must understand the evolution of India's economic governance. Questions on this topic test your grasp of the philosophical shift from a centralized planning model to a more federal, advisory framework.
	  ○ **Q.** How are the principles followed by the **NITI Aayog** different from those followed by the erstwhile **Planning Commission** in India? (2018, 15 marks)
	
	How to Answer Questions in this Theme:

services. What are the reasons for the huge growth of services vis-à-vis industry in the country? Can India become a developed country without a strong industrial base? (2014, 12.5 marks)	Your approach here must be deeply **analytical**, not merely descriptive. • For diagnostic questions, first define the concept (like Potential GDP), then analyze the causal factors with **evidence and data**, ideally from sources like the **Economic Survey**. • For **comparative questions** (like NITI vs. Planning), go beyond a simple list of differences. Your goal is to explain the *'why'*—the reasons and implications behind the institutional change. • Always aim for a **balanced conclusion** that acknowledges the complexities of the issue, avoiding extreme or one-sided arguments.

Student Notes:

Introduction

Since Independence, India's economic framework has undergone a remarkable transformation - **evolving from centralized planning to a dynamic market-driven model** while striving to balance **growth with equity**. This journey, marked by structural reforms and institutional innovations, now culminates in the ambitious **'Viksit Bharat @ 2047'** vision that seeks to position India as a developed economy. In this chapter, we shall examine few important foundational dimensions related to economic growth and development.



1.1. Economic Growth & Development

While often used interchangeably, economic growth and economic development are distinct concepts crucial for understanding a nation's progress.

1.1.1. Comparison: Economic Growth vs Economic Development

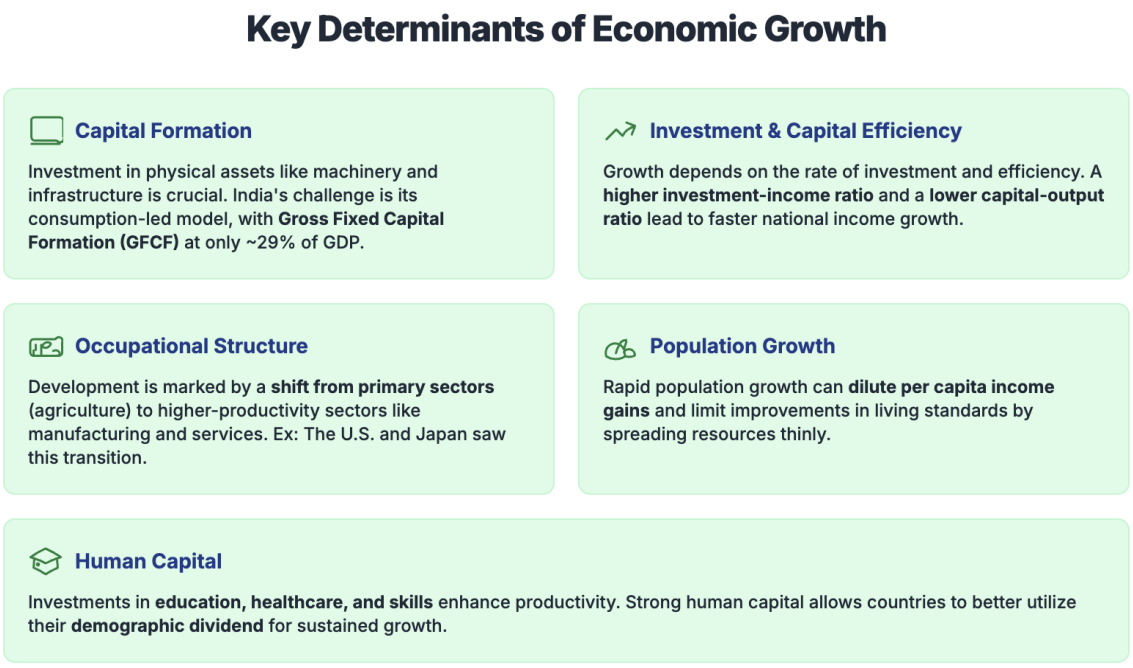
Particulars	Economic Growth	Economic Development
Definition	Increase in a country's **real output** of goods and services.	More comprehensive, involving changes in **socio-economic structure**, **occupational shifts**, and improvements in **skills** and **productivity**.

Student Notes:

Changes in Economic Structure	Gradual rise in one of the GDP components (**consumption**, **government spending**, **investment**, **net exports**). Primarily **quantitative** changes.	**Qualitative** and **quantitative** transformations, with a shift from **agriculture** to **industries**, **services**, and improvements in **human capital**, **reduced inequality**, and **improved quality of life**.
Measurement	Measured by **quantitative factors** like increase in **real GDP** or **per capita income**.	Measured by **qualitative indicators** like **inequality index**, **gender index**, **poverty index**, **infant mortality**, and **literacy rate**.
People's Capabilities	Growth in **per capita income** does not account for **people's capabilities** or impact on development.	Focuses on **people's capabilities**, which per capita income alone cannot explain.
Relevance	Reflects growth in **national** or **per capita income**.	Reflects progress in the **quality of life** in a country.

1.1.2. Determinants of Growth

Sustained economic growth is driven by several key factors:



1.1.3. Dimensions of Development

Development is a **multidimensional process** that goes beyond just **economic growth**. It focuses on creating an environment where individuals can lead **long**, **healthy**, and **creative lives**. The key dimensions of development include:

- **Social Dimension**: Ensures access to **quality education**, **healthcare**, and **equal opportunities** for all, irrespective of **gender**, **caste**, or **religion**. This dimension fosters **social equity** and inclusion.

Student Notes:

- **Economic Dimension**: Focuses on not only growth but also **financial inclusion**, **agricultural development**, and the **creation of quality employment**. This aims to improve **living standards** and ensure economic benefits are broadly shared.
- **Political Dimension**: Involves ensuring **transparent governance**, the **rule of law**, and **participatory decision-making**. These are essential for **sustainable development** and the active involvement of citizens in shaping policies.
- **Environmental Dimension**: Emphasizes **sustainable development**—meeting the needs of the present without compromising the ability of future generations to meet their own needs. It focuses on the **protection of natural resources** and balancing **growth** with **environmental conservation**.

Inclusive growth ensures that the benefits of development reach all sections of society, reducing **poverty** and **inequality**. It integrates social, economic, and environmental factors, fostering a more **equitable** and **sustainable** future for everyone.

1.2. Measuring Growth and Development

GDP, GNP, Potential GDP are traditional indicators of growth and development. National Income Accounting is a framework for calculating Gross Domestic Product (GDP), which is a measure of aggregate economic output.

- **Gross Domestic Product (GDP):** The total monetary value of all final goods and services produced within a country's borders in a specific time period.
- **Gross National Product (GNP):** GDP plus net factor income from abroad.

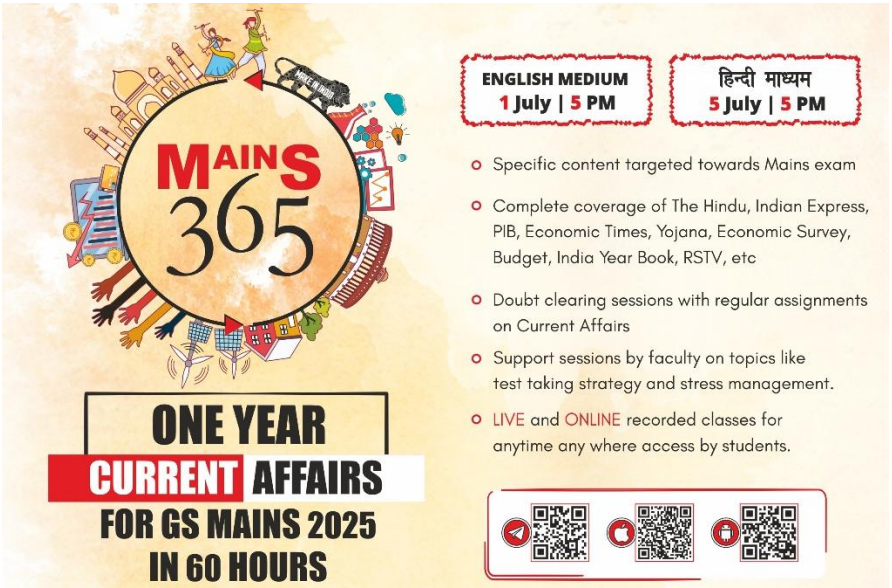
Potential Growth vs Actual Growth

Potential growth is the **maximum sustainable rate** an economy can grow when all its resources are used to their **fullest and most efficient capacity**. This theoretical peak is achieved when key growth factors like capital, labor, and technology are all **performing optimally**.

It differs from **actual growth**, which is the economy's **current performance**. The difference creates an **output gap**:

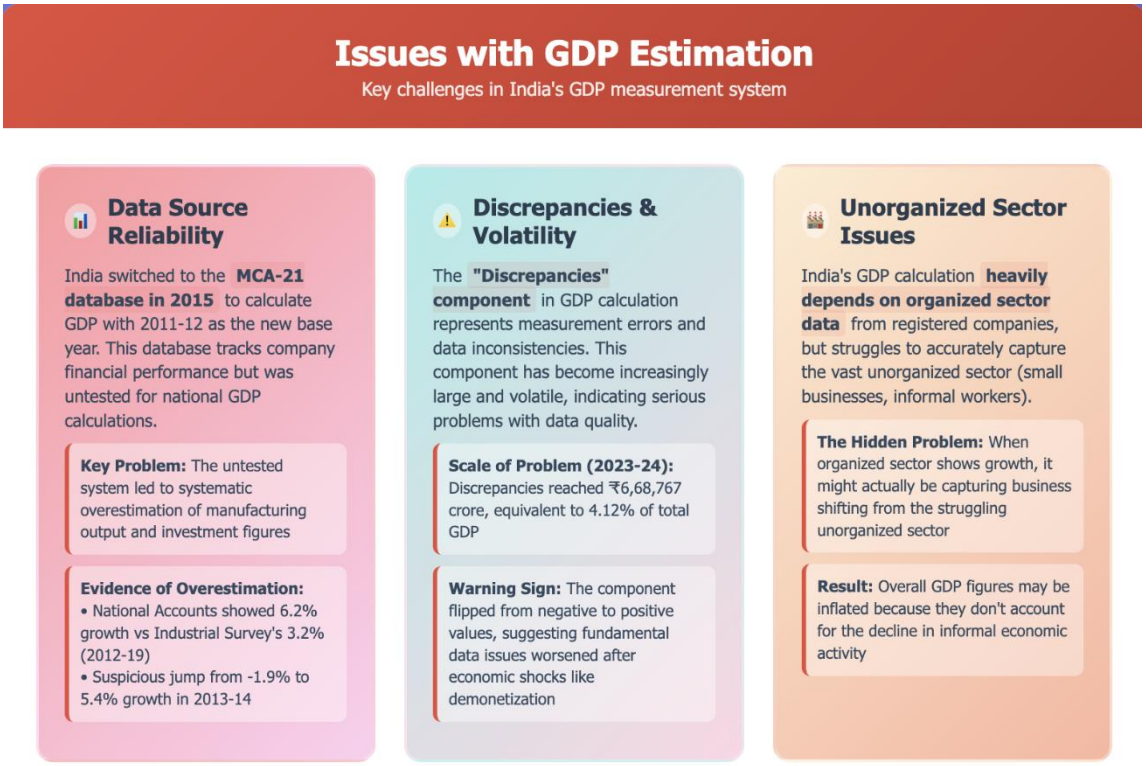
- A **negative gap** means resources are idle.
- A **positive gap** means the economy is **overheating**, risking **inflation**.

Factors like inadequate infrastructure and low human capital prevent India from realizing its potential GDP.



Student Notes:

1.2.1. Issues with GDP Estimation



1.2.2. Issues with GDP as an Indicator for Growth

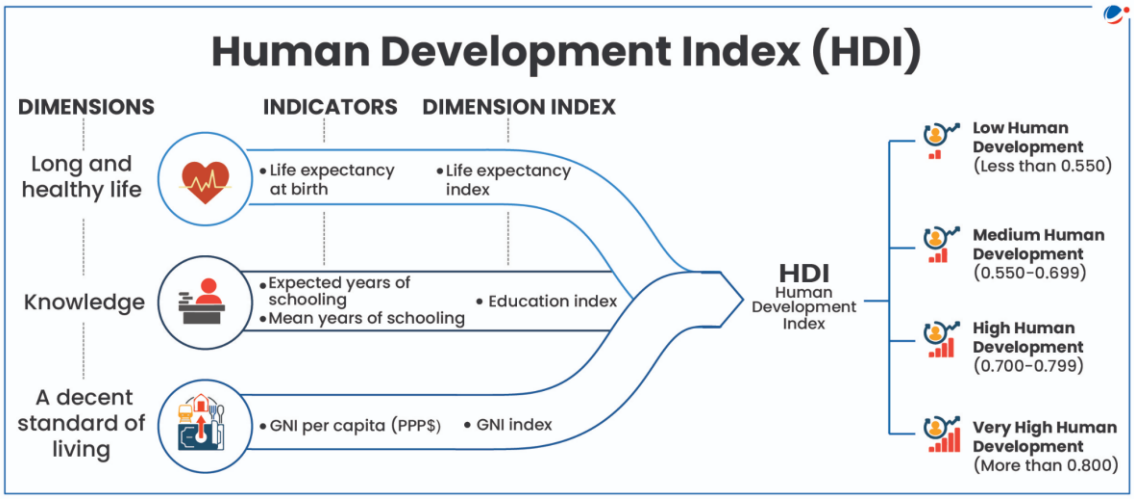
Student Notes:

India is considering shifting to a **chain-base index for GDP estimates,** where comparisons are made with the previous period rather than a fixed base, aligning with international practice. This could provide more current reflections of economic changes but may increase data collection burdens.

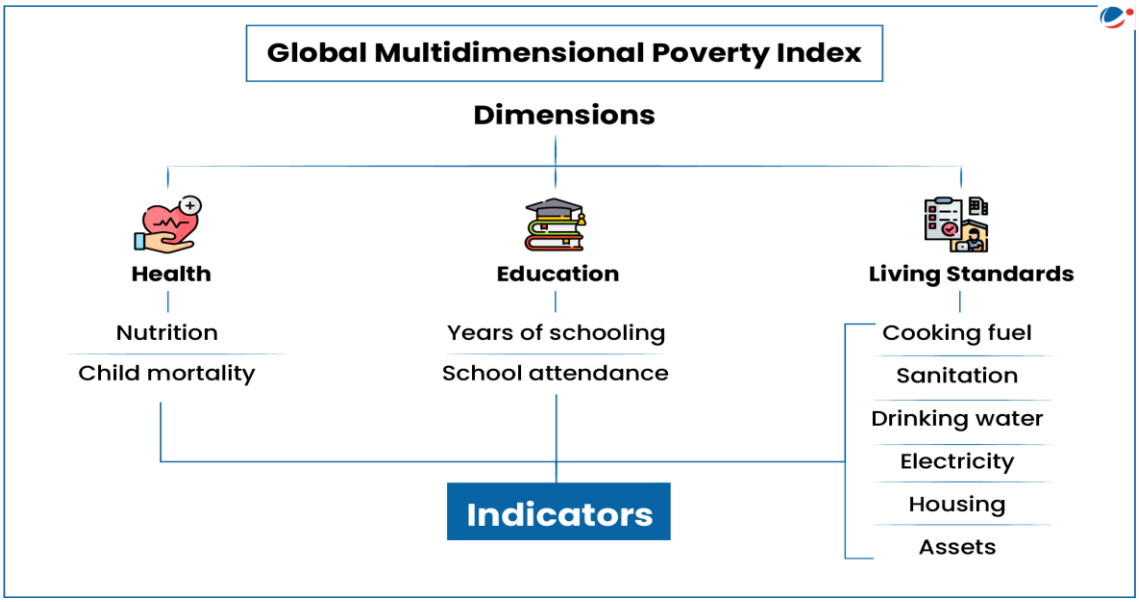
1.2.3. Modern Indicators: HDI, GII, and the Multidimensional Poverty Index (MPI)

Recognizing the limitations of GDP as a sole measure of well-being, several alternative indicators have been developed. These indicators provide a **more holistic view** of development.

- **Human Development Index (HDI):** A composite index measuring average achievement in three key dimensions: a **long and healthy life, knowledge, and a decent standard of living**. In 2025, India's Human Development Index (HDI) rank is **130** out of 193 countries.



- **Gender Inequality Index (GII):** Measures gender inequalities in three important aspects of human development—reproductive health, empowerment, and economic status. In 2025, India ranks **102nd** out of 193 countries on GII.
- **Multidimensional Poverty Index (MPI):** The global MPI identifies acute poverty across 10 indicators in health, education, and standard of living. It captures both the incidence and intensity of poverty. India's MPI rank for 2025 is **66th** out of 109 countries.
  - India has made significant strides, lifting 415 million people out of poverty between 2005-06 and 2019-21.
  - India's National MPI (NMPI), developed by NITI Aayog, includes two additional indicators: **Maternal Health** and **Bank Account**, to better reflect the national context.



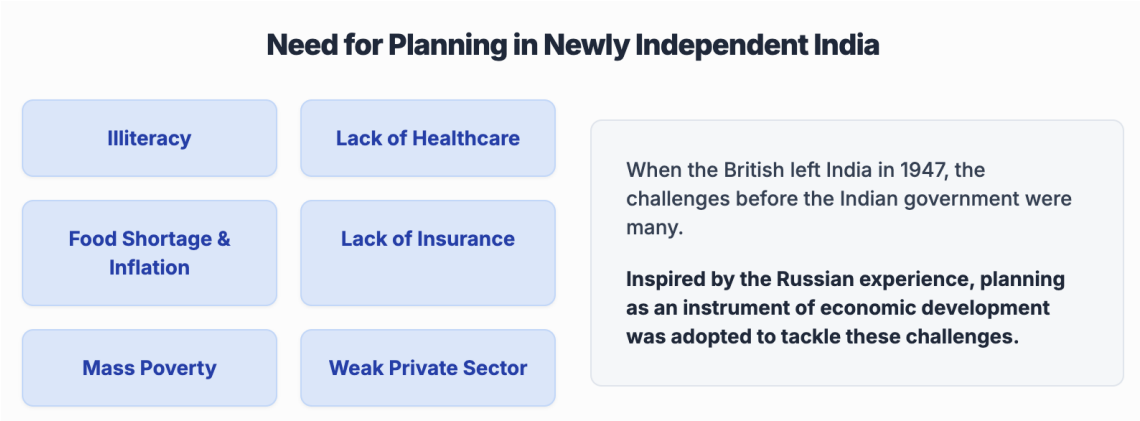
Student Notes:

1.3. Economic Planning in India

1.3.1. Introduction to Economic Planning

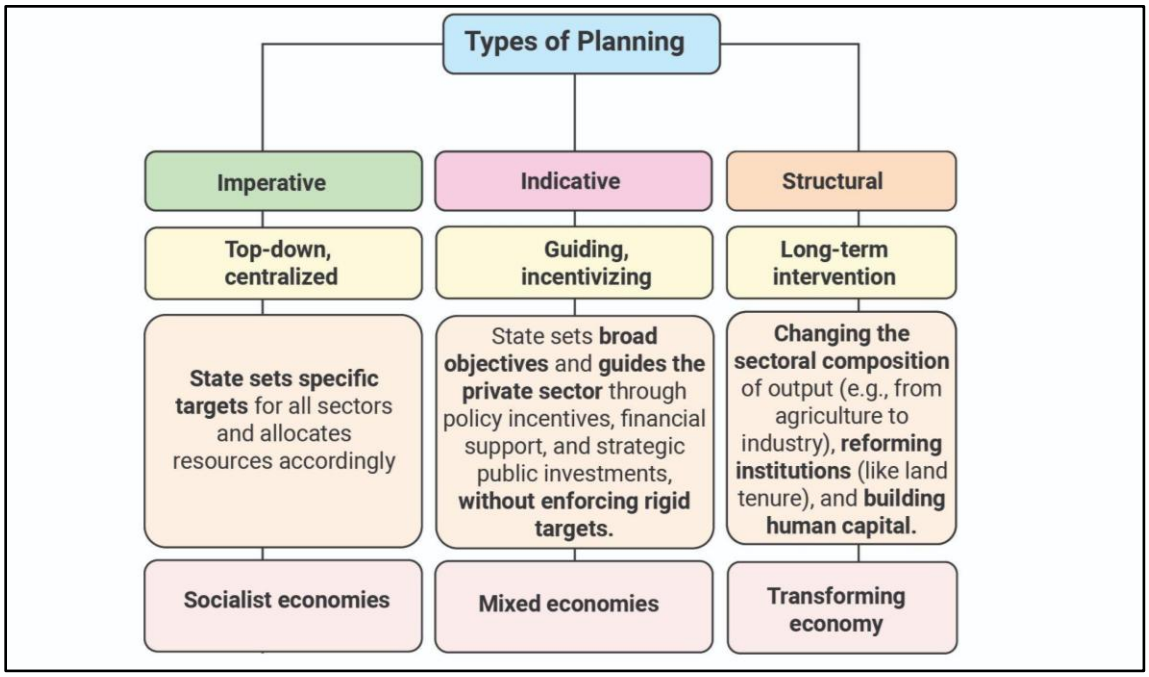
Economic planning is the process by which **a central authority formulates a set of targets** to be achieved within a specific period, keeping the country's **needs and resources** in view. The market mechanism prioritizes high-profit activities, whereas planning **allows for the systematic utilization of available resources** to rapidly build the nation's productive capacity.

The need for planning in newly independent India was underscored by several factors:



1.3.2. Types of Planning

The nature of planning can be broadly categorized based on the **degree of state control**.



India's **Five-Year Plans** incorporated elements of both **indicative and structural** planning.

1.3.3. The Five-Year Plan (FYP) Era

From 1951 to 2017, India's development trajectory was guided by the Five-Year Plans (FYPs), formulated by the Planning Commission. This era was defined by the **Nehru-Mahalanobis strategy**, which **prioritized heavy industrialization and a dominant public sector** to build a self-reliant economy.

Student Notes:

Key Achievements

Industrial Diversification

Successfully created a broad-based industrial and infrastructure foundation. Key sectors like power and capital goods were developed under **PSUs**.

Rise in Savings & Investment

Both gross domestic savings and the rate of investment rose substantially compared to the colonial period.

Human Capital Formation

Significant progress was made in creating institutions of higher learning, especially in **scientific fields**.

Food Security

The **Green Revolution** and price support systems eventually made India **self-sufficient in food grains**.

Key Shortcomings

Concerns Regarding Federalism

The Planning Commission often overstepped its authority, leading to resentment among states. **"Indicative planning"** became **"prescriptive planning"**.

Inefficiency and "License Raj"

The IDRA of 1951 led to a system of permits that **stifled private initiative**, fostered inefficiency, and promoted corruption.

Neglect of Agriculture & Exports

Heavy industrial focus came at the cost of agriculture. **Import substitution** led to export pessimism and a growing trade deficit.

Ineffective Land Reforms

While Zamindari abolition was effective, other reforms were hampered by loopholes and a **lack of political will**.

Fiscal Imbalances

High public spending and inefficient PSUs in the 1980s led to fiscal imbalances, triggering the **1991 economic crisis**.

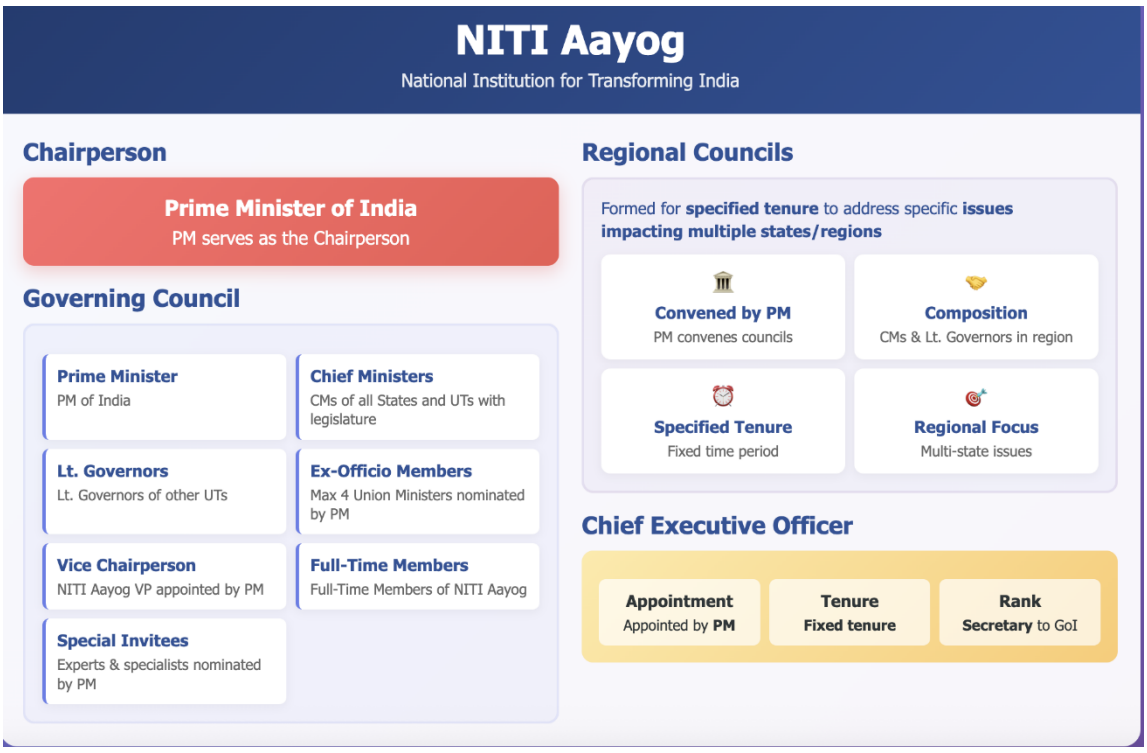
1.3.4. 10 Years of NITI Aayog

The move to establish NITI Aayog was driven by the belief that the **centralized, top-down planning model** of the Commission was obsolete in a **liberalized and globalized** Indian economy.

- The Planning Commission was often seen as a **relic of a command-and-control economy**, functioning as a **"super-cabinet"** that encroached upon the authority of the Finance Commission and other ministries.
- Its **one-size-fits-all approach** was considered ill-suited for a diverse nation with states at varying levels of development.

NITI Aayog: Structure and Principles

NITI Aayog was envisioned as a **policy think tank or an advisory body** to the government, fundamentally different from its predecessor.



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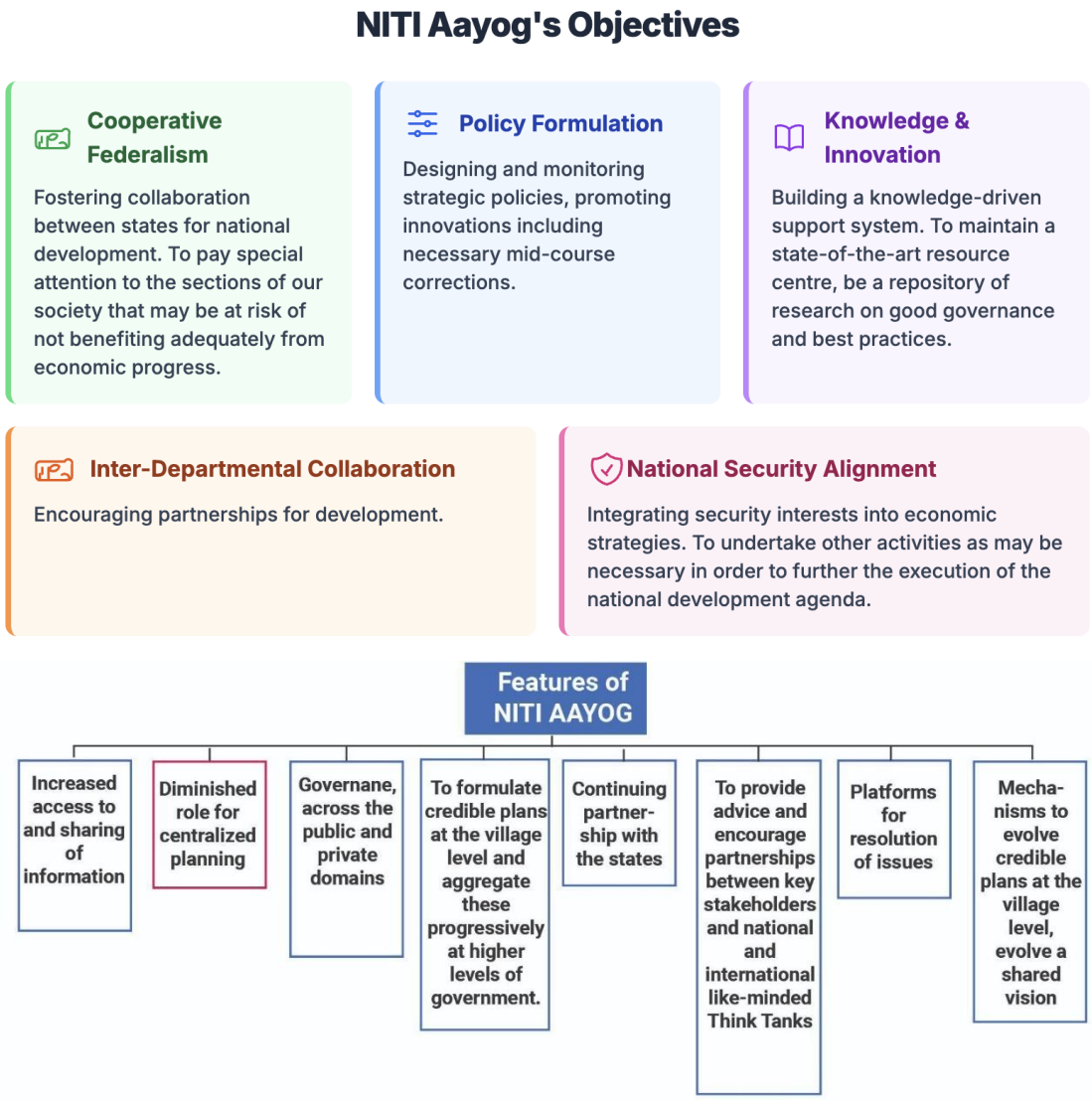


Comparison of Planning Commission and NITI Aayog:

Feature	Planning Commission	NITI Aayog
Role	A centralized planning authority.	A policy think tank and advisory body.
Approach	Top-down, one-size-fits-all approach to state plans.	Bottom-up approach, fostering cooperative federalism.
Financial Powers	Had the power to allocate funds to states for various programs and five-year plans.	Has no powers to allocate funds; functions as a purely advisory body.
State Representation	Limited and indirect participation by states.	Governing Council includes all Chief Ministers and Lt. Governors, ensuring direct state involvement.
Policy Focus	Formulated Five-Year Plans with rigid targets.	Focuses on long-term policy and program frameworks (e.g., 15-year vision, 7-year strategy, 3-year action agenda).

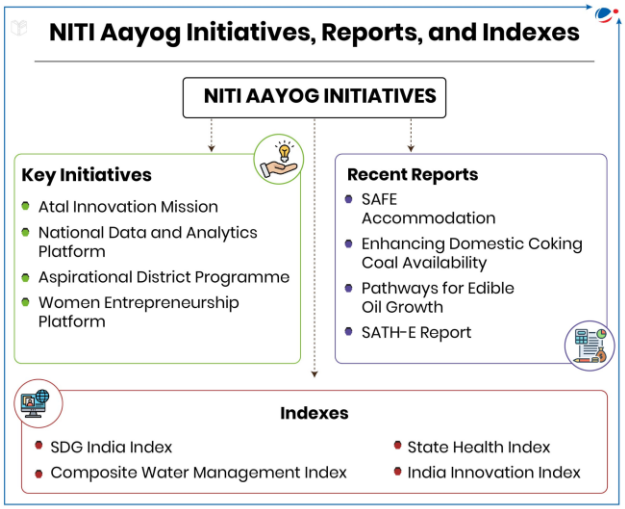
NITI Aayog – Evaluation of its working

A decade after its formation, the performance of NITI Aayog has been described as **underwhelming**, hindered by both structural and contextual challenges. While NITI Aayog has initiated several programmes and released various vision documents, its **tangible impact on policy has been limited**.

Student Notes:

Important Achievements of NITI Aayog

- **Enhanced Cooperative Federalism**: NITI Aayog served as a linking bridge between **central** and **state governments**, fostering collaboration to align **regional priorities** with **national goals**.
  - **E.g.**, NITI Aayog's '**Team India Hub**' involves all states working towards a national **development agenda**.
  - Another example is the **Aspirational Districts Programme (ADP)**, aiming to transform **112 under-developed districts** across the country with close collaboration between **line Ministries** and **development partners**.
- **Strengthened Competitive Federalism**: Encouraged healthy **competition** among states through **data-driven** and **transparent indexes** and **ranking systems**.
  - **E.g.**, **Fiscal Health Index**, **Aspirational District Programme**, **Composite Water Management Index**, **State Energy and Climate Index**, etc.
- **Governance and Policy Advice**: As a **think tank**, NITI Aayog advised on **long-term strategic policies** and shifted focus from **financial allocation** (priority of the erstwhile **Planning Commission**) to **policy advisory**, promoting a **decentralized governance approach**.
  - **E.g.**, it assisted states in setting up **State Institutions of Transformation (SITs)** for better **governance** and **policy implementation**.
- **Inculcated Innovation, Entrepreneurship, and Digital Transformation**: Through initiatives like **Atal Innovation Mission (Atal Tinkering Labs, Atal Incubation Centre)**, **Knowledge and Innovation Hub**, **National Data and Analytics Platform (NDAP)**, and the **roadmap for digital payments**, NITI Aayog promoted **innovation** and **digital transformation**.
- **Regional and Inter-Sectoral Social Interventions**:
  - **E.g.**, **NITI Forum for North East**, **SATH-E initiative**, **Poshan Abhiyan**, **State Health Index**, **School Education Quality Index**, etc., focused on **regional development** and **social interventions** across various sectors.
- **Sustainable Development Goals (SDGs) Monitoring**: Tasked with monitoring and adopting **SDGs** in India, NITI Aayog played a crucial role in synchronizing the nation's **development programs** in line with the **SDG targets**. **E.g.**, **SDG India Index**.



The Role of Indices in Fostering Competitive Federalism

One of NITI Aayog's notable contributions has been the use of indices to foster **competitive federalism**. By developing and releasing rankings like **the SDG India Index, the Health Index, and the School Education Quality Index,** it encourages states to improve their performance in key social and economic sectors. These indices create a **competitive environment** where states are motivated to adopt best practices and improve their governance frameworks to achieve better rankings.

Student Notes:

Challenges Faced by NITI Aayog

Structural Challenges	Institutional Challenges	Functional Challenges

• **Lack of Budgetary Powers:** Unlike the Planning Commission, NITI Aayog has **no financial authority to approve state plans or influence resource allocation directly**. This significantly **weakens its ability to engage in meaningful dialogue** with states and enforce its policy recommendations.
• **Advisory Role:** Its recommendations are **not binding** on ministries or state governments, which often limits their implementation and overall effectiveness. E.g., Its Vision documents like **"India@75"** and the **"Three-Year Action Agenda"** failed to have a significant policy impact, partly because they were prepared with limited public consultation, excluding crucial stakeholder voices.
• **Centralised Structure**: Despite its mandate for cooperative federalism, NITI Aayog's structure remains **centralised, and state cooperation varies**, which hampers effective policy implementation.
• **Politicisation Risks:** There have been concerns about politicisation, with the body sometimes seen as **a "glorified recommendatory body" lacking teeth** to enforce change.
	• **Perceived Constraints on Autonomy:** NITI Aayog's integration within the government can lead to **perceptions of limited independence** in providing unbiased policy advice.
	  ○ **Example:** Concerns over its recommendations aligning too closely with prevailing political agendas.
	• **Inter-Ministerial Coordination:** Ensuring that NITI Aayog's strategic directions are effectively integrated and aligned with the diverse priorities of various government ministries.
	  ○ **Example:** Difficulty in aligning specific ministry budgets with NITI Aayog's long-term vision documents.
	• **Stakeholder Engagement:** The challenge of building consensus and ensuring broad-based support for initiatives across state governments, industry, and civil society.
	  ○ **Example:** Resistance from some state governments on proposed agricultural or land reforms.
		• **Prioritization and Resource Allocation (No Financial Mandate):** NITI Aayog must prioritize policy areas and influence resource allocation without direct budgetary control.
		  ○ **Example:** Lack of direct authority over GST slab revisions, which limits its influence on fiscal policy.
		• **Robust Monitoring and Evaluation:** The need to strengthen mechanisms for accurately tracking progress and assessing the real-world impact of its initiatives.
		  ○ **Example:** Difficulty in definitively attributing improvements in socio-economic indicators solely to NITI Aayog's interventions.
		• **Communicating Impact:** Effectively articulating its achievements and value proposition to the public to foster trust and support.
		  ○ **Example:** Public confusion about NITI Aayog's specific role compared to traditional ministries with direct funding responsibilities.

Student Notes:

Why the Indian Economy Still Needs Planning

India has a complex history with economic planning, marked by both successes and failures. The shift from a highly centralized **"directed planning" to "indicative planning"** and, more recently, to **"strategy but limited planning"** has brought to light several challenges and underscored the continued need for a robust planning framework.

- **Addressing Persistent Inequalities:** India has seen a significant rise in both **individual and inter-state inequality** despite past planning efforts. A new planning system is needed to address these disparities and challenges related to poverty.
- **Climate Change and Sustainable Development Goals (SDGs):** Climate change poses a major challenge requiring planned government interventions. The global trend shows a resurgence in national development plans, with over 130 countries having plans to achieve SDGs.
- **Complex Intersectoral Linkages:** Achieving development outcomes, such as better health, **requires a coordinated approach across multiple sectors** like clean water, sanitation, education, and transport. A planning body can help understand these synergies and address key constraints.
- **Need for Medium-Term Planning:** While annual budget allocations exist, the **absence of a well-defined medium-term plan** raises questions about India's ability to function effectively. This is particularly crucial as long-term thinking on vital areas like water, energy, and land use has been inconsistent.

In a market-oriented economy, NITI Aayog must possess the **analytical capacity to predict** how policies affect the private sector and the broader economy. To tackle complex challenges from inequality to climate change, a **revamped, data-driven, and forward-looking planning approach** is essential for India's 2047 goals, a capacity still largely missing.

Way Forward

To evolve into a more effective institution (NITI Aayog 2.0), several reforms are necessary:

Grant Statutory Status

Give NITI Aayog **statutory backing** and a **Cabinet Minister rank** for its leadership to ensure its advice is integrated into government decision-making.

Limited Financial Influence

Empower with **limited budgetary powers** to incentivize states. Grant **"sign-off" power** on expenditure to ensure its policy advice is taken seriously.

Strengthen Research Capacity

Bolster **in-house research** to reduce dependence on external consultants. Staff with top domain experts and improve access to high-quality data.

Long-Term Frameworks

Develop a **long-term vision (to 2047)**, set interim SDG targets, and create five-year plans. Lead an **Integrated National Financing Framework**.

Outcome-Based Evaluation

Establish robust, **independent evaluation systems** to focus on policy outcomes. Give NITI Aayog oversight to ensure its advice is implemented effectively.

Enhance Cooperative Federalism

Improve coordination with states and actively address **regional imbalances**. Streamline centrally sponsored schemes and offer **100% central funding** for key initiatives.

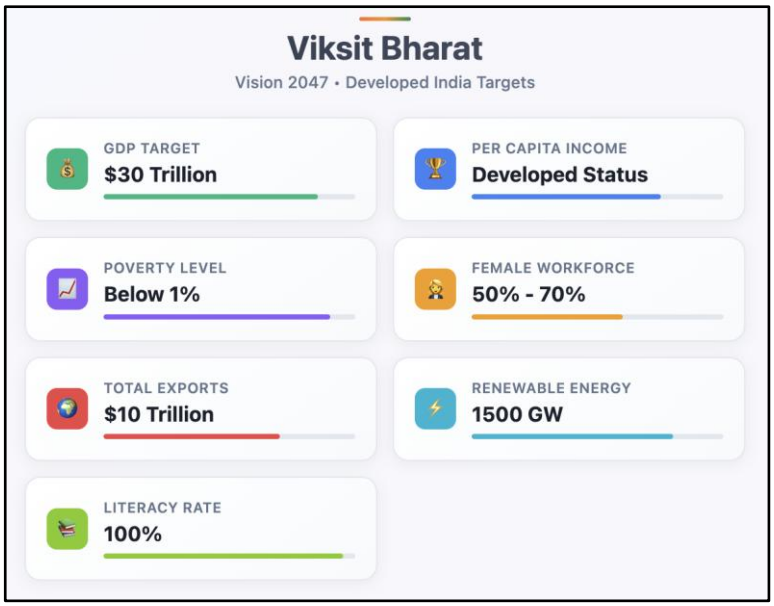
NITI Aayog has played a crucial role in shaping India's policy landscape through cooperative federalism, strategic planning, and fostering innovation. However, its effectiveness is constrained by several limitations. To enhance its impact, NITI Aayog m**ust evolve into a more empowered institution** with greater **financial autonomy**, **resource allocation and stronger**

Student Notes:

policy enforcement mechanisms, ensuring better coordination between the states and with states and the center.

1.4. India's Economic Future

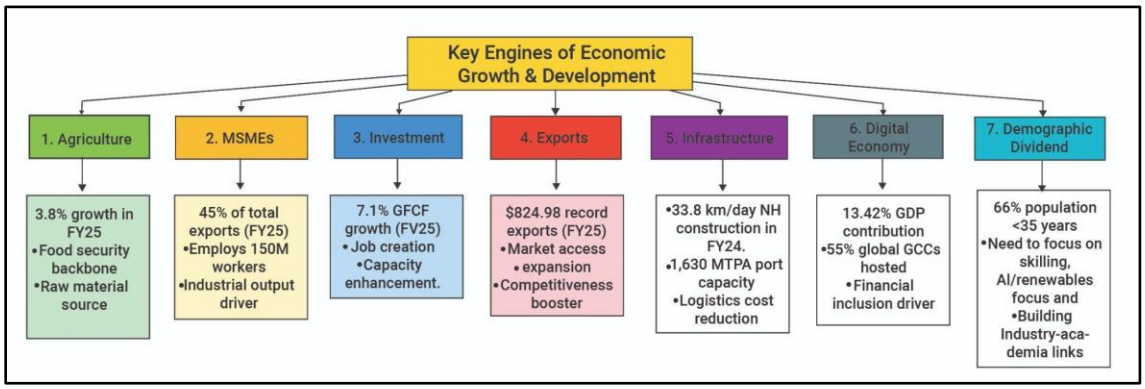
1.4.1. The 'Viksit Bharat @ 2047' Ambition



The Government of India has articulated a vision for the nation to become a **'Viksit Bharat' or developed India by 2047**. This ambitious goal envisages transforming India into a **$30-trillion economy** with a per capita income between **$20,000 and $25,000**.

The Goal: From a Lower-Middle Income to a $30-trillion Developed Economy

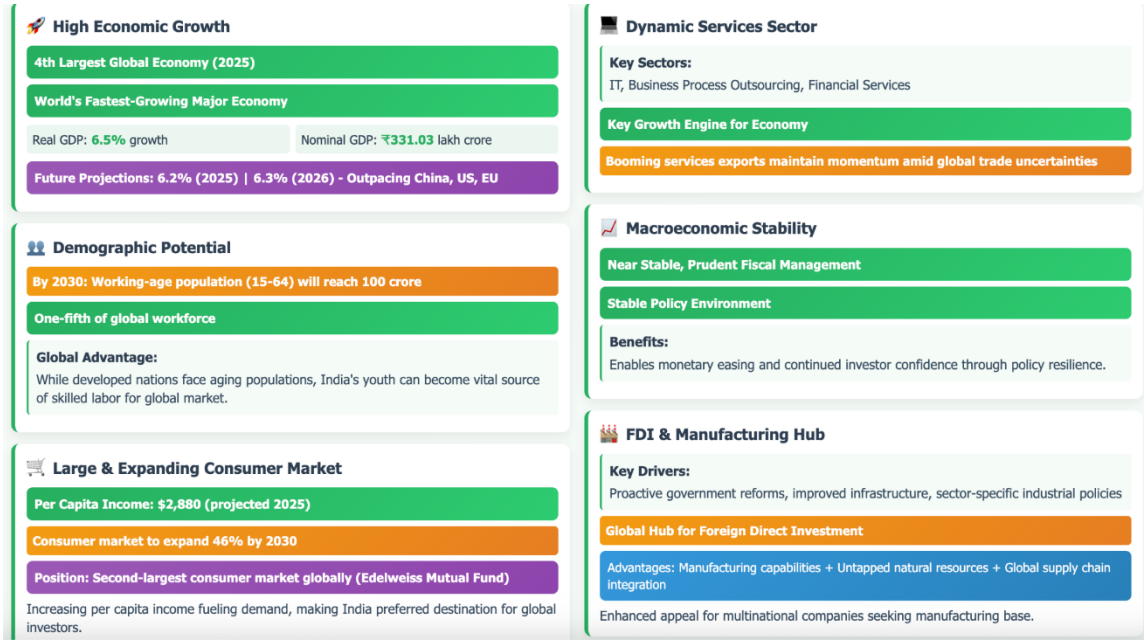
- Currently, the World Bank classifies India as a **lower-middle-income country** with a per capita income of **$2,612**.
- Achieving 'developed' status requires a **six-fold increase** in per capita GNI, demanding sustained and exceptionally high rates of economic growth over the next two decades.
- The Union Budget 2024-25 presented the foundation for this vision, focusing on what it terms the four primary engines of development: **agriculture, MSMEs, investments, and exports**.



Student Notes:

- **India's Strengths**

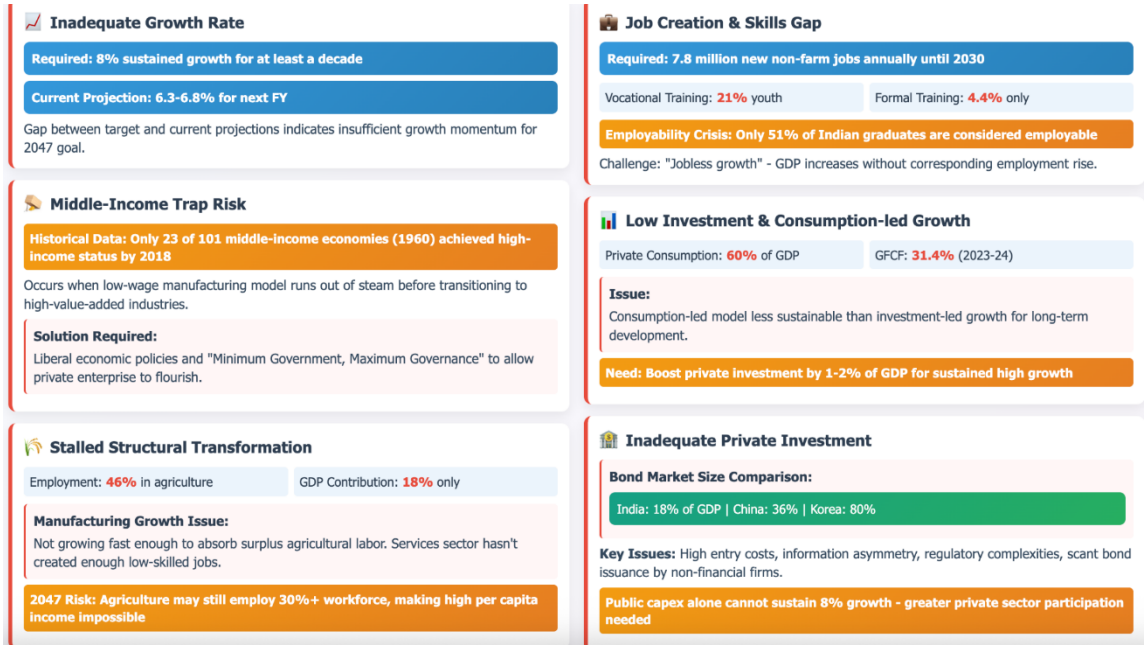
India's ambition is underpinned by its few key strengths:



These strengths collectively position India as **a resilient, opportunity-rich economy** with significant potential for sustained growth and global leadership in the coming decades.

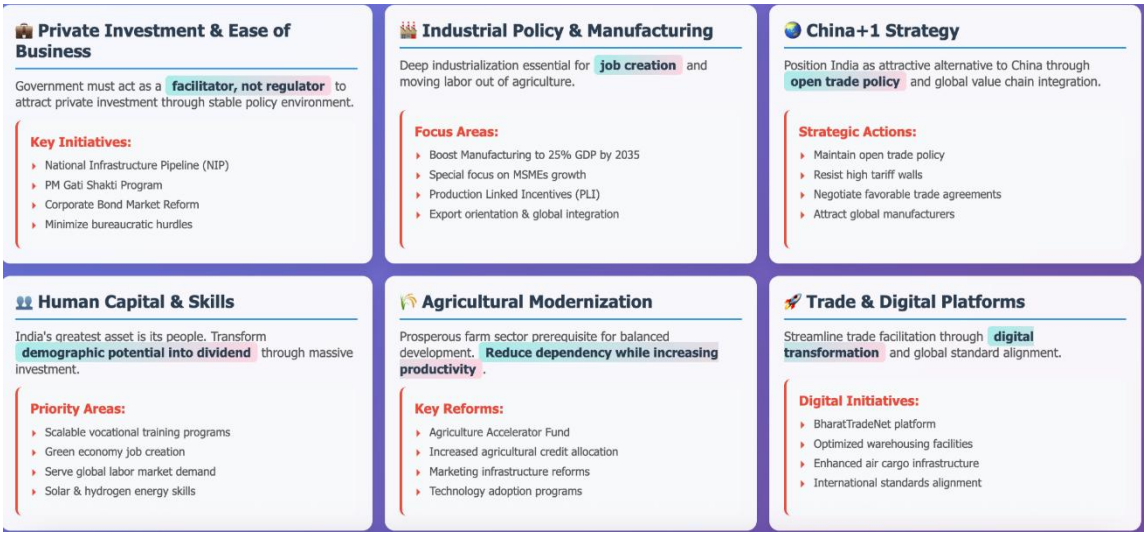
- **Critical Challenges to Achieving Developed Status**

Despite its strengths, India faces formidable challenges that could derail its 2047 ambition. Historical precedent shows that many nations have been at a similar economic juncture but failed to transition to high-income status.



- **Strategic Actions Required for the 2047 Goal**

Achieving the 'Viksit Bharat' vision requires a **multi-pronged strategy** focused on overcoming the aforementioned challenges.



As India strides toward its 2047 ambition, the transition from growth-centric policies to **holistic development**—encompassing sustainability, equity, and technological resilience—will define its success. **Strengthening institutions like NITI Aayog, boosting human capital, and fostering green industrialization** can bridge the gap between potential and performance. With strategic reforms, India can emerge not just as an economic powerhouse, but as a model of equitable and sustainable progress for the Global South.

1.4.2 The Indian Economy and the Middle-Income Trap

India, classified as a **lower middle-income country** (per capita GNI US$1,136 to US$4,465), with its per capita income at approximately **$2,400 in 2022** (around 3.1% of the US per capita income), faces the challenge of the Middle-Income Trap (MIT).

Middle Income Trap (MIT)

- MIT describes a **systemic economic slowdown** where rapidly growing economies stagnate at middle-income levels (around 11% of US GDP per capita) and fail to graduate to high-income status. Since 1970, the mean income per capita of middle-income countries has rarely surpassed one-tenth of the US', with only 34 economies successfully escaping this trap in the last 35 years.

What Makes India Vulnerable?

India's ambition to become a developed economy is significant, yet several factors make it vulnerable to the MIT:

- **Untapped Human Capital & Skill Gap:** A significant skill gap exists, with only about 51% of graduates deemed employable and a mere 2.3% of the workforce having formal skill training (Economic Survey FY24).
- **Lack of Innovation Capability:** India's R&D investment stands at a mere **0.64% of GDP,** considerably lower than China's 2.4% and the US's 3.47%.
- **Rising Income Inequality:** India's top 1% own 22.6% of the income (World Inequality Lab, 2022-23), potentially leading to social tension and impacting economic growth.
- **Stagnated Industrialization:** India leapfrogged from agriculture directly to the services sector, with manufacturing's share in output and employment remaining generally below 20%. This has resulted in **unemployment and disguised unemployment**, particularly in agriculture.
- **Contemporary Global Headwinds:** Middle-income countries are caught between advanced economies' rapid technological changes and competition from low-wage, poorer countries.

Geopolitical tensions are also constricting foreign trade and investment, while rising external debt (up 6.4% in March 2024) and the imperative for climate action add further burdens.

The Way Forward

The **World Development Report** identifies three crucial drivers for escaping the MIT: Investment, Infusion of global technologies, and Innovation. This involves two transitions:

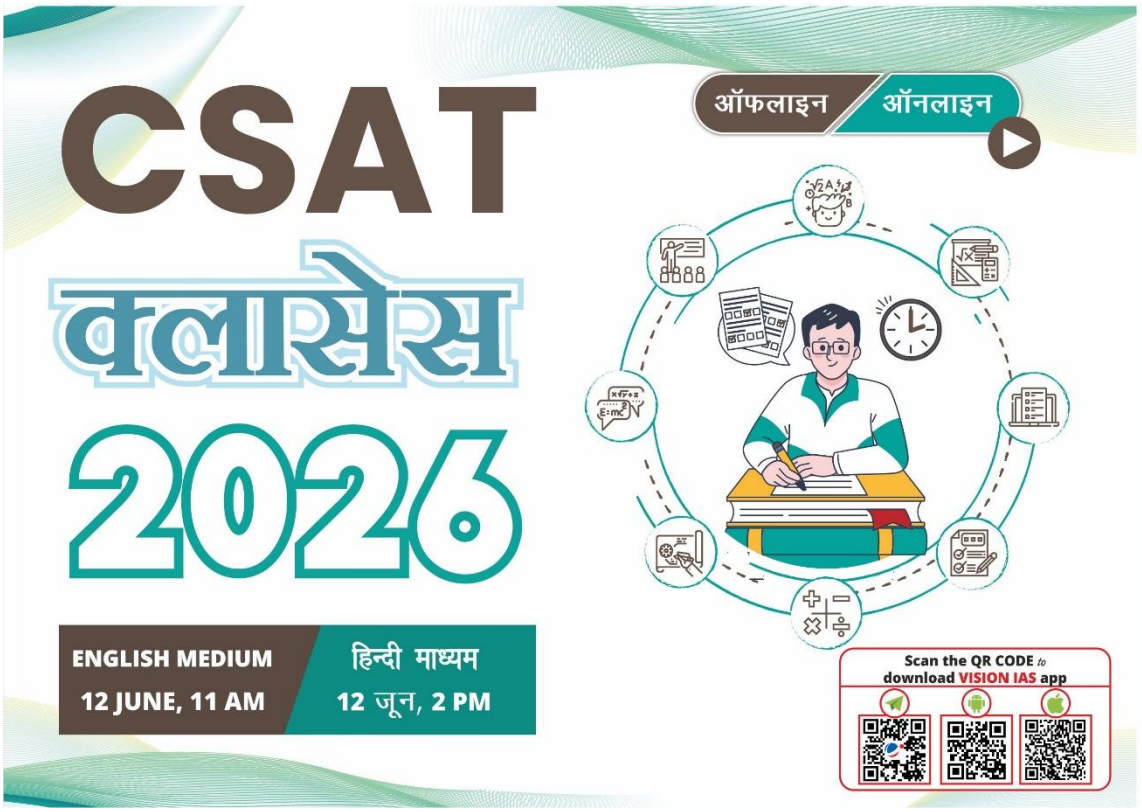
- **Investment (1i) to Investment + Infusion (2i):** Primarily for lower-middle-income countries like India, the focus should be on **improving the investment climate to attract domestic and foreign capital, complemented by deliberate measures to adopt and diffuse modern technologies** from abroad.
- **Investment + Infusion (2i) to Investment + Infusion + Innovation (3i):** As countries mature, they must transition to **becoming innovators** themselves, creating new technologies and ideas to join the high-income club. Other vital initiatives include investing in **secondary education and vocational training** to build a skilled workforce, leveraging the diaspora's expertise, and **focusing research funding on strategic STEM areas**.

Global Examples for Learning

South Korea and Chile offer valuable lessons.

- South Korea's success stemmed from an **interventionist state actively directing its conglomerates (chaebols) towards an aggressive, export-driven manufacturing model**, growing its per capita income from $1,200 in 1960 to $33,000 by 2023.
- Chile successfully intervened in **natural resource sectors** like salmon.
- Similar to South Korea, Japan exemplifies the "3i" transitions, initially licensing technologies before becoming global tech leaders.

Student Notes:



Student Notes:

2. RESOURCE MOBILISATION

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis

1. Among several factors for India's potential growth, the savings rate is the most effective one. Do you agree? What are the other factors available for growth potential? (2017, 10 marks)
2. Justify the need for FDI for the development of the Indian economy. Why there is gap between MOUs signed and actual FDIs? Suggest remedial steps to be taken for increasing actual FDIs in India. (2016, 12.5 marks)
3. Explain the meaning of investment in an economy in terms of capital formation. Discuss the factors to be considered while designing a concession agreement between a public entity and private entity. (2020, 15 Marks)
4. Foreign Direct Investment (FDI) in the defence sector is now set to be liberalized. What influence is this expected to have on Indian defence and economy in the short and long run? (2014, 12.5 marks)
	This theme is about a fundamental economic question: **Where does the money for growth come from?** While appearing less frequently on its own, its concepts are foundational and often integrated into other topics like Infrastructure and Growth. The questions test your understanding of how an economy generates resources, both **domestically (savings, investment)** and **externally (FDI)**.
	
	The examiner's focus is on the practical application and challenges of mobilizing these resources. You are expected to understand not just the 'what' but the 'why' and 'how'. For example, questions probe the link between a country's savings habits and its growth potential.
	
	Q. Among several factors for India's potential growth, the **savings rate** is the most effective one. Do you agree? What are the other factors available for growth potential? (2017, 10 marks)
	
	Another key area is external resource mobilisation, where the emphasis is on the bottlenecks that prevent investment from materializing and how to overcome them.
	
	• The focus is on the **practical challenges** of attracting stable, long-term capital. You need to diagnose why there is a gap between investment announcements and actual projects on the ground.
	  ○ **Q.** Justify the need for **FDI** for the development of the Indian economy. Why there is **gap between MOUs signed and actual FDIs**? Suggest remedial steps to be taken for increasing actual FDIs in India. (2016, 12.5 marks)
	• You are also expected to understand the core relationship between investment and the creation of productive assets in the economy.
	  ○ **Q.** Explain the meaning of **investment** in an economy in terms of **capital formation**. Discuss the factors to be considered while designing a concession agreement between a public entity and private entity. (2020, 15 Marks)
	
	How to Answer Questions in this Theme:
	
	Your answers must clearly explain the causal chain: **savings** and **FDI** fuel **investment** (Gross Fixed Capital Formation), which in turn drives **economic growth**.
	
	• When a question asks you to evaluate a single factor (like the savings rate), present a **balanced argument**. First, explain why it is important, but then discuss other critical factors (like human capital, infrastructure, technology) to

	show that it is a necessary but not sufficient condition for growth. • For questions on FDI, move beyond a simple definition. **Diagnose the bottlenecks** (e.g., bureaucratic hurdles, land acquisition issues, complex regulations) and provide **specific, actionable reforms** as solutions.

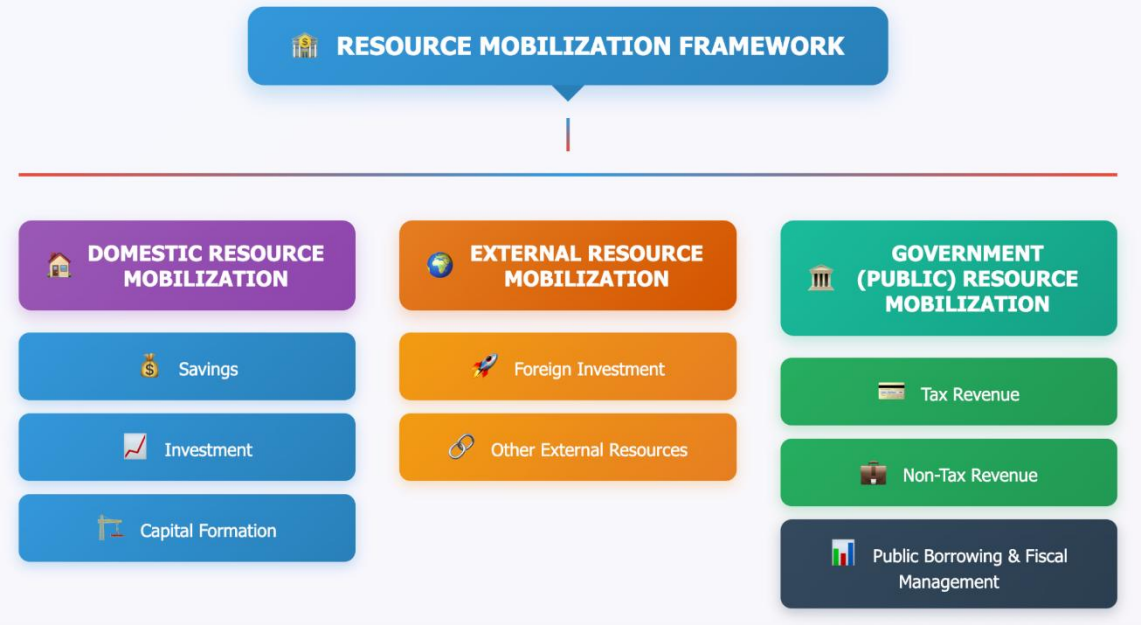
Student Notes:

Introduction

Resource mobilisation refers to the **process of acquiring and accumulating** various types of resources—financial, human, and natural—**to fund an economy's developmental objectives**.

Types of Resources

- **Financial Resources:** This includes **capital** from both **domestic** sources (public revenue, private savings, corporate investments) and **external** sources (FDI, FPI, external borrowings).
- **Human Resources:** A **skilled and productive** population is a nation's most valuable asset.
- **Natural Resources:** The sustainable use of **land, water, and minerals** is crucial for long-term development.



2.1. Domestic Resource Mobilisation

Rapidly evolving global landscape is making traditional globalized policies less effective as nations turn inward. This unfortunate reality highlights the urgent **need for effective domestic resource mobilization.**

- As noted in the **Economic Survey 2024-25 as external growth drivers become less reliable**, a nation's ability to **internally generate and deploy its financial, human, and natural resources** is now critical for resilience and sustained development.
- Domestic Resources are considered more stable and reliable, providing a strong foundation for long-term growth.

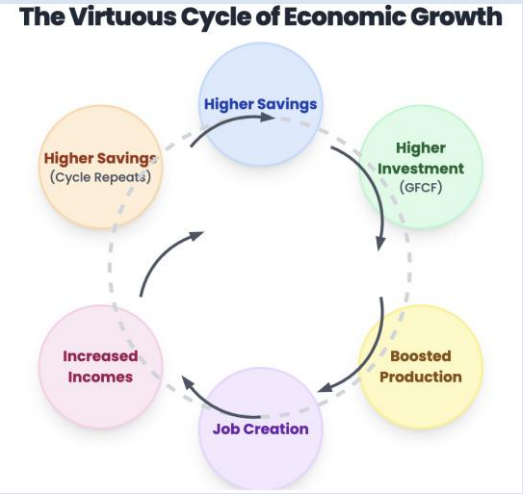
2.1.1. Savings, Investment, and Capital Formation

Savings and investment are the primary engines of economic growth. They fuel **Gross Fixed Capital Formation (GFCF)** that enhance an economy's productive capacity.

Student Notes:

Relevant Concepts:

- **Savings**: The portion of **income** not spent on consumption, typically accumulated in the form of **bank deposits**, **investments**, or **assets**.
- **Investment**: The allocation of resources (typically **capital**) to generate future returns. It includes spending on **machinery**, **infrastructure**, and other assets to create long-term productive value.



Savings and Investment are the primary engines of **economic growth**. **Savings**, when **channelled effectively**, become **investments** that drive productive activities in the economy.

- **Gross Fixed Capital Formation (GFCF)**: A measure of **investment**, representing the creation of **physical assets** like **machinery**, **buildings**, and **infrastructure**. A higher **GFCF** enhances an economy's **productive capacity**.

Higher **savings** lead to higher **investment** (GFCF), which boosts **production**, creates **jobs**, and increases **incomes**. This, in turn, leads to higher **savings**, creating a **self-sustaining cycle** of growth.

2.1.2. Trends of India's Savings Rate

India's Gross Domestic Savings rate has fluctuated, comprising three main components:

- **Household Savings:** Traditionally the largest component, it includes financial and physical savings. Household savings, traditionally the largest component of India's gross domestic savings, have declined to **18.1% of GDP in FY24**, continuing a three-year downward trend (CareEdge ratings data).
- **Corporate Savings:** Retained profits of companies that are reinvested. Private corporate sector gross savings were estimated around **11% of GDP in FY24**, a figure that has remained stable in recent years.
- **Public Savings:** The surplus (or deficit) of government revenue over consumption expenditure.
- **Gross Domestic Savings Rate:** 30.7% of GDP in FY24
  This includes **household, corporate, and government savings**. The rate has remained relatively stable but is lower than in previous years

- **Public Savings:** The surplus (or deficit) of government revenue over consumption expenditure.
- **Household Financial Liabilities:** 6.2% of GDP in FY24 Indicates a rise in household borrowing and reliance on credit.

Student Notes:

Savings Rates in India		
Indicator	**FY24 (% of GDP)**	**Trend**
Household (Private) Savings Rate	18.1%	Declining
Gross Domestic Savings Rate	30.7%	Stable/Lower
Household Financial Liabilities	6.2%	Rising

Historically, India has maintained a respectable savings rate. However, a key policy challenge has been to efficiently translate these savings into productive investments.

Strengthening India's Banking Sector

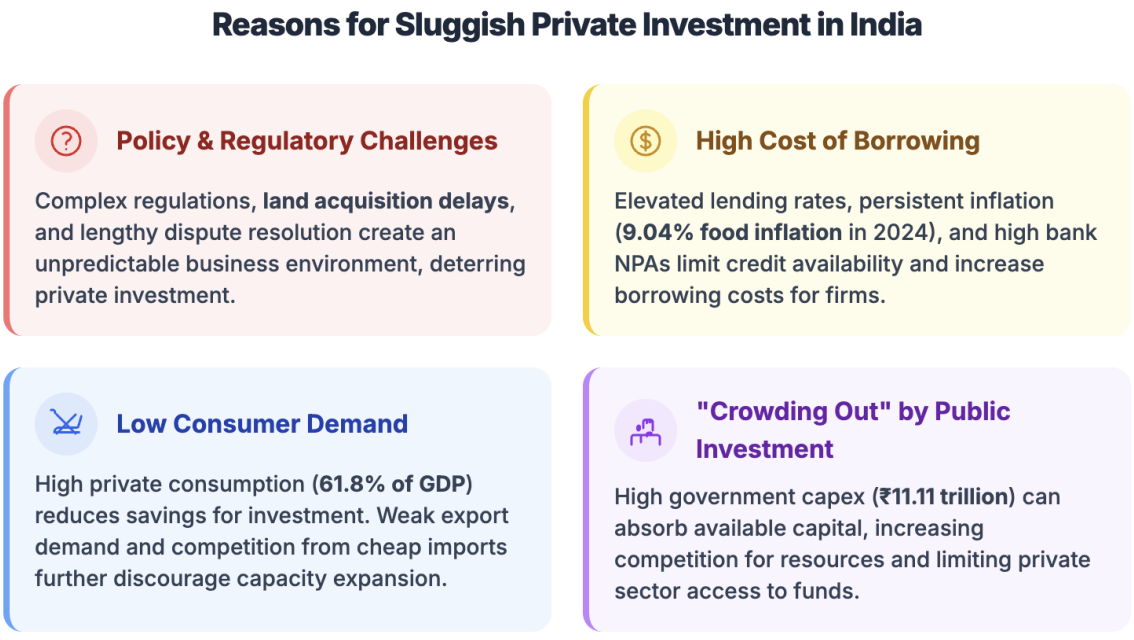
Though no **Indian bank** is in the world's top **30**, the **Indian banking sector** is strengthening. Following a clean-up of **corporate** and **bank balance sheets** and the institutionalization of the **Insolvency and Bankruptcy Code (IBC)**, Indian banks are now in a strong position to fuel the country's **growth**.

- **India's Impressive Financial Scale:** India's **financial institutions** have grown significantly. **E.g.**, the balance sheet of the **State Bank of India (SBI)** at **$807 billion** is now larger than that of the **World Bank** (**$347 billion**) and the **IMF** (**~$560 billion**).
- **A New Global Lender:** India is now a significant provider of **international assistance**, offering **unconditional aid** (like the **$1 billion loan** to **Sri Lanka**) as an alternative to the conditional loans of the **IMF**, which are based on the **"Washington Consensus."**

2.1.3. The Investment Paradox: Sluggish Private Investment and GFCF

A defining feature of India's recent growth story is its heavy reliance on consumption. **Private consumption accounts for 60% of GDP**, while GFCF contributes only around 31%.

- This is in sharp contrast to **investment-led models like China**, where GFCF has consistently been above 40%. India's GFCF has never crossed the 35% mark between 2001 and 2023.
- The government has sought to catalyse private investment through a significant increase in its own capital expenditure, hoping to **"crowd in" private players** by creating demand and improving infrastructure.



Achieving the 'Viksit Bharat @ 2047' goal necessitates a **sustained increase in private investment by 1-2 % points of GDP**. As per the **Economic Survey 2024-25**, to achieve this growth, the **investment rate** must rise to approximately **35% of GDP**, up from the current **31%**.

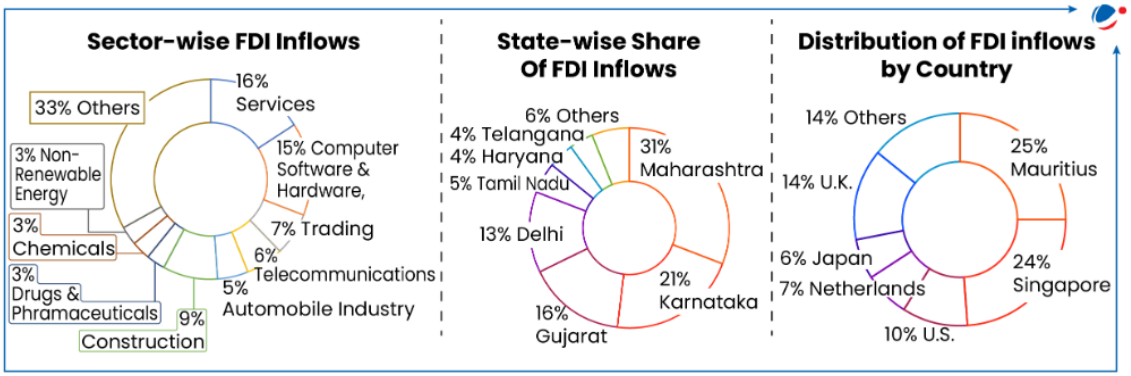
Student Notes:

2.2. External Resource Mobilisation

2.2.1. Foreign Direct Investment (FDI)

India mobilizes resources from two main external sources: **Foreign Direct Investment (FDI)** and **Foreign Portfolio Investment (FPI)**.

- **Foreign Direct Investment (FDI)**: FDI involves **long-term investments** in **productive assets**, such as acquiring companies or setting up facilities. It brings **capital**, **technology**, and **management expertise**, driving **economic growth** and **job creation**.
- **Foreign Portfolio Investment (FPI)**: FPI involves **investments** in **financial assets** like **stocks** and **bonds**. It is more **speculative** and provides **market liquidity** but lacks the **long-term stability** of FDI, often referred to as **"hot money"** due to its quick exit nature.



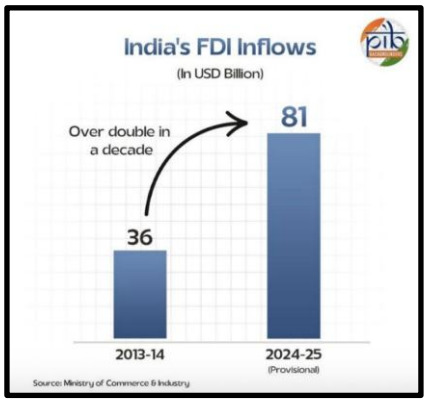
Feature	Foreign Direct Investment (FDI)	Foreign Portfolio Investment (FPI)
Nature of investment	Investment directly in productive assets (e.g., acquiring a company, setting up facilities).	Investment in financial assets/securities (e.g., stocks, bonds, ADRs, mutual funds)
Degree of Control	Investors typically take controlling positions and are actively involved in management and strategic plans.	Investors are generally passive and not actively involved in day-to-day operations or strategic plans.
Investment Horizon	Requires a long-term approach, taking years from planning to implementation; not easily liquidated.	Often has a much shorter investment horizon, especially during turbulence.
Liquidity of Assets	Assets are typically large and quite illiquid, making departure difficult.	Financial assets are highly liquid and widely traded, allowing for quick exit. Thus, FII is often referred to as "**hot money**" due to its tendency to flee

FDI in a New Global Order:

The current geopolitical landscape, marked by a global push to **diversify supply chains away from China**, presents a significant opportunity for India. The **'China+1'** strategy involves multinational corporations setting up alternative manufacturing bases to de-risk their operations. India, with its large domestic market and democratic credentials, is a natural contender to attract this new wave of FDI.

Student Notes:

Government initiatives like the **Production Linked Incentive (PLI) schemes** are specifically designed to **attract global manufacturers in strategic sectors** like electronics, pharmaceuticals, and automobiles and integrate India into global value chains.



2.2.2. Bridging the Gap between FDI MOUs to Actual Inflows:

A persistent challenge for India has been the gap between announced FDI intentions (Memorandums of Understanding) and the actual realisation of these investments on the ground. This gap is often attributed to several factors:

- **Bureaucratic Hurdles:** Delays in obtaining regulatory approvals and clearances remain a significant obstacle.
- **Infrastructure Deficits:** Underdeveloped infrastructure increases operational and logistics costs for investors.
- **Land Acquisition:** The process of acquiring land for large projects is often complex and fraught with delays.
- **Round tripping** via **tax havens** inflates **FDI inflows** by routing domestic funds as foreign investments, creating a false perception of foreign capital and widening the gap between **announced FDI intentions (MOUs)** and actual **realized investments**. This undermines the transparency and accuracy of FDI data.

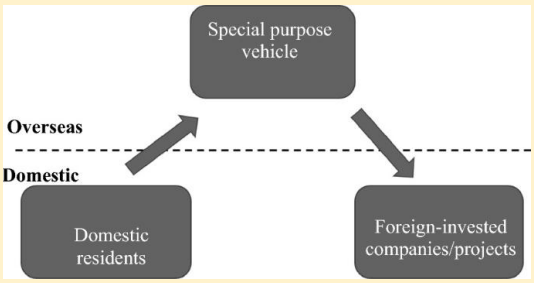
Related Concept: Round Tripping

It refers to the illicit practice where domestic funds are routed through an overseas jurisdiction (often a tax haven) and **reinvested back into the country disguised as FDI** to take advantage of tax benefits or to launder money. It is a key regulatory concern.

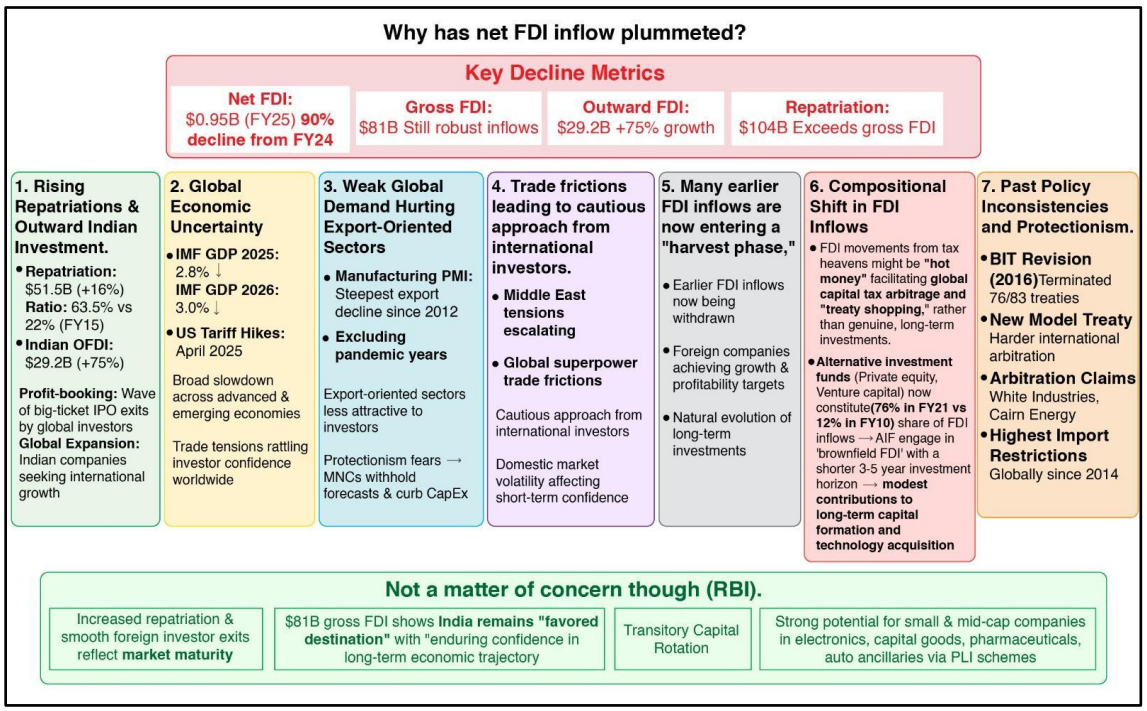
Generally there are two types of FDI courses deemed as round tripping:

(i) domestic investment masked as foreign investment via non-resident SPE; and

(ii) channelling FDI funds via local SPE.



The **services sector** remains the largest recipient of FDI. For FY24, the net FDI was **USD 10.1 billion (Economic Survey FY25)**.



2.2.3. Other External Resources

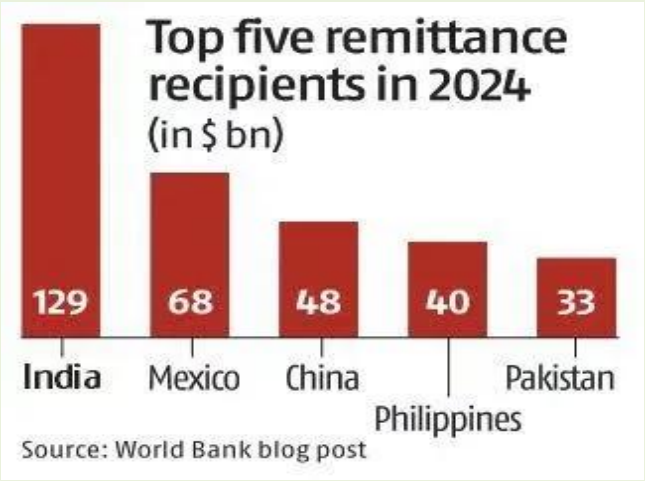
Official Development Assistance (ODA): ODA refers to **concessional financing** provided by official agencies to developing countries. While historically a recipient, India's high economic growth has changed its international standing, and it is no longer viewed by the West as a typical aid-receiving nation.

- Simultaneously, India has expanded its own development assistance programs. Under the **Indian Development and Economic Assistance Scheme (IDEAS)**, India provides Lines of Credit (LoC) to other developing countries, primarily in Asia and Africa, to fund development projects.
- This serves as a tool for economic diplomacy and external resource mobilisation for Indian companies executing these projects abroad. A recent example is the first-ever rupee-denominated LoC extended to Mauritius.

Remittances

Private transfers, mainly driven by remittances by Indians employed overseas, formed the bulk of net transfers, growing steadily.

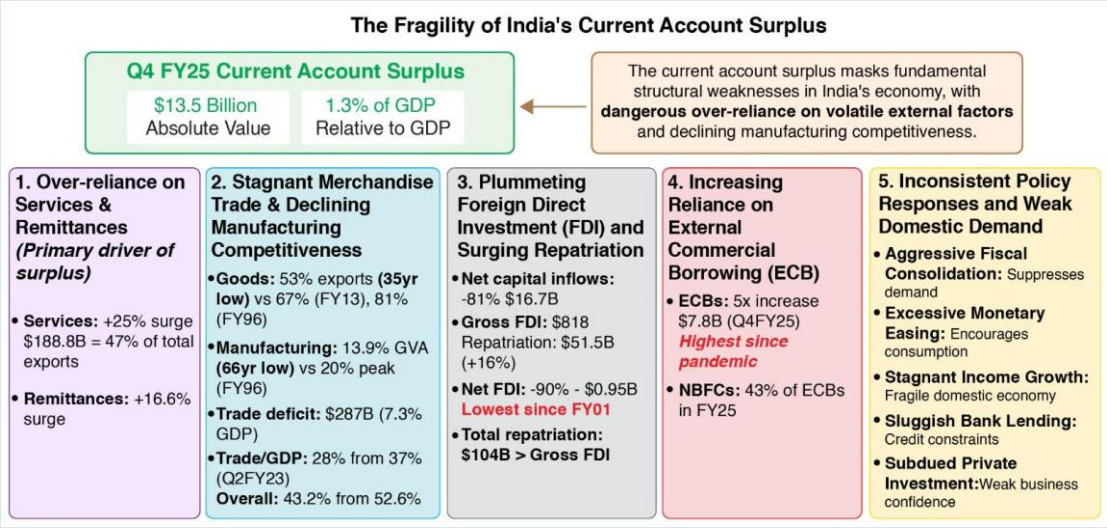
In 2024, India received a record **$129.4 billion in remittances**. This growth reflects the **continued strength of India's diaspora** and robust remittance inflows despite global economic uncertainties.



Student Notes:

Current Account Surplus:

India's recent current account s**urplus,** while seemingly indicating external sector strength, masks significant underlying vulnerabilities.



India should prioritize **manufacturing competitiveness, boosts domestic demand, and attracts sustainable foreign investment** to reduce vulnerabilities of current account.

2.3. Government (Public) Resource Mobilisation

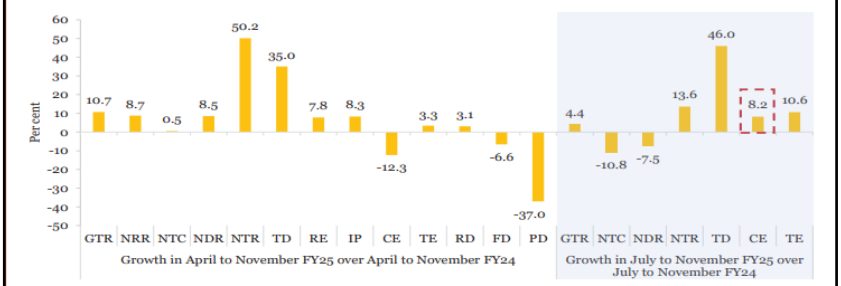
2.3.1. Tax Revenue

Taxation is the primary instrument for government resource mobilisation, essential for funding public goods and welfare programs.

The GST Regime

GST was a landmark reform aimed at creating a **unified national market**. While it has improved formalization and revenue buoyancy for states, its reform agenda remains unfinished. Key structural issues include:

Chart I.36: Sound and sure footing of union finances in FY25



Source: CGA monthly provisional accounts.

Note: GTR- Gross Tax Revenue; NRR-Revenue Receipts (net to Centre); NTC-Tax revenue (net to Centre); NDR-Non-debt receipts; TD-Tax devolution to States; RE-Revenue Expenditure; IP-Interest Payments; CE-Capital Expenditure; TE-Total Expenditure; FD-Fiscal Deficit; RD-Revenue Deficit; PD-Primary Deficit.

- **Exclusion of Key Items:** Petroleum products, electricity, and alcohol remain outside the GST ambit, **breaking the value chain** and **cascading taxes**.
- **Complex Rate Structure:** The multiple-rate structure complicates **compliance** and leads to classification disputes.
- **Cess and Surcharges:** The imposition of cesses on top of GST undermines the 'one nation, one tax' principle. The share of cesses and surcharges in gross tax revenue fell to **14.5% in 2023-24**, down from a peak of 20.2% in 2020-21.

Student Notes:

Analyzing India's Low Tax-to-GDP Ratio

A key challenge for India has been its low Tax-to-GDP ratio. **Current Tax-to-GDP Ratio** India's **tax-to-GDP ratio** stands at **11.7%** (2024), much lower than the **OECD average** of **34.3%** and the **emerging market average** of **20-25%**.

Key Reasons for India's Low Tax-to-GDP Ratio:

- **Current Tax-to-GDP Ratio** India's **tax-to-GDP ratio** stands at **11.7%** (2024), much lower than the **OECD average** of **34.3%** and the **emerging market average** of **20-25%**.
- **Large Informal Economy**: Around **50% of India's GDP** is from the informal sector, which remains largely untaxed, limiting the tax base.
- **Tax Exemptions and Loopholes**: Various **tax exemptions** in sectors like **agriculture** and **exports** reduce the overall tax revenue.
- **Low Per Capita Income**: With a **per capita income** around **$2,600** in FY25, the tax-paying base remains limited, restricting overall tax collection.
- **Inefficient Tax Collection**: **Tax evasion** and administrative inefficiencies reduce the effectiveness of the tax system.
- **Dependence on Indirect Taxes**: **Indirect taxes** (e.g., **GST**) contribute significantly to the tax revenue but are less progressive, limiting their effectiveness in capturing income from higher earners.

A **low ratio limits the government's fiscal capacity to invest** in infrastructure and social sectors. Structural factors contributing to this include a **large informal economy, tax exemptions, and low per capita income**.

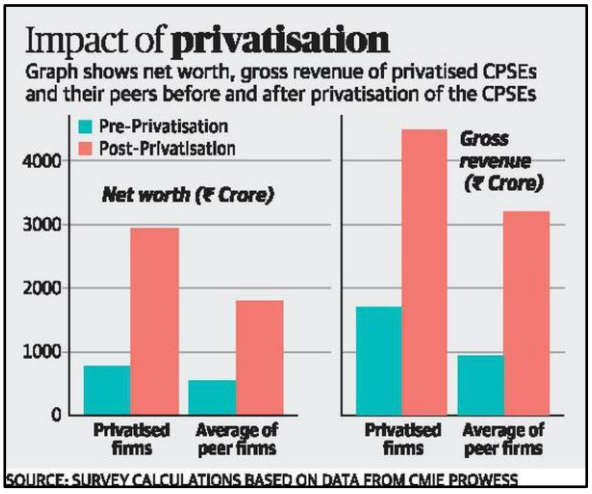
However, there has been a **recent rise in the tax-to-GDP ratio** due to improvements in **direct tax collection**, **tax reforms**, and better **compliance**, signaling a positive shift in India's tax system.

2.3.2. Non-Tax Revenue

Disinvestment as a Strategic Tool

Disinvestment, or the sale of government equity in Public Sector Enterprises (PSEs), has evolved from being a purely revenue-raising exercise to a strategic policy tool.

Under the **"New PSE Policy",** the government aims to maintain **only a "bare minimum" presence in strategic sectors** while privatizing or closing PSEs in non-strategic sectors. It is intended to improve **efficiency, unlock capital**, and allow the government to exit non-core areas.



- As of FY25, the government has accrued only Rs 9,319 crore (lower than Rs 16,507 crore in FY24) through disinvestment, marking the **lowest level since 2014-15** despite post-pandemic economic recovery. In 2018-19, the government collected Rs 84,972 crore from CPSE disinvestment, higher than Rs 80,000 crore pegged in the Budget for that year.

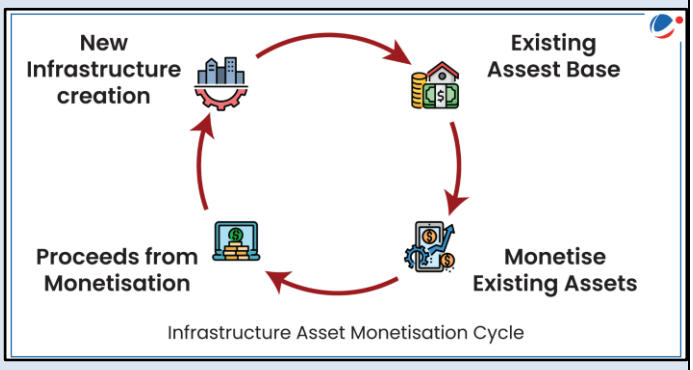
Asset Monetisation Plan

Union Budget 2025 announced India's Asset Monetization Plan 2025-30, a strategic approach to **leverage the existing public infrastructure assets and create non-tax revenue to reinvest** in new infrastructure projects.

Student Notes:

- This new initiative is based on the earlier **National Monetization Pipeline (NMP) 2021-25,** which plans to generate ₹10 lakh crore through **monetizing these functioning brownfield assets** across sectors, including Highways, Railways, Power, Telecom, and Aviation

Impact Assessment:



1. **Economic Development:**
   - **Infrastructure Push**: The ₹10 lakh crore reinvestment is expected to aid infrastructure push, enhancing connectivity and efficiency across the country. This aligns with the government's target of a $5 trillion economy.
   - **Job Creation**: Enhanced infrastructure projects are likely to create millions of new jobs directly related to construction as well as indirectly through allied industries.
2. **Participation of the Private Sector:**
   - **Enhanced Investment**: The strategy promotes private sector involvement in infrastructure development, which could result in greater investment and expertise in public initiatives.
   - **Public-Private Partnerships (PPPs):** Ministries focused on infrastructure are preparing a 3-year project pipeline in PPP format, encouraging teamwork between the public and private sectors.
3. **Revenue Mobilization:**
   - Asset monetization functions as a source of revenue that does not create debt, supporting fiscal consolidation initiatives without raising the fiscal deficit.
   - By end of FY 2023-24, assets valued at around **₹3.85 lakh crore** have been monetized, reaching roughly **64% of the total four-year objective**.

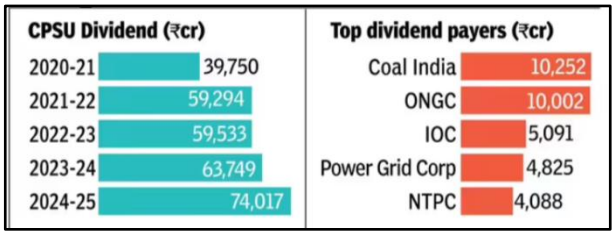
Key Challenges:

- **Asymmetrical Performance:** There has been a lack of uniform performance throughout the various sectors with severe under performance from the **Ministry of Railways that met only 30% of its revised goals,** resulting in an undulating pressure on other sectors to make up for this.
- **Challenges in Asset Valuation:** Assessing the **fair market worth** of various assets is intricate, which may result in **undervaluation or overvaluation**. Capturing private investment demands transparent revenue frameworks and strategies for risk reduction.
- **Regulatory and Policy Challenges:** Prolonged approval procedures and varying regulations among sectors may postpone transactions. Government agencies might not have the necessary skills to oversee intricate monetization procedures.

Effective implementation of an asset monetization plan requires **transparency, ensuring clear and accessible information to build trust among stakeholders. Stakeholder collaboration** across government, private sector, and civil society is essential for inclusive decision-making.

The Role of Dividends from PSUs and RBI Surplus Transfer

Other significant sources of non-tax revenue include **dividends paid by profitable PSUs** and the transfer of **surplus profits from the RBI** to the government.



RBI has approved a bumper surplus transfer, or dividend, of **Rs 2.69 lakh crore**

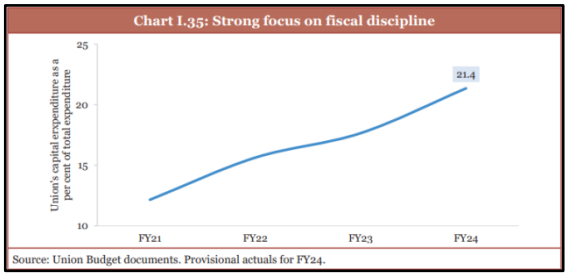
to the Central Government for FY 2024-25. This is **27% higher** than the Rs 2.11 lakh crore surplus transferred by the RBI during the accounting year 2023-24.

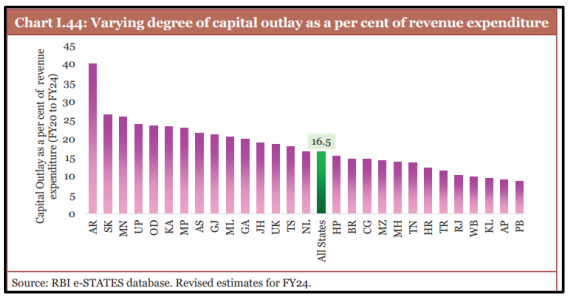
Student Notes:

2.3.3. Public Borrowing and Fiscal Management

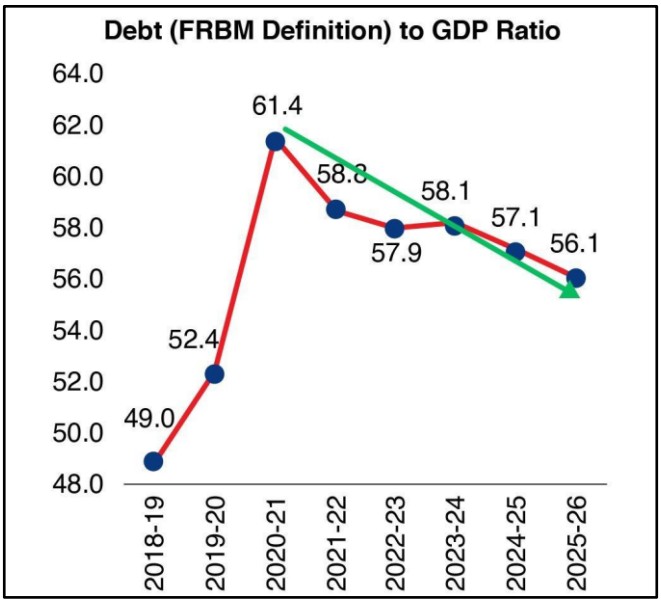
Balancing Growth Imperatives with Fiscal Sustainability:

Government borrowing is a key tool to finance fiscal deficits. However, high levels of public debt can pose **risks to macroeconomic stability by increasing interest burdens** and potentially **crowding out** private investment.





- The central challenge is to manage this debt while continuing to fund economic growth. This is particularly relevant in the post-pandemic era where most countries, including India, have seen a surge in public debt.
- The **Fiscal Responsibility and Budget Management (FRBM) Act, 2003**, provides a legislative framework for ensuring fiscal prudence by setting **targets for fiscal and revenue deficits**. This framework has been periodically reviewed to balance the need for fiscal discipline with the economy's growth requirements.
- Post-COVID-19, a new fiscal consolidation plan was introduced in the 2021-22 budget, aiming to reduce the fiscal deficit to **below 4.5% by 2025-26**. The central government aims to make debt-GDP ratio a new **fiscal anchor** from FY27 and aim to reduce the central debt ratio to **50% by 2031**.



Debt-GDP ratio:

- **Central Government Debt-to-GDP Ratio (FY 2024-25):** 57.1% (Revised Estimate).
- **General Government Debt-to-GDP Ratio (including states):** ~80–81%.

India's debt-to-GDP ratio is **moderate compared to advanced economies** like the USA, but higher than many emerging markets. The central government's share is lower than the general government (which includes states).

Rationale behind this shift:

The **N.K. Singh committee** had suggested **using debt as the primary target** for fiscal policy becasue:

- **Long-Term Fiscal Sustainability:** The debt-to-GDP ratio provides a more comprehensive measure of a country's fiscal health, focusing on the sustainability of government borrowing over time rather than just annual flows.

Student Notes:

- **Greater Policy Flexibility:** It allows governments to respond to economic shocks (such as recessions or pandemics) with counter-cyclical spending, without being constrained by rigid annual fiscal deficit targets.
- **Improved Transparency and Accountability:** By including off-budget borrowings and contingent liabilities, the debt-to-GDP ratio offers a clearer and more transparent picture of total government obligations, improving public finance management.
- **Alignment with Global Best Practices:** Many advanced economies use the debt-to-GDP ratio as a fiscal anchor, aligning India's fiscal framework with international standards and boosting investor confidence. E.g., EU, Germany.
- **Focus on Growth-Enhancing Expenditure:** Governments can maintain or increase productive public investment (such as infrastructure) as long as overall debt remains sustainable, supporting long-term economic growth.

2.3.4. Public Investment as a Growth Catalyst

In recent years, the government has significantly ramped up public capital expenditure to drive growth and modernize the economy.

- **Infrastructure:** The Union Budget 2025-26 has allocated a historic **₹11.21 Lakh crore** (3.1% of India's GDP)for capital expenditure, focusing on comprehensive infrastructure development under initiatives like PM Gati Shakti.
- **Clean and Nuclear Energy:** There is a strong push towards sustainable energy. The budget provides **viability gap funding** for offshore wind energy projects, support for the e-vehicle ecosystem, and a new scheme for biomass aggregation machinery.
    - A new **Nuclear Energy Mission** has been launched with a ₹20,000 crore outlay for R&D in Small Modular Reactors (SMRs). The **PM Surya Ghar Muft Bijli Yojana** aims to solarise 1 crore households.
- **Agriculture and Housing:** To support the farm sector, the budget allocated ₹20 lakh crore for agricultural credit and established an **Agriculture Accelerator Fund**.
    - The **PM Awas Yojana** aims to build 30 million affordable rural houses and address the needs of 1 crore urban poor families.
- **R&D Challenge:** India's expenditure on R&D is only **about 0.7% of GDP**, far below peers like China (2.4%). The private sector's contribution is particularly low, at just 37% of the total R&D spending.
    - To address this, the Union Budget has allocated ₹20,000 crore to the Ministry of Science and Technology to boost innovation.

2.4. Contemporary Issues and the Future of Resource Mobilisation

2.4.1. Consumption led or Investment led growth: Which one is India pursuing?

Economic growth can be driven by either **investment-led** or **consumption-led** growth, each with distinct characteristics, advantages, and drawbacks.

Is consumption enough to drive growth? Premium

An economy's growth depends on two factors. One is the supply or the production of goods and services, and the other is the demand or expenditure for purchasing these goods and services. Among the sources of demand, investment stands out for its ability to create 'multiplier effects'. Consumption can only follow, not lead, growth

State of Private & Public Sector Investment

Private Sector Investment

Capex reached **₹6.56 trillion** (US$77.54 billion) in FY 2024-25.

Share in GFCF dropped to **32.4% in FY24**, an 11-year low (down from >40% in FY16).

As a % of GDP, investment fell to **11.2% in FY24**, below the pre-COVID average of 11.8%.

Public Sector Investment

Combined Centre & State investments account for over **25% of GFCF**.

The central government alone contributed more than **13% of GFCF in FY24**.

For comparison, US government spending represents about **36.7% of GDP** (IMF, 2022).

- **Investment-Led Growth**: This strategy focuses on increasing investment in **capital assets**, **infrastructure**, and industries.
  - It includes **private sector investments** in machinery and factories, **government spending** on infrastructure (roads, ports), and **household investments** in real estate.
  - The benefits include long-term economic capacity building, **job creation**, and significant **multiplier effects**. For instance, ₹100 invested can increase GDP by ₹125 due to the ripple effect of income generation.
  - However, the downside is the **high initial costs** and **long completion times** for large projects, which delay returns.
- **Consumption-Led Growth**: Driven by an increase in **consumer spending**, this model stimulates immediate economic activity, boosts **production**, and benefits a broader section of the population.
  - However, over-reliance on consumption can lead to **sustainability issues**, a **weaker multiplier effect**, and potential **inflation risks** if demand exceeds supply.

The government has sought to catalyse private investment through a significant increase in its own capital expenditure, hoping to **"crowd in" private players** by creating demand and improving infrastructure.

Growth story of India vis-à-vis China

- In the early 1990s, both countries had similar per capita incomes. However, by 2023, China's per capita income was **five times** that of India. This speedy growth in China was **led by investment**. **In 1992, investment as a share of GDP was 39% in China compared to 27.4% in India**. In **2023, China's investment rate was around 41 % compared to India's 30%**.
- East Asian Tiger economies such as South Korea also underwent a steady shift from consumption-driven to investment-driven growth during their high-growth phases, with a significant decline in the consumption share of GDP and a corresponding doubling of the investment share.

Table 1: Distribution (in %) of GDP by expenditure type: India and China, 2023

	India	China
Private consumption	60.3	39.1
Investment	30.8	41.3
Government consumption	10.4	16.5
Exports	21.8	19.7
Less imports	-24.1	-17.6
GDP	100.0	100
GDP per capita (current US$)	2481	12,614

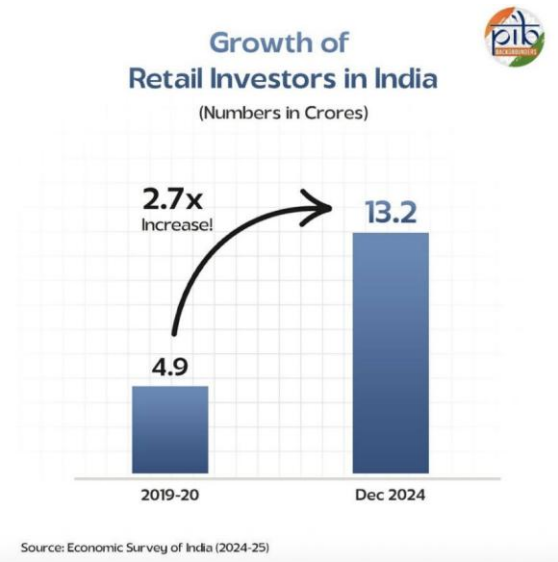
2.4.2. Role of India's Capital market in Resource mobilisation for investments

An economy's ability to translate savings into productive investment is critical for growth. In this context, deep and efficient capital markets are indispensable.

Student Notes:

Current State of India's Capital Market:

- **Equity Market Growth:** India's equity market has shown significant growth and resilience.
  - The **market capitalization to GDP ratio stood at a robust 136%** at the end of December 2024, which is significantly higher than that of other major economies like China (65%). This indicates a relatively deep and developed equity market.
  - The IPO market has also been vibrant, with India ranking among the top globally in terms of the number of listings.
- **The Underdeveloped Corporate Bond Market:** A significant weakness in India's financial architecture is its **shallow corporate debt market**. India's debt market is **dominated by government securities,** with a relatively shallow and illiquid corporate bond market compared to advanced economies.
  - According to the **Economic Survey 2024-25**, India's corporate bond market as a percentage of GDP is **only around 18%,** starkly lower than in countries like **South Korea (80%)**.
  - The market is **dominated by private placements** (around 98% of issuances) and is concentrated in top-rated financial sector companies, which limits access for smaller firms and retail investors.
  - This forces the manufacturing and non-energy infrastructure sectors to rely more on bank credit, hindering long-term capital formation.



- **Investor Base:** There has been a **positive trend of growing domestic retail participation**, especially in equities and mutual funds, facilitated by digital platforms.

India's capital market lacks depth, particularly in the corporate bond segment. Deepening the capital market requires reforms to **enhance the secondary market liquidity** for corporate bonds, **encourage public issuances, and expand the investor base** for debt instruments.

Challenges faced by NBFCs

NBFCs are an indispensable part of India's **resource mobilization** framework due to their reach and specialized lending. However, they face the following key issues:

- **Liquidity and Asset-Liability Mismatches**: The **NBFC sector** has faced significant stress in the past due to **liquidity crunches** and **asset-liability management (ALM)** issues, as highlighted by the **IL&FS crisis**.
- **Regulatory Scrutiny**: Following past crises, the **RBI** has tightened its **regulatory framework** for **NBFCs**, introducing **Scale Based Regulation (SBR)** to align rules with the **systemic risk** posed by larger players.
- **Rising Credit Risk**: There are emerging concerns about rising stress and delinquencies in **unsecured loan segments**, which could impact the **profitability** and **stability** of some **NBFCs**. The **IMF** has also flagged risks from the high concentration of **NBFC lending** to the **power** and **infrastructure sectors**.

While their effectiveness in promoting **financial inclusion** is undeniable, ensuring their **stability** through robust regulation, prudent **risk management**, and adequate **liquidity** is crucial for the overall health of the **financial system**.

Student Notes:

2.4.3. Industrial Policy as a Mobilisation Tool

Industrial policy plays a crucial role in enhancing **production capacity** and **employment intensity** within the economy. Several initiatives have been introduced to boost **resource mobilization** and drive economic growth.

Key schemes like **Production Linked Incentive (PLI) Scheme**, **Make in India**, **Startup India Scheme**, and **Atmanirbhar Bharat** focus on boosting manufacturing, fostering entrepreneurship, and creating a self-reliant economy.

These initiatives collectively aim to create a conducive environment for growth and improve India's competitiveness globally.

2.4.4. Core Constraints in India's Resource Mobilisation

Core Constraints in India's Resource Mobilisation

Structural Economic Issues

"Jobless" growth with stagnant manufacturing share leads to **"premature deindustrialization."** Labor shifts to low-productivity services, failing to absorb the vast workforce.

Fiscal Pressures & Centre-State Dynamics

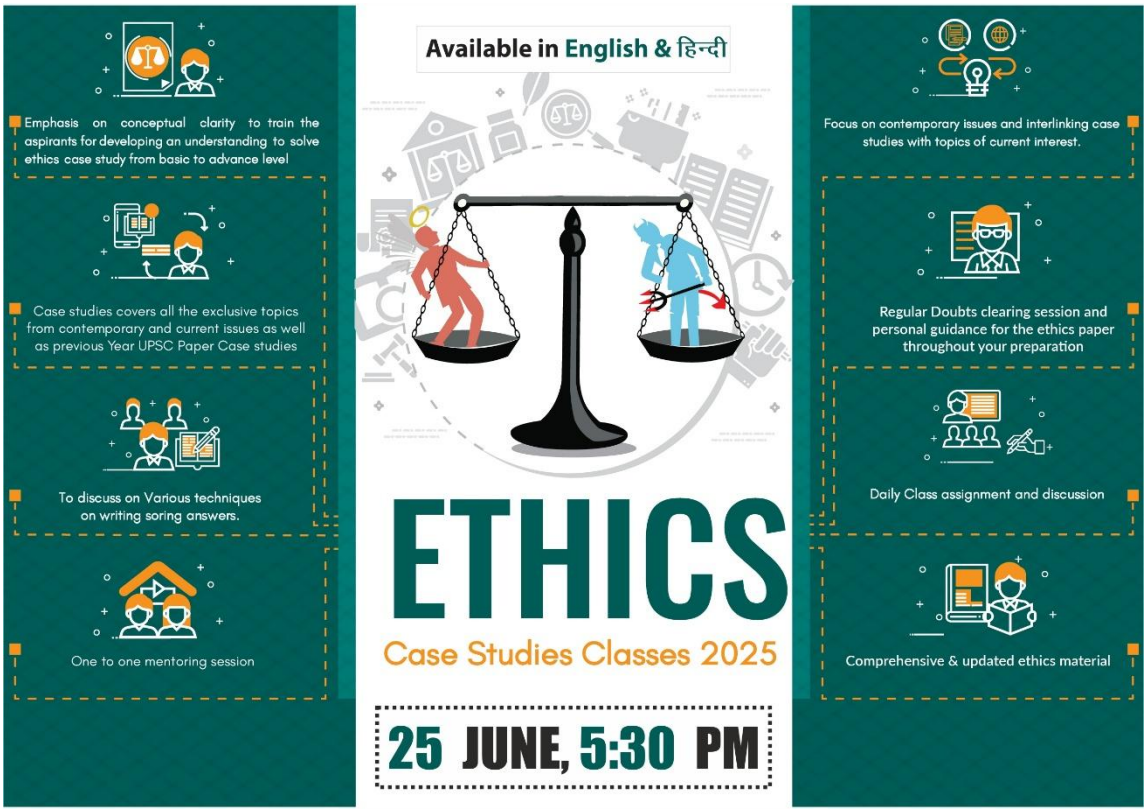
High government debt risks **crowding out private investment**. Fiscal transfers create friction, with prosperous states resenting what they see as inequitable redistribution.

The Human Capital Deficit

The most significant bottleneck. Only **21% of youth** have vocational training, and graduate employability is low at **51%**. A skilled workforce is essential for growth.

Infrastructure & Resource Bottlenecks

Despite the government's capex push, significant **infrastructure deficits** remain, which increases logistics costs. Unsustainable resource management further constrains long-term growth.



3. GOVERNMENT BUDGETING

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. What are the causes of persistent high food inflation in India? Comment on the effectiveness of the monetary policy of the RBI to control this type of inflation. (2024, 10 Marks) 2. Distinguish between Capital Budget and Revenue Budget. Explain the components of both these Budgets. (2021, 10 Marks) 3. Explain the rationale behind the Goods and Services Tax (Compensation to states) act of 2017. How has COVID-19 impacted the GST compensation fund and created new federal tensions? (2020, 15 Marks) 4. Enumerate the indirect taxes which have been subsumed in the goods and services tax (GST) in India. Also, comment on the revenue implications of the GST introduced in India since July 2017. (2019, 10 Marks) 5. The public expenditure management is a challenge to the Government of India in the context of budget making during the post liberalization period. Clarify it. (2019, 15 Marks) 6. Comment on the important changes introduced in respect of the Long-term Capital Gains Tax (LCGT) and Dividend Distribution Tax (DDT) in the Union Budget for 2018-2019. (2018, 10 marks) 7. Women empowerment in India needs gender budgeting. What are the requirements and status of gender budgeting in the Indian context? (2016, 12.5 marks) 8. In what way could replacement of price subsidy with Direct Benefit Transfer (DBT) change the scenario of subsidies in India? Discuss (2015, 10 marks) 9. What were the reasons for the introduction of Fiscal Responsibility and Budget Management (FRBM) Act, 2003? Discuss critically its salient features and their effectiveness. (2013, 10 marks)	This chapter tests your understanding of the government's fiscal architecture—how it earns, how it spends, and how it manages the gap. The questions are a mix of core concepts and a critical analysis of landmark fiscal and tax reforms. The examiner expects you to have absolute conceptual clarity on the components of the budget. This is a non-negotiable foundation. **Q.** Distinguish between **Capital Budget and Revenue Budget**. Explain the components of both these Budgets. (2021, 10 Marks) Beyond definitions, the focus shifts to fiscal management and the government's commitment to discipline. Landmark legislations and tax reforms are a favourite area, requiring you to analyze their rationale, impact, and challenges. **Q.** What were the reasons for the introduction of **Fiscal Responsibility and Budget Management (FRBM) Act, 2003**? Discuss critically its salient features and their effectiveness. (2013, 10 marks) **Q.** Explain the rationale behind the **Goods and Services Tax (Compensation to states) act of 2017**. How has COVID-19 impacted the GST compensation fund and created new federal tensions? (2020, 15 Marks) In recent years, the scope has expanded to include the interplay between government policy and macroeconomic challenges like inflation. **Q.** What are the causes of persistent **high food inflation** in India? Comment on the effectiveness of the **monetary policy** of the RBI to control this type of inflation. (2024, 10 Marks) **How to Answer Questions in this Theme:** • For **conceptual questions** (like Capital vs. Revenue Budget), don't just list items. Explain the **underlying logic**: Capital items alter the government's **assets and liabilities**, while Revenue items are

Student Notes:

10. What is the meaning of the term 'tax expenditure'? Taking housing sector as an example, discuss how it influences the budgetary policies of the government. (2013, 10 marks) 11. Discuss the rationale for introducing Goods and Services Tax (GST) in India. Bring out critically the reasons for the delay in roll out for its regime. (2013, 10 marks)	recurring and do not. This demonstrates deeper understanding. • For **policy critique questions** (like FRBM or GST), use a structured approach: **1. Rationale** (Why was it introduced?), **2. Key Features**, **3. Achievements/Positives**, **4. Challenges/Criticisms** (e.g., GST's complexity, FRBM's 'escape clause'), and **5. Way Forward**. • For contemporary issues like **inflation**, diagnose the specific nature of the problem (e.g., **supply-side** vs. **demand-pull**) and then critically evaluate the effectiveness of the policy tool in question.

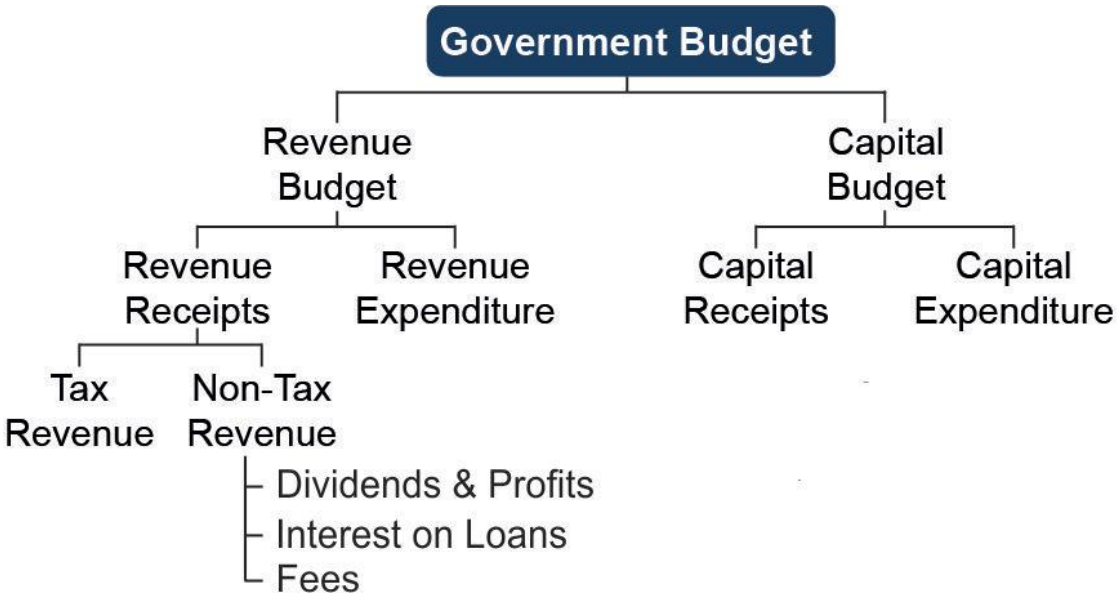
Introduction:

The government budget is the most important policy document of any government, serving as an **annual financial statement of estimated receipts and expenditures**.

- It is essential for **planning and managing the nation's resources** to achieve key macroeconomic objectives like **economic growth, employment generation, price stability, and equitable wealth distribution**.
- For a developing economy, it provides a framework for allocating scarce resources towards development **priorities and social welfare agendas.**

3.1. Components of the Budget

The budget is constitutionally required to distinguish between the Revenue and Capital accounts.



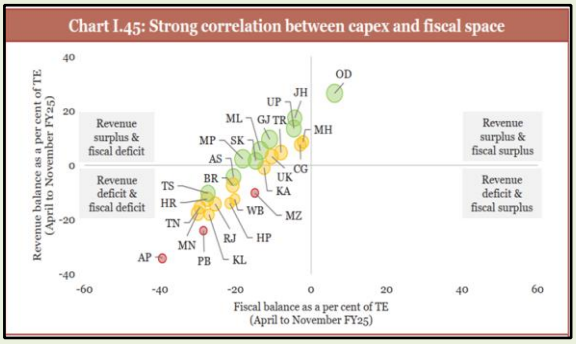
- **Revenue Account:** This account deals with receipts and expenditures **that do not impact the government's assets or liabilities.**
  - **Revenue Receipts:** These are **non-redeemable and non-liability-creating incomes**. They include **Tax Revenue** (Direct and Indirect) and **Non-Tax Revenue** (interest receipts, dividends from PSUs, RBI profits).
  - **Revenue Expenditure:** This is spending on the normal functioning of government, such as **salaries, pensions, interest payments on debt, and subsidies**.

Student Notes:

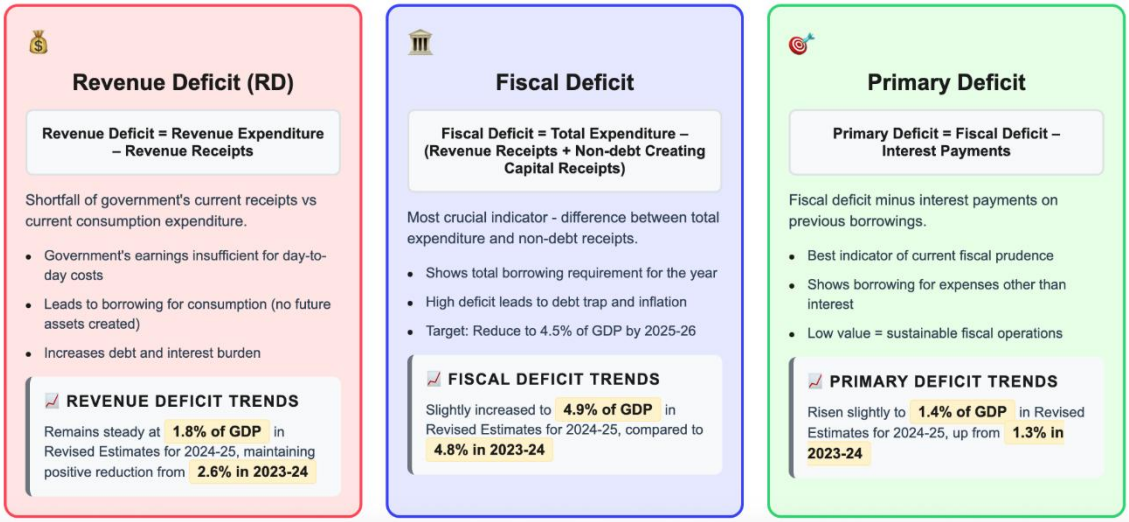
Student Notes:

- **Capital Account:** This account deals with receipts and expenditures that **alter the government's assets and liabilities.**
  - **Capital Receipts:** These either create a liability (e.g., borrowings) or reduce a financial asset (e.g., disinvestment).
  - **Capital Expenditure (Capex):** This is spending on creating long-term productive assets like roads, railways, hospitals, and machinery.
- **Distinguishing Capital & Revenue Budgets :** The fundamental difference lies in the impact on the government's assets and liabilities.
- **Revenue Budget:** Comprises current income and consumption expenditure.
  - A deficit here (Revenue Deficit) implies the government is borrowing to finance its daily operational expenses, which is unsustainable.
  - According to **Economic Survey FY25**, ***revenue surplus*** (or lower revenue deficit) is correlated with higher **capital expenditure.**
- **Capital Budget:** Comprises capital receipts and capital expenditure.
  - It reflects the government's long-term investment strategy and is indicative of a **focus on future growth**.

According to **Economic Survey FY25**, ***revenue surplus*** (or lower revenue deficit) is correlated with higher **capital expenditure.**



3.2. Government Deficits



3.3. Fiscal Policy and Management

3.3.1. Public Expenditure Management

Challenges in the Post-Liberalization Period

Public expenditure management has been a significant challenge for the Government of India in the post-liberalization era. The opening of the economy increased the complexity of financial management.

- Challenges include **ensuring that expenditure leads to desired outcomes**, controlling **wasteful spending**, and balancing development needs with **fiscal discipline**.

Student Notes:

- The increasing reliance on **cesses and surcharges** by the Centre and the demand for higher devolution by states highlight the ongoing friction in expenditure allocation and fiscal federalism.

The Shift in Focus: From Quantity to Quality of Expenditure

According to the Economic Survey FY25, there is a strategic shift in the composition and quality of public expenditure.

- This involves **prioritizing capital expenditure (investment)** over revenue expenditure (consumption).
- This reorientation is expected to yield higher economic returns and **crowd in private** investment.
- **Trend:**
  - **Share of Capex in Total Expenditure:** The share of capital expenditure in total expenditure has risen to **23.3% in BE 2024-25**, up from approximately **12% a decade ago**.
  - **In Union Budget FY26, as support to** States for Infrastructure, an outlay of **₹1.5 lakh crore proposed for the 50-year interest free loans to states** for capital expenditure and incentives for reforms.

3.3.2. Fiscal Responsibility and Budget Management (FRBM) Act

The FRBM Act, 2003, was enacted to introduce **transparency and enforce a prudent fiscal policy** by setting legislative targets for key deficits.

- **Rationale:** To rein in **high fiscal deficits and rising public debt**, thereby ensuring **long-term macroeconomic stability** and **inter-generational equity**.
- Its key objectives include **fiscal discipline**, **debt management**, **long-term sustainability**, **resource allocation**, and **macroeconomic stability**.
- **Original Targets:** For the Centre, the Act mandated **eliminating the revenue deficit** and reducing the **fiscal deficit to 3% of GDP**. States were also required to enact their own FRBM laws.

The 'Escape Clause' and the N.K. Singh Committee Recommendations

The FRBM framework has been reviewed over the years. The N.K. Singh Committee (2016) provided a new roadmap for fiscal consolidation. Key recommendations included:

- **Debt as the primary anchor:** Targeting a government **debt-to-GDP ratio of 60% by 2023** (40% for the Centre, 20% for states).
- **'Escape Clause':** The committee formalized the concept of an **'escape clause'**. This allows the government to deviate from its fiscal targets under specific circumstances, such as **national security, acts of war, national calamity, or a collapse of the economy** with a growth decline of **at least 3% points**. This provides necessary flexibility while maintaining the credibility of the fiscal framework.

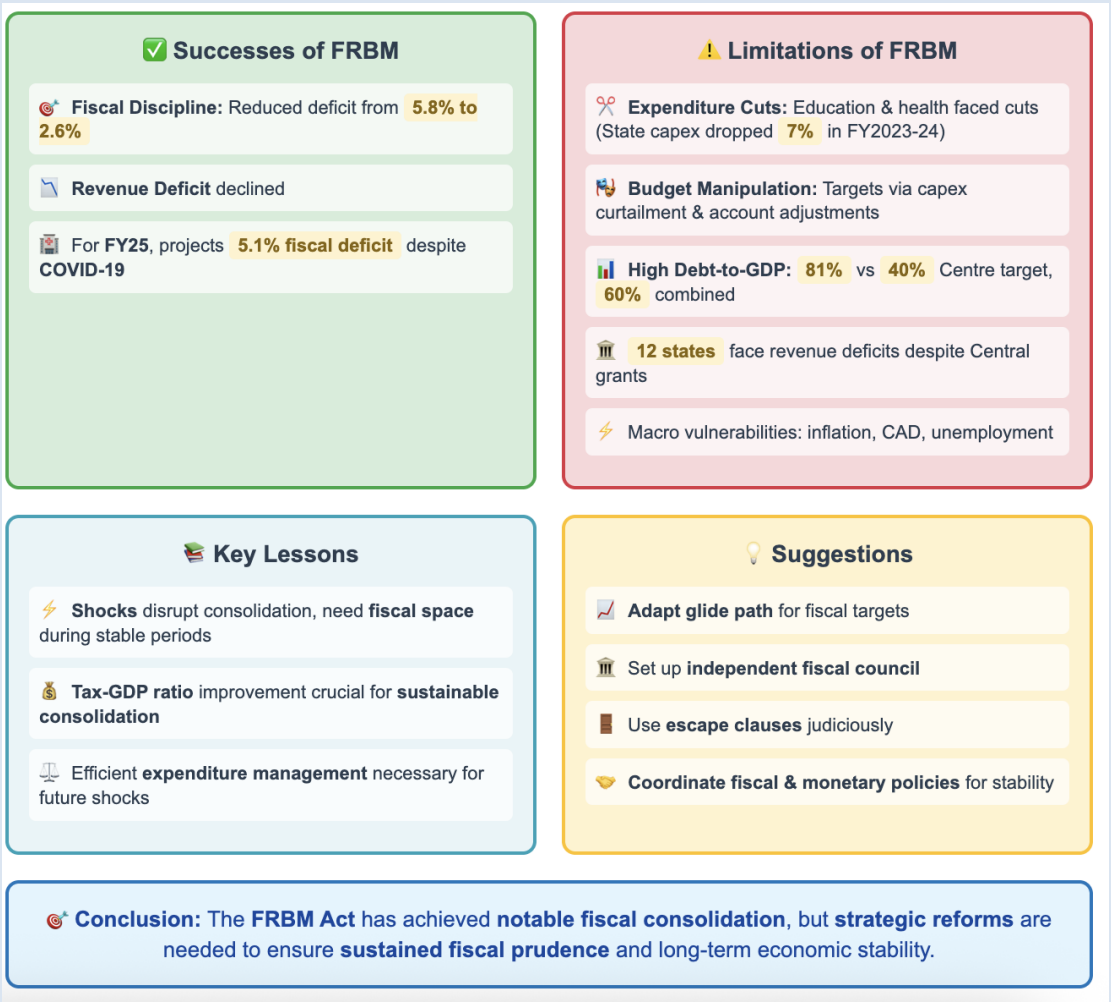
Critical Evaluation of FRBM Act:

India's Fiscal Consolidation Journey:

1. **2003-2008**:	2. **2010-2019**:	3. **2024-2025 (Revised Estimates)**:
• **GFD reduced** from **5.8% to 2.6%**. • Achieved through **expenditure cuts** (2.1%)	• **GFD reduced** to **3.4%** by 2018-19. **Slow consolidation** averaging **0.2% GDP** annually, mainly	• **GFD** at **4.9%** of GDP. • **Debt-to-GDP** ratio at **81%** (significantly above FRBM's target of **60%** for combined accounts).

Student Notes:

and **revenue increase** (1.1%). • **Tax-GDP ratio** increased from **9.1% to 12.1%**.	from **expenditure cuts** (1.5%) and **revenue** (0.2%).	



3.3.3. Goods and Services Tax (GST)

Rationale for GST and Taxes Subsumed

The GST, introduced in 2017, is India's most significant indirect tax reform.

- The primary rationale was to create a **"One Nation, One Tax" system** by subsuming a multitude of central and state indirect taxes (like Central Excise, Service Tax, VAT, Octroi) into a **single, destination-based tax**.
- This was aimed at **simplifying the tax structure**, eliminating the **cascading effect** of taxes (tax on tax), and improving the **ease of doing business**.

Revenue Performance and Impact on Economic Formalization

GST has become a buoyant source of revenue. Average monthly Gross GST collections **doubled to ₹1.66 lakh crore in FY24.**

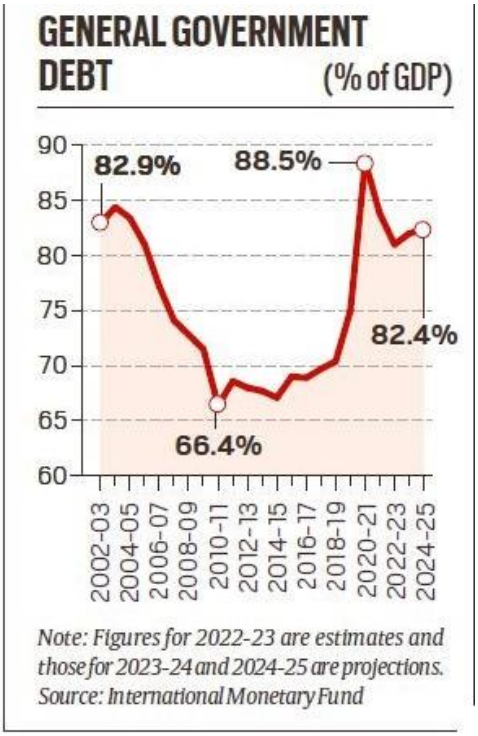
- The reform has also been credited with enhancing economic formalization. Surveys indicate that **94% of industry leaders view the transition to GST as positive**, with 80% believing it has led to **supply-chain optimization**.

Student Notes:

3.3.4. Key Concepts, Their Relevance, and Trends in Fiscal Management

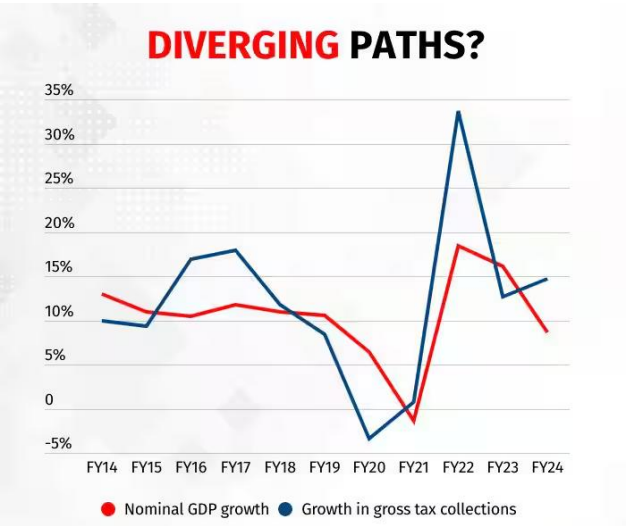
1. Debt-to-GDP Ratio

- **Definition**: The **debt-to-GDP ratio** indicates the total government debt as a percentage of the nation's **GDP**, serving as a gauge of fiscal health and the government's ability to repay its obligations.
- **Relevance**: A high debt-to-GDP ratio can signal fiscal instability and impact **sovereign credit ratings** and **borrowing costs**. It's a key indicator of a country's ability to manage public debt sustainably.
- **Key Developments**:
  - **N.K. Singh Committee Recommendations (2017)**: Proposed a medium-term target of a **60%** debt-to-GDP ratio, with **40%** for the central government and **20%** for state governments.
  - **Current Status**: As of **FY 2024–25**, India's debt-to-GDP ratio stands at **57.1%**, a reduction from **61.4%** in **FY 2020–21**.
  - **Future Targets**: The government aims to reduce the debt-to-GDP ratio to around **50%** by **March 2031**.
- **Trends and Analysis**:
  - The reduction in the debt-to-GDP ratio reflects **fiscal consolidation** efforts. However, India's ratio remains higher than the **global median** for similarly rated countries, which poses challenges in terms of sovereign credit ratings and borrowing costs.
  - Agencies like **Fitch** have highlighted the high **interest-to-revenue ratio** as a constraint for rating upgrades.



2. Tax Buoyancy

- **Definition**: **Tax buoyancy** measures the responsiveness of **tax revenue** to changes in **GDP**, indicating how effectively the tax system captures economic growth.
- **Relevance**: A higher **tax buoyancy** is a positive indicator of an efficient tax system that can increase revenue in line with **economic growth**. It reflects the economy's ability to generate higher tax revenues as GDP increases.



- **Key Developments**:
  - **Current Status**: In **FY 2023–24**, India's **tax buoyancy** was recorded at **2.12**, meaning tax collections grew more than twice as fast as nominal GDP.
  - **Future Projections**: The government aims to maintain a tax buoyancy in the range of **1.2–1.5** to achieve a growth rate of **6.5–7%**.

Student Notes:

- **Trends and Analysis**:
  - A high **tax buoyancy** indicates an effective **tax system**. However, sustaining this buoyancy requires addressing challenges such as **tax evasion**, the **informal economy**, and ensuring that **tax reforms** lead to increased collections.
  - The government's focus on improving **compliance** and streamlining **tax administration** is crucial.

3. Tax Expenditure

- **Definition**: **Tax expenditure** refers to the **revenue the government forgoes** through tax exemptions, deductions, and rebates provided in the tax laws.
  - These are **essentially indirect subsidies** to promote specific economic activities (e.g., deductions on home loans to encourage housing) or support certain taxpayers.
  - While they serve policy objectives, they also complicate the tax system and **reduce the potential tax base**.
- **Relevance**: Tax expenditures can stimulate economic activity and investment but also reduce the **government's revenue base**. Managing tax expenditures is crucial to maintain **fiscal health** while promoting **growth**.
- **Key Developments**:
  - **Current Status**: In **FY 2021–22**, the revenue forgone due to **tax expenditures** was estimated at **1.15% of GDP**, considerably below the global average of **3.8%**.
  - **Transparency**: India has been consistently publishing **tax expenditure reports** as part of its annual budget since **2006**.
- **Trends and Analysis**:
  - While **tax expenditures** can drive **economic growth** and **investment**, they reduce the government's **revenue** base. A careful evaluation is necessary to ensure these provisions achieve their intended objectives without severely impacting **fiscal health**.
  - The government's commitment to **transparency** in reporting tax expenditures is a positive step, but further **evaluation** and **reform** of these expenditures may be needed.

3.4. Other Types of Budgets

3.4.1. Outcome-Based Budgeting

The practice of outcome-based budgeting is being strengthened to enhance accountability.

- Since 2017-18, the traditional Plan/Non-Plan expenditure distinction was abolished, paving the way for a more holistic assessment of spending.
- Ministries now prepare an Outcome Budget which is presented to Parliament, **linking financial outlays for each scheme to specific, measurable performance indicators and deliverables**.

3.4.2. Gender Budgeting

Gender Budgeting is an analytical tool to **examine the government's budget from a gender perspective.** It involves applying a **gender lens** to the entire budgetary process to ensure equitable resource allocation.

- **Key Feature:** The Gender Budget is presented in two parts**: Part A** (100% allocation for women) **and Part B** (schemes where at least 30% of the allocation benefits women).
- **Trend:** The allocation for the Gender Budget in FY25 saw a notable increase, rising to **₹3.09 lakh crore** from ₹2.23 lakh crore in the previous year, underscoring its growing importance. However, a key challenge is to move beyond a **homogenous view** and address the specific needs of **women from marginalized communities**.

Student Notes:

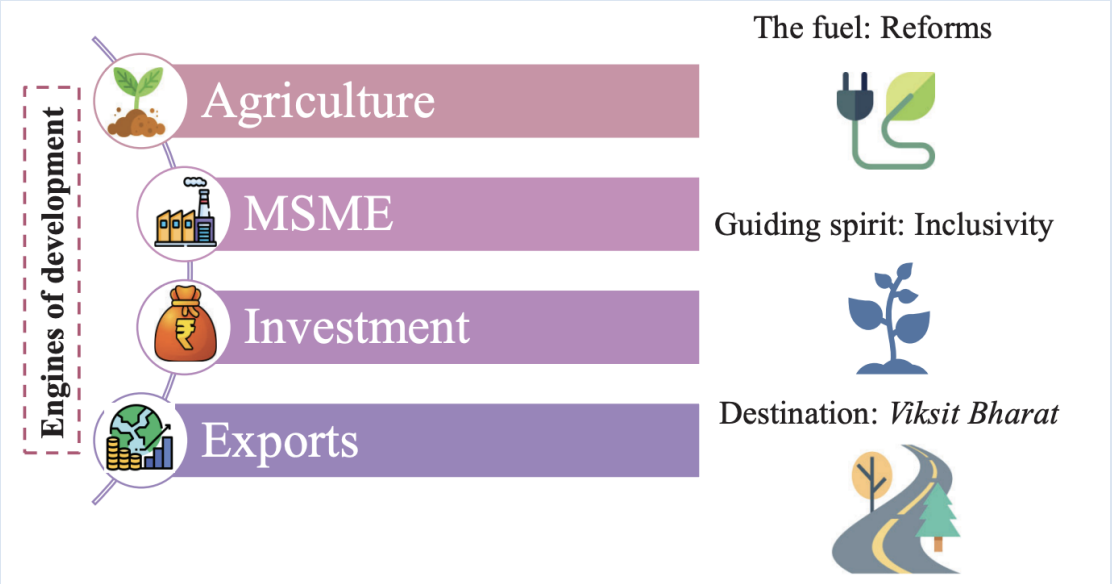
3.4.3. Zero-Based Budgeting

This is a method where **every expense must be justified** for each new period, starting from **a "zero base,"** rather than just adjusting the previous year's budget. The goal is to **phase out obsolete programs** and ensure every rupee of expenditure is rational.

3.5. Contemporary Themes

Union Budget 2025-26: Key Highlights

1. The Union Budget for 2025-26 identified **four primary engines** for development: **Agriculture, MSMEs, Investments, and Exports.** Key announcements reflect this focus:



2. **Agricultural and Rural Development**:
   - **National Mission on High Yielding Seeds** and **Makhana Board in Bihar** to improve agricultural productivity.
   - Enhanced credit services for farmers under **PM Dhan-Dhaanya Krishi Yojana**, covering 100 districts to aid 1.7 crore farmers.
   - Focus on climate-resilient seeds and agricultural sustainability through **Aatmanirbharta in Pulses** and **Mission for Cotton Productivity**.
3. **MSME and Employment**:
   - Introduction of **customized credit cards** for micro enterprises with a ₹5 lakh limit.
   - **Scheme for first-time entrepreneurs**, targeting 5 lakh new businesses, including women and marginalized groups.
   - Emphasis on **labour-intensive sectors**, with a focus on Footwear & Leather, Toy manufacturing, and Food Processing.
4. **Human Resource Development and Innovation**:
   - Establishment of **Atal Tinkering Labs** in 50,000 government schools.
   - Expansion of medical education with 10,000 additional seats and 75,000 over the next 5 years.
   - Focus on **AI-based education** with ₹500 crore allocated for Centres of Excellence.
5. **Infrastructure and Investment**:
   - **Asset Monetization Plan 2025-30** with a target of ₹10 lakh crore.
   - **Support to States for Infrastructure**: ₹1.5 lakh crore allocated for capital expenditure loans to states.

- Investment in **Maritime Development Fund** with ₹25,000 crore for long-term financing.

6. **Financial Sector Reforms**:
   - Raising FDI limit in the **insurance sector** from 74% to 100%.
   - Introduction of **Grameen Credit Score** for rural areas and **revamped KYC registry**.
   - **Rationalization of customs tariffs** and tax reforms targeting ease of business and compliance reduction.
7. **Tax Reforms**:
   - **Personal Income Tax reforms** with focus on the middle class and simplification of the tax system.
   - Introduction of a **new Income Tax Bill** and **rationalization of TDS** procedures to ease compliance.

3.5.1. The 'Capex-Led Growth' Strategy: Rationale and Impact

The strategy of 'Capex-led growth' remains the cornerstone of the government's fiscal policy, aimed at driving economic recovery and long-term expansion. This involves **significantly increasing public investment in infrastructure creation.**

- **Rationale & the Multiplier Effect:** Capital expenditure has a higher multiplier effect on the economy than revenue expenditure.
  - Every rupee invested by the government in creating new assets generates a larger increase in GDP (estimated to be **2.5 to 3 times the initial investment**).
- **Crowding-In Private Investment:** A key objective of the public capex push is to "crowd in" private investment. By creating a modern infrastructure backbone, the government aims to **de-risk projects and improve the business environment,** thereby encouraging the private sector to commit its own capital and restart the private investment cycle.
- **Trend:**
  - **Capex Outlay (FY25):** The Union Budget has allocated **₹11.21 lakh crore** for capital expenditure in 2025-26.
  - **Capex as % of GDP:** This outlay amounts to **3.4% of GDP**, a multi-decade high.
  - **Interest-Free Loans to States:** The scheme providing 50-year interest-free loans to states for their own capex projects has been continued with an outlay of ₹1.3 lakh crore for FY25.

Importance of Private Capex

Private Capex is non-government investment in long-term assets like factories and machinery, which is essential for expanding a nation's productive capacity.

Key Trends & Data

Recent data highlights a positive trend but also points to the need for broader growth.

- **Asset Growth:** Gross Fixed Assets per private enterprise grew from ₹3,152 crore in FY22 to **₹4,183 crore** in FY24.

Private capital expenditure: The missing link in India growth story

Impact of Private Capex on economy

Enhanced Production:
Expanded ability to produce goods

Faster growth:
Catalyst for faster Economic expansion

Employment:
New investments create more jobs.

Tech:
Adopting new technologies improves efficiency & competitiveness

Revenue:
Assets generate long-term revenue

Student Notes:

- **Sectoral Focus:** For FY25, planned capex is dominated by **Manufacturing (43.8%)**, followed by **IT & Communication (15.6%)** and **Transportation (14.0%)**.

How to Boost Private Capex

Addressing the stagnation in private investment is critical. Key suggestions include:

- **Boost Consumer Demand:** Increase purchasing power through productive job creation and by addressing stagnant wages and high food inflation.
- **Accelerate Reforms:** Fast-track critical land and labor reforms to improve the investment climate.
- **Ensure Policy Stability:** A predictable policy environment is crucial for attracting long-term private capital.
- **Maintain Public Spending:** Government must continue its high capex to lead the way until broad-based private investment recovers.

3.5.2. The 16th Finance Commission: ToR and Implications for Fiscal Federalism

The recently constituted 16th Finance Commission (FC), chaired by **Arvind Panagariya**, is set to redefine Centre-State fiscal relations for the period **2026-2031**. Its recommendations will be critical for the future of fiscal federalism in India.

- **Core Mandate:** The FC's primary role is to recommend the formula for the **vertical devolution (Centre to states) of the Union's divisible tax pool** and the **criteria for its horizontal distribution** (among the states).
- **Key Challenges Before the 16th FC:**
  - **Vertical Imbalance & Cesses/Surcharges:** A primary contention is the shrinking divisible pool due to the Centre's increasing reliance on **non-shareable cesses and surcharges**.
    - For instance, while the **15th Finance Commission allocated 41% of the divisible tax pool to states, the actual devolution was only 33.16%** due to this reason. Consequently, many states are demanding an increase in their share to **50% of the gross central taxes**.
  - **Rising State Debt & Populism:** The FC will need to address the deteriorating financial health of many states, which have high debt levels partly due to **populist schemes or "freebies."**
  - **Centre-State Borrowing Conflicts:** The Centre's power to impose a **Net Borrowing Ceiling (NBC) on states** under **Article 293** has become a major point of contention.
  - **Rethinking Horizontal Devolution:** The current formula, which heavily favours states with lower income and larger populations, is seen by some as penalizing them for better performance.
    - Progressive states like **Tamil Nadu** argue they face unique challenges, such as an **aging population and rapid urbanization**, which increase expenditure needs while their tax revenue base is affected by demographic shifts. The 16th FC must balance equity and efficiency.

3.5.3. The Case for a Wealth Tax

Amid rising inequality, the debate on wealth and inheritance taxes has re-emerged in India.

Wealthy Indians under-reporting their income to avoid taxes: study

A paper by Delhi School of Economics director Ram Singh points to anomalies and assesses how their income fares against their wealth

- **Context of Inequality:**
  - A study by **Thomas Piketty** highlighted that in 2022-23, the **top 1% of earners in India controlled 22.6% of the national income and 40.1% of the wealth**, underscoring the scale of wealth concentration.
  - Income tax statistics from the **Central Board of Direct Taxes** and **election candidate filings** show that "a 1% increase in **family wealth** is associated with a more than 0.6% decrease in the reported **income-wealth ratio**," according to the paper.
  - India's **tax system** is **regressive**, with the **wealthy** paying a lower effective **income tax rate**. This is partly due to the **under-reporting** of income from **agricultural** and **commercial properties**, which yield higher returns than **equities** but appear to lower the **income-to-wealth ratio** for their owners.

Arguments in Favor

Addressing Inequality
Top 1% control **40.1% of wealth** (Piketty, 2024), necessitating redistribution to reduce disparities.

Funding Social Programs
Revenue can address **16.4% multidimensional poverty** rate (MPI, 2021), improving India's 134th HDI rank.

Promoting Equity
Oxfam advocates a **"human economy"** where justice drives prosperity, as seen in Scandinavian wealth tax models.

Inclusive Growth
Progressive taxation curbs capital concentration, fostering **broad-based development** for sustainable growth.

Arguments Against

Capital Flight Risk
5,100 millionaires left India in 2023; a wealth tax may deter investment critical for Viksit Bharat's **$30-trillion goal** by 2047.

Administrative Challenges
High collection costs and evasion undermine effectiveness in India's complex economy.

Past Experiences
Proponents of caution point to India's past failures with such taxes. The estate duty was abolished in 1985 due to high administrative costs and extremely low revenue (₹20 crore). Similarly, the wealth tax was abolished in 2015 after yielding only ₹1,008 crore in 2013-14, with collection costs being disproportionately high.

A balanced approach is needed to achieve inclusive growth without undermining investment.

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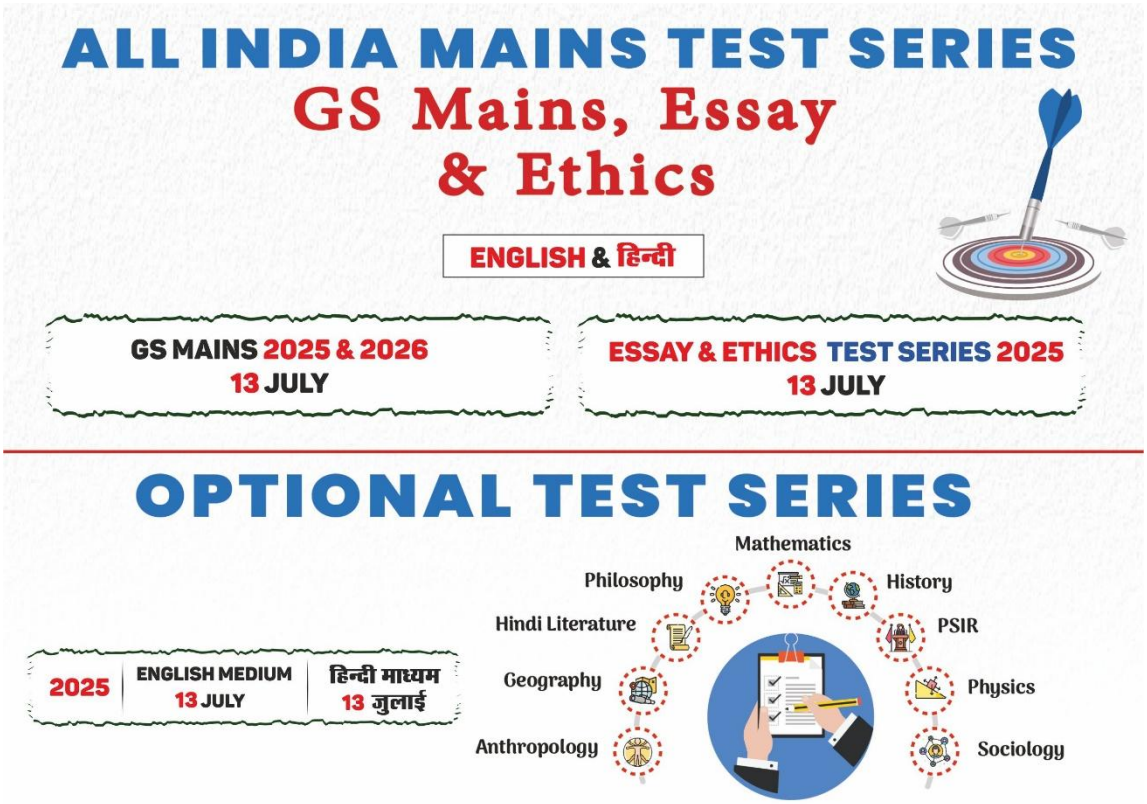
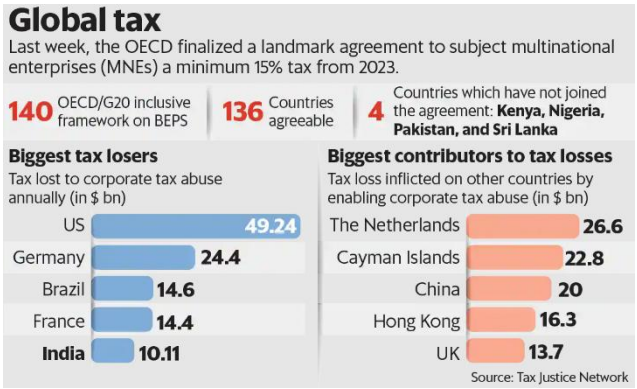


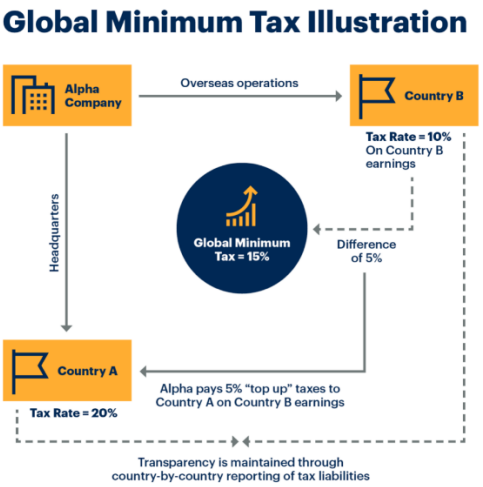
Student Notes:

3.5.4. Global Minimum Tax

The Global Minimum Tax (GMT) is an **internationally agreed-upon minimum corporate tax rate designed to ensure that large MNCs pay a minimum level of tax on their profits,** regardless of where their economic activity occurs or where they choose to declare their profits.

- The proposed rate under the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) is **15%** on profits.





How Does the GMT Help the Economy?

The GMT aims to help the global economy in several ways:

- **Curbing Profit Shifting**: MNCs historically shifted profits to low-tax jurisdictions, reducing their tax burden. The **Global Minimum Tax (GMT)** ensures a minimum tax is paid globally, curbing this practice.
- **Ending the "Race to the Bottom"**: Countries have been lowering corporate tax rates to attract businesses, with the global rate falling from over 40% in the 1980s to below 25% in 2020. The GMT sets a minimum threshold, halting this downward trend.
- **Increasing Tax Revenues**: The GMT is projected to generate an additional **$155-$192 billion** annually, with a 25% minimum rate potentially yielding over **$500 billion** to fund public services.
- **Fairer Taxation**: The GMT ensures large corporations pay their fair share, reducing the tax burden on smaller businesses and individuals.
- **Leveling the Playing Field**: The GMT creates a fairer business environment by reducing tax advantages enjoyed by MNCs with aggressive tax planning.

The GMT addresses profit shifting, halts harmful tax competition, increases global tax revenues, and ensures fairer taxation, promoting a more level playing field for businesses worldwide.

3.5.5. Equalisation Levy

India's **Equalisation Levy (EL)**, or "Google Tax," was a direct tax on the revenue of non-resident digital companies to ensure fair competition and tax firms lacking a physical presence in the country.

- Introduced in 2016 at **6%** on online advertising and expanded in 2020 with a **2%** levy on e-commerce, it aimed to capture a share of the booming digital economy for the Indian exchequer.

However, the unilateral nature of the tax created significant challenges. Key concerns included:

- **Trade Friction:** It led to a formal investigation by the U.S. and threats of **retaliatory tariffs** on Indian goods.

- **Double Taxation:** As the levy was outside standard income tax treaties, foreign companies could not claim tax credits in their home countries, leading to higher compliance burdens.
- **Ambiguity:** The scope was poorly defined, creating confusion over whether it applied to gross transaction values or just operator commissions and inadvertently covering offline services booked online.

To resolve these issues and avoid trade wars, India abolished the levy. This decision aligns with its commitment to the **OECD's global tax framework (Pillar 1)**, which provides a multilateral solution for taxing digital giants. The move provides tax certainty, eases compliance, and normalizes trade relations, particularly with the U.S.

3.5.6. Direct Tax Reforms

India's direct tax landscape has been undergoing significant reforms, particularly with the **aim of simplification, increased compliance, and fostering economic growth**.

Overview of Direct Tax Collections and Fiscal Health

Within direct taxes, there's a notable **dichotomy in growth**:

- **Corporate taxes** have seen a **12.4% growth**.
- **Personal income taxes** have surged by **27.3%**, reflecting a widening of the tax base.

Proposed and Ongoing Reforms to increase compliance

- **New Income Tax Bill:** Aims to provide **tax certainty, simplification, and reduce litigation** by cleaning up obsolete provisions and improving language in the existing Act.
- **Faceless Assessment and Taxpayers' Charter:** Reforms like these, along with **faster processing of returns** and the **Vivad se Vishwas scheme** for dispute settlement, have been introduced over the years to streamline the tax administration.
- **Rationalisation of TDS/TCS Provisions:** Addressing a long-standing demand, the Budget 2025 has focused on simplifying **Tax Deducted at Source (TDS)** and **Tax Collected at Source (TCS)** provisions, including the levy on overseas spends, with a potential to bring down rates while still gathering intelligence.

Shift Towards a New Personal Income Tax Regime

A significant reform is the **new personal income tax regime**. Introduced in Budget 2020 without exemptions, it has been significantly spruced up over subsequent budgets with **higher rebates and friendlier tax slabs/rates**.

Latest Changes (Budget 2025):

Offers a **complete tax rebate for individuals earning up to ₹12 lakh a year**, up from ₹7 lakh previously.

Tweaked tax slabs for those earning over ₹12 lakh, leading to lower tax payments.

From FY26, the **20% tax rate will apply only on incomes over ₹16 lakh a year**, and the **30% rate will kick in at over ₹24 lakh**. In contrast, the old regime's rebate threshold remains at ₹5 lakh, with 20% at ₹5 lakh and 30% at ₹10 lakh.

Growing Adoption: Government data shows that by August 2024, **72% (5.27 crore) of the 7.28 crore tax filers opted for the new regime**, a number expected to grow significantly, potentially rendering the old regime a "relic."

- **Support for IFSC and Startups:**
  - Extension of the date for setting up operations in **International Financial Services Centres (IFSC)** for sectors like ship and aircraft leasing **until 2030**, providing a long-term horizon for investors.
  - Extension of the sunset date for the **startup ecosystem by another five years**.

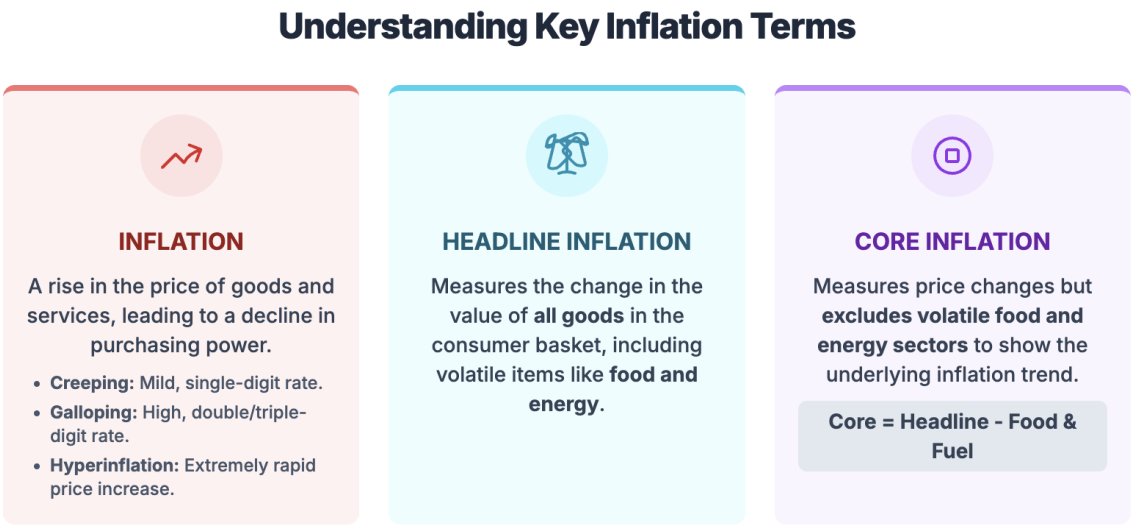
Student Notes:

- **Increased Voluntary Compliance:** Extension of the time limit to file **updated tax returns up to four years**.
- **Harmonisation of Provisions:** Introducing compliance obligations for **crypto assets** and harmonising provisions related to **significant economic presence in India**.
- **Arm's-Length Price Determination:** Rationalisation of provisions for **arm's-length price determination** to enhance certainty and reduce litigation.

3.5.7. Inflation Management In India

The **Ministry of Statistics & Programme Implementation (MoSPI)** reported that the **Consumer Price Index (CPI)** or the **retail inflation** surged to **6.2%** in **October 2024**, and the **Food inflation**, as per the **Consumer Food Price Index (CFPI)**, rose to **10.87%**.

- This marked the highest inflation rate since **August 2023**, surpassing the **Reserve Bank of India's (RBI)** upper tolerance limit of **6%**.
- Despite **global inflation** easing, **India** faces persistent **price pressures**, leading experts to reassess **forecasts** and **interest rate impacts**.



Inflation Management in India:

The **Monetary Policy Framework Agreement (MPFA)** between the **Government of India** and the **RBI** aims to maintain **price stability** while considering **growth**.

According to this agreement, if **inflation** stays outside the **2% to 6%** range for **three consecutive quarters**, the **RBI** must report to the **central government**, explaining the reasons, proposing corrective actions, and estimating when inflation will return to the **target range**.

Inflation in India is primarily managed by the **Reserve Bank of India (RBI)** and the **Government of India** through a combination of **monetary** and **fiscal** policies.

- **RBI (Monetary Policy)**:
  - **Inflation Targeting**: The RBI aims to maintain inflation within a target range of **4% ± 2%**.
  - **Interest Rate Adjustments**: The RBI uses **repo rates** and **reverse repo rates** to control inflation by managing demand and liquidity.
  - **Open Market Operations**: It buys and sells government securities to control money supply.
- **Government (Fiscal Policy)**:
  - **Expenditure Control**: The government regulates public spending to avoid inflationary pressures.

Student Notes:

- **Subsidies**: It provides subsidies to control prices of essential goods like food and fuel.
- **Supply-Side Measures**:
  - **Agricultural Policies**: Boosting agricultural output to manage food inflation.
  - **Infrastructure Development**: Reducing supply chain bottlenecks.
- **External Factors**:
  - **Exchange Rate Management**: The RBI stabilizes the rupee to control import prices.
  - **Tariffs and Taxes**: The government adjusts duties to manage the cost of imports.

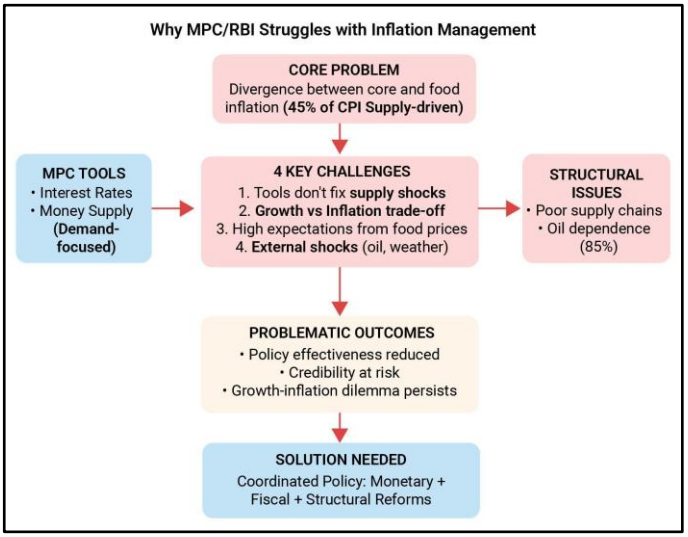
India's inflation management is challenging due to two main issues:

- First, a **noticeable difference between how core prices (non-food, non-fuel) and food prices behave**, and
- Second, the economy's inherent weaknesses and **susceptibility to external global events**.

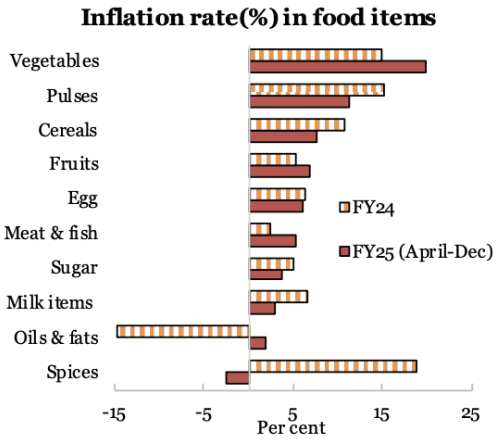
Together, these factors create a difficult situation for the Monetary Policy Committee when making policy decisions.

Divergence Between Core and Food Components

1. **Moderating Core Inflation** **Core inflation** has shown a softening trend, falling to a **decade-low**, largely due to two primary factors:
   - **Easing Input Costs**: **Deflationary trends** in the **Wholesale Price Index (WPI)** in **FY24** (-0.7%) and its subdued level in **FY25** have led to lower input and raw material prices for manufacturers. This allowed them to absorb costs and moderate final product prices, contributing to lower **core inflation**.



   - **Effective Monetary Tightening**: The **MPC's** decision to raise and hold the **policy repo rate** at **6.5%** has been successful in curbing **demand-side pressures**. This policy stance has helped anchor **inflationary expectations** in the **services** and **manufacturing sectors** and cooled the economy from post-pandemic overheating.
2. **Persistent Food Price Volatility:** In stark contrast to core inflation, **food inflation** has remained elevated and volatile, rising to **8.4%** in **FY25** (April-December). This is not broad-based but is driven by sharp price spikes in a few specific items:
   - **Concentrated Supply Shocks**: A small group of items, particularly **vegetables** and **pulses**, have been the main culprits. Despite having a combined weight of just **8.42%** in the **Consumer Price Index (CPI)** basket, they contributed a disproportionately high **32.3%** to overall inflation in **FY25**.
   - **Adverse Weather Events**: The increasing frequency of **extreme weather events**, such as **heat waves** and **unseasonal rains**, has

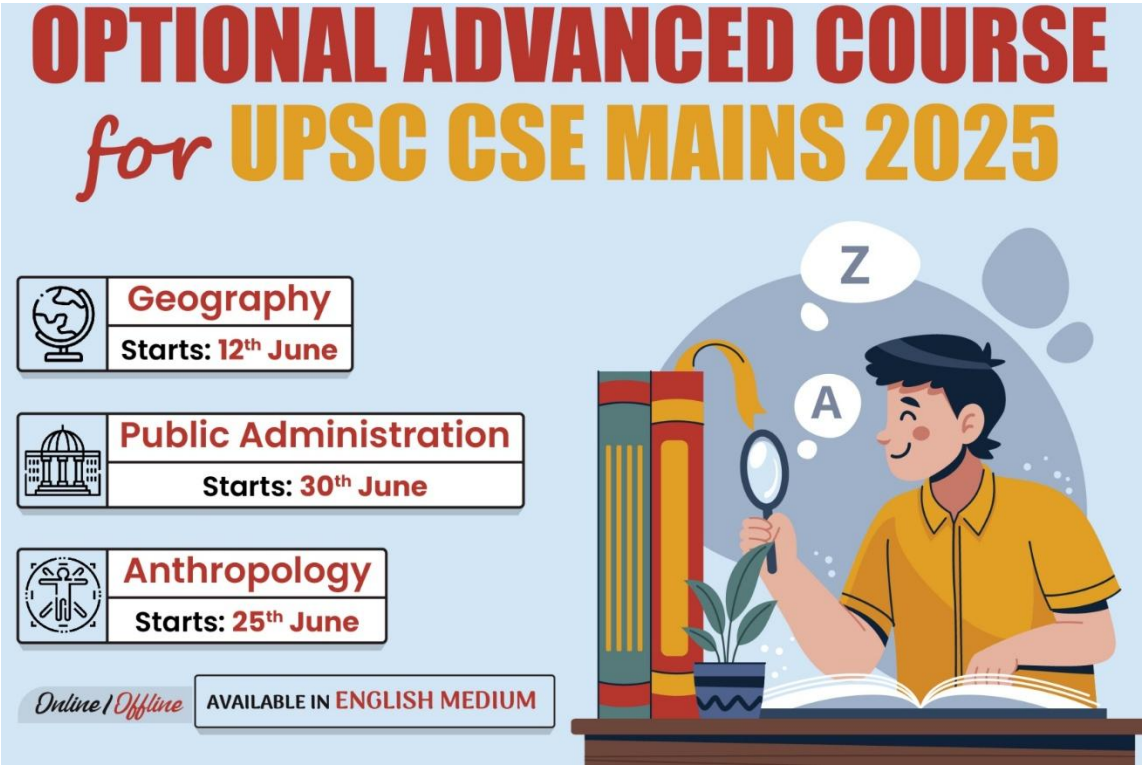


repeatedly disrupted the supply chains of perishable horticultural crops like **tomatoes**, **onions**, and **potatoes (TOP)**. This has led to sudden and sharp price increases.

- **Structural Supply Gaps**: For commodities like **pulses**, a persistent structural gap exists between **domestic demand** and **supply**. This makes their prices highly susceptible to production shortfalls, as exemplified by deficient production of **tur dal** in the last two years, leading to sustained price pressures.

The inflation dichotomy demands for **coordinated fiscal and supply-side interventions** from the government.

Student Notes:



Student Notes:

4. EFFECTS OF LIBERALIZATION ON THE ECONOMY, CHANGES IN INDUSTRIAL POLICY AND THEIR EFFECTS ON INDUSTRIAL GROWTH

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. Discuss the merits and demerits of the four 'Labour Codes' in the context of labour market reforms in India. What has been the progress so far in this regard? (2024, 15 Marks) **2.** Faster economic growth requires increased share of the manufacturing sector in GDP, particularly of MSMEs. Comment on the present policies of the Government in this regard. (2023, 10 Marks) **3.** What is the status of digitalization in the Indian economy? Examine the problems faced in this regard and suggest improvements. (2023, 10 Marks) **4.** "Industrial growth rate has lagged-behind in the overall growth of Gross-Domestic-product (GDP) in the post-reform period." Give reasons. How far are the recent changes in Industrial-policy capable of increasing the industrial growth rate? (2017, 15 marks) **5.** Account for the failure of the manufacturing sector in achieving the goal of labor-intensive exports. Suggest measures for more labor-intensive rather than capital – intensive exports. (2017, 10 marks) **6.** There is a clear acknowledgement that Special Economic Zones (SEZs) are the tools of industrial development, manufacturing and exports. Recognizing this potential, the whole instrumentality of SEZs requires augmentation. Discuss the issues plaguing the success of SEZs with respect to taxation, governing	This theme is about India's industrial journey, particularly its post-1991 struggles and recent attempts at a revival. The questions are largely diagnostic, asking you to identify deep-rooted problems and evaluate the government's solutions. A central puzzle the examiner wants you to solve is why India's **manufacturing sector has underperformed**, especially in creating jobs, despite decades of reforms. **Q.** "**Industrial growth rate has lagged-behind** in the overall growth of Gross-Domestic-product (GDP) in the post-reform period." Give reasons. How far are the recent changes in Industrial-policy capable of increasing the industrial growth rate? (2017, 15 marks) The focus is squarely on the critical evaluation of recent government initiatives aimed at kick-starting industrial growth. You are expected to have a balanced view on their potential and their limitations. This includes: • **Specific industrial drivers** like MSMEs. **Q.** Faster economic growth requires increased share of the **manufacturing sector** in GDP, particularly of **MSMEs**. Comment on the present policies of the Government in this regard. (2023, 10 Marks) • **Factor market reforms**, especially the new Labour Codes. **Q.** Discuss the merits and demerits of the four **'Labour Codes'** in the context of labour market reforms in India. What has been the progress so far in this regard? (2024, 15 Marks) • The overall ecosystem for business, including the **digital economy**. **Q.** What is the status of **digitalization** in the Indian economy? Examine the problems faced in this regard and suggest improvements. (2023, 10 Marks)

laws and administration. (2015, 10 marks) **7.** Examine the impact of liberalization on companies owned by Indians. Are they competing with the MNCs satisfactorily? Discuss. (2013, 10 marks)	**How to Answer Questions in this Theme:** • When diagnosing the **failure of manufacturing**, structure your answer by categorizing the reasons into clear headings: **1. Structural Impediments** (land, labour, infrastructure), **2. Policy-related Issues** (e.g., inverted duty structures), and **3. Global Factors** (e.g., competition from imports). • When **evaluating a specific policy** (like Labour Codes or MSME support), present a balanced **"merits and demerits"** or **"pros and cons"** analysis. For instance, discuss how a policy helps 'ease of doing business' but also address the concerns of other stakeholders, such as workers. • Conclude with **constructive, forward-looking suggestions** to make the policies more effective.

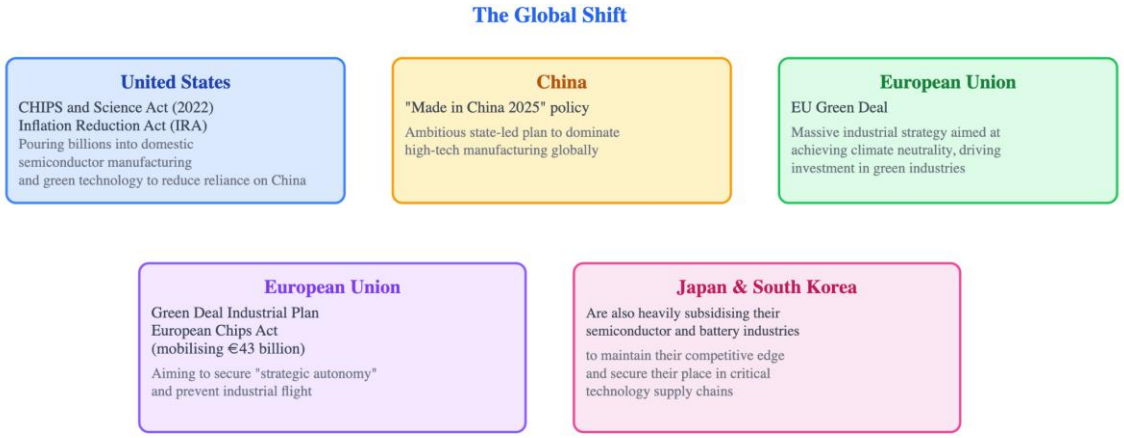
Student Notes:

4.1. Revival of Industrial Policy in a Changing Global Landscape

For decades, **"industrial policy"** was seen as a relic of the past, associated with **protectionism** and **state failure**. The dominant global view favoured **free markets** and minimal **government intervention**.

Today, that long-held consensus favouring free markets and minimal state intervention (the "**Washington Consensus**") has shattered. **Industrial policy** is back at the forefront of global economic debate, driven by **geopolitics**, **supply chain vulnerabilities**, and the race for **technological supremacy**.

- **The Global Shift:** Nations are no longer leaving industrial development to market forces alone. There is a clear move towards strategic state intervention to build domestic capabilities in critical sectors.



- **What is Driving this Global Shift?**
  - **Geopolitical Insecurity:** The US-China rivalry has turned technology into a battlefield. The use of export controls on advanced chips is a clear example of technology being used as a foreign policy tool.
  - **Supply Chain Resilience:** The COVID-19 pandemic caused a "**supply chain shock**," revealing extreme dependencies. For example, the global auto industry lost an estimated **$210 billion** in revenue in 2021 due to a shortage of basic semiconductor chips. This has forced a rethink from "**just-in-time**" to "**just-in-case**" supply chain models.

Student Notes:

- **The Green Technology Race:** The transition to a green economy is creating massive new markets. Countries are using industrial policy to build domestic champions in solar, wind, green hydrogen, and battery technologies, aiming to capture the jobs and economic benefits of this transition.

India's 'Atmanirbhar Bharat' in this New Context

Atma Nirbhar Bharat (Self-Reliant India) is its own version of this new industrial policy. It is a transformative initiative launched by the Indian government in May 2020, aiming to boost India's **economic resilience** and **self-reliance**.

- **Key Focus Areas**:
  - **Reducing Import Dependence**: Encourages **local manufacturing** and **self-sufficiency**.
  - **Stimulus Package**: **₹20 lakh crore** allocated to support various sectors like **MSMEs**, **agriculture**, **healthcare**, and **infrastructure**.
  - **Promoting Innovation**: Fosters **entrepreneurship** and technological **advancements** in key industries.
  - **Make in India**: Reinforces the **domestic manufacturing sector** to compete globally.

The initiative is designed to make India a **global economic powerhouse**, to move up the value chain from simple assembly to **deep manufacturing**, increase **domestic value addition**, and position India as a trusted and **reliable partner in global supply chains.**

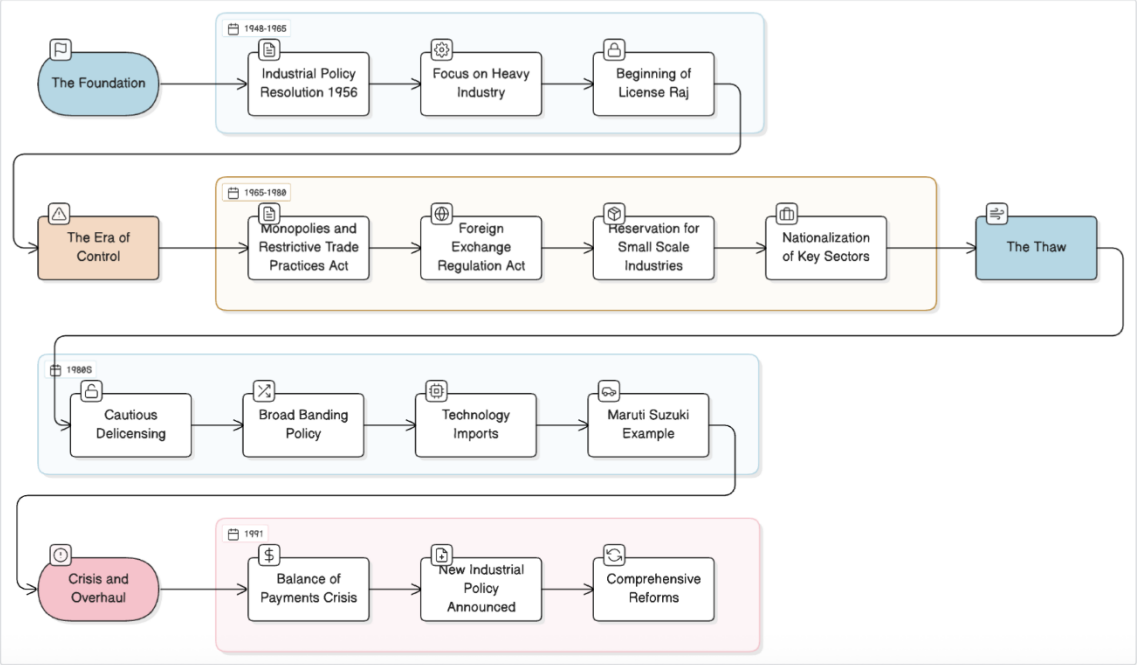
4.2. History of India's Industrial Policy

India's industrial policy has evolved significantly since 1947, moving from total state control to a more market-oriented system.

- **The Early Years (1948-1965): State-Led Heavy Industrialization**
  - **Industrial Policy Resolution (IPR) 1948:** Divided industries into **strategic public sectors**, **joint sectors**, and the **private sector**.
  - **IPR 1956 (The "Economic Constitution"):** This was the definitive blueprint of the Nehru-Mahalanobis era.
    - **Three Schedules:** It created three schedules of industries.
    - **Schedule A** (17 industries like atomic energy, defence, iron & steel) was the exclusive monopoly of the state. **Schedule B** (12 industries like aluminum, machine tools) was progressively state-owned. **Schedule C** was left for the private sector but under state control.
    - **The License Raj:** Under **Industries (Development & Regulation) Act, 1951,** a license was required for almost any industrial activity. This gave the government absolute control.
- **The Mid-Period (1965-1980): Consolidation and Stagnation**
  - **Monopolies and Restrictive Trade Practices (MRTP) Act, 1969:** It placed even more restrictions on large business houses, requiring separate approvals for any substantial investment.
  - **Foreign Exchange Regulation Act (FERA), 1973:** This law severely restricted foreign investment, limiting foreign equity to 40%. This led to the exit of several MNCs, most famously Coca-Cola and IBM.
  - **Rise of Small-Scale Industries (SSI) Reservation:** A large number of products were reserved for exclusive production by the SSI sector. While intended to promote employment, this policy **crippled economies of scale** and technological upgradation.
  - **Outcome:** This period saw a deepening of state control, leading to what was termed the "Hindu Rate of Growth" of around 3.5%. Industrial growth was slow, and inefficiency was rampant.

Student Notes:

- **The 1980s: The First Stirrings of Liberalization**:
  Recognizing the failures of the previous decades, the government began a process of cautious, piecemeal reforms.
  - **Delicensing:** Several industries were delicensed, and the asset limit for companies under the MRTP Act was raised, freeing them from needing constant government approval.
  - **"Broad-banding":** Firms were allowed **flexibility to change their product mix** within the same category without a new license (e.g., a vehicle manufacturer could produce cars, trucks, or two-wheelers).
  - **Modernization Push:** The government **selectively liberalized** technology and capital goods **imports** to help industries like automobiles and electronics modernize. The collaboration between Suzuki and Maruti to produce the Maruti 800 is a classic example of this era.
  - **Result:** These "pro-business" (as opposed to "pro-market") reforms led to a notable acceleration in industrial growth during the 1980s, setting the stage for the more comprehensive reforms of 1991.



- **Outcomes: A Diversified but Inefficient Base**
  - **Achievements:**
    - A diversified industrial structure was created. India developed capabilities in a wide range of sectors, from steel to engineering.
    - A strong foundation for technical education and R&D was laid (e.g., IITs, CSIR labs).
  - **Failures:**
    - **Inefficiency and Low Productivity:** Sheltered from competition, both public and private firms had little incentive to innovate or improve efficiency. Quality was often poor and costs were high.
    - **"Hindu Rate of Growth":** The economy stagnated, growing at an average of only ~3.5% per year.
    - **Scarcity and Corruption:** The License Raj created artificial scarcities and led to widespread corruption and rent-seeking.
    - **Neglect of Labor-Intensive Sectors:** The focus on heavy industry meant that job-creating sectors like textiles, footwear, and toys were neglected, limiting employment growth.

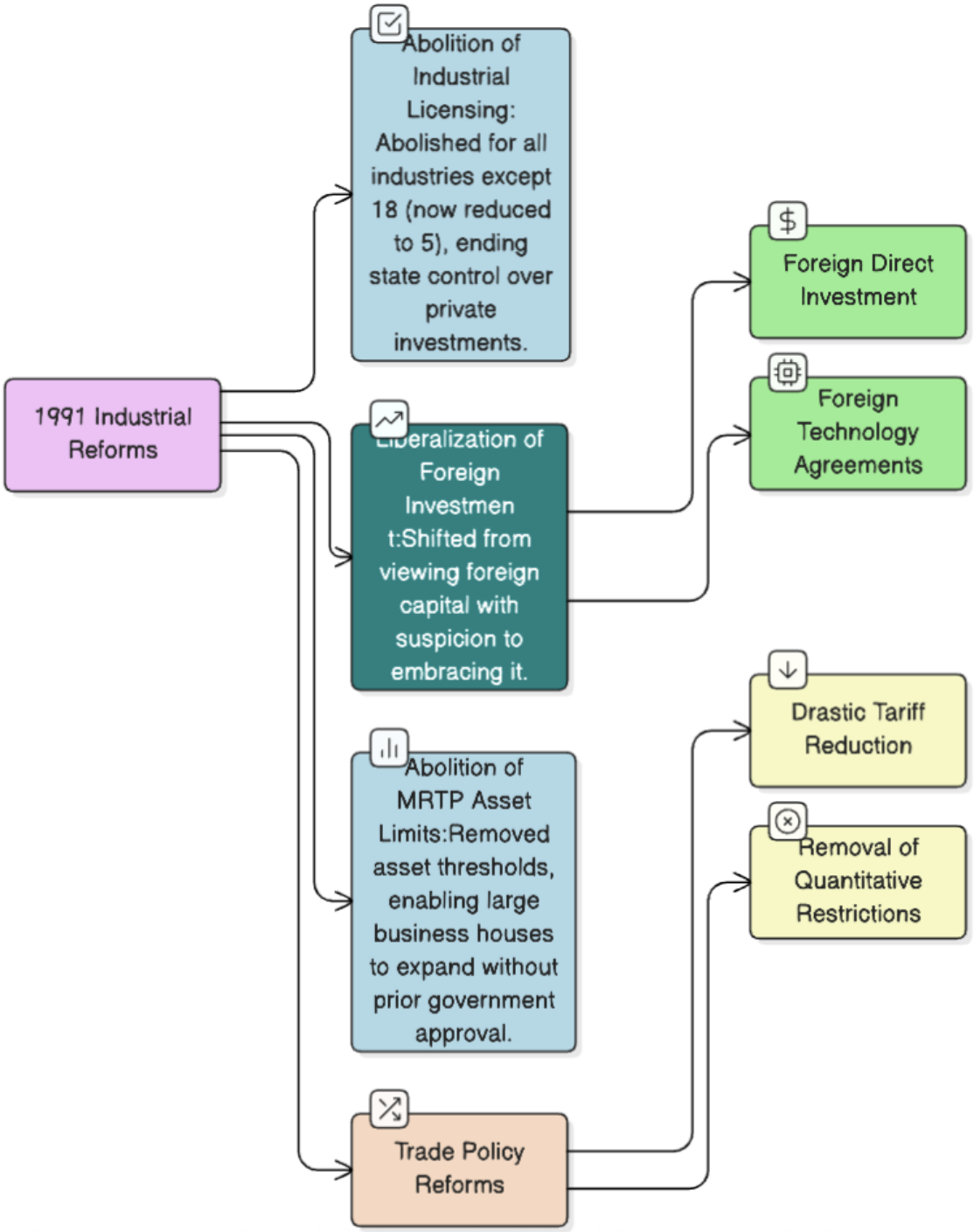
By 1991, this inward-looking model had led to a severe balance of payments crisis, forcing India to undertake radical economic reforms.

Student Notes:

4.3. The 1991 Reforms and Their Sectoral Impact

The **balance of payments crisis** of 1991 compelled India to transition from an inward-looking model to a new economic framework centered around **Liberalization, Privatization, and Globalization (LPG)**. The **New Industrial Policy (NIP)** of 1991 was pivotal in this shift, aiming to replace **state control** with **market forces**.

4.3.1. Core Elements of the 1991 Industrial Reforms



Student Notes:

4.3.2. Sectoral Consequences of Liberalization

Manufacturing: The Underperformer	Services: The Real Engine of Growth	Agriculture: The Neglected Backbone
• The sector saw an initial growth spurt as firms were freed from licensing, but this was short-lived. • The share of manufacturing in GDP remained stubbornly stuck at around **15-16%** for nearly two decades post-reforms, failing to become the expected engine of growth. • Intense competition from cheap imports, especially after **China's entry into the WTO in 2001**, severely hurt many **SMEs**. • Indian firms struggled to compete with **MNCs** in terms of capital, technology, and scale. For example, in the consumer goods sector, established Indian brands lost significant market share to foreign players.	• The services sector, especially **IT and BPO**, became the primary driver of post-reform growth, with its share in GDP rising from **44% in 1991 to over 55%** today. • It benefited from a **light regulatory environment**, a large pool of **English-speaking skilled labour**, and the global trend of **outsourcing**. • However, this led to a **"jobless growth"** pattern. The services boom created high-wage jobs for a skilled minority but failed to absorb the vast low-skilled workforce from agriculture, thus widening **income inequality**.	• The sector suffered from a sharp decline in **public investment** in areas like irrigation and research, as the government focused on fiscal discipline. • Opening up to international trade exposed farmers to global **price volatility**. For example, cheap imports of edible oils devastated domestic oilseed producers. • Rising **input costs** and stagnant productivity led to widespread **agrarian distress** and a crisis of farmer livelihoods. • With manufacturing failing to create jobs, agriculture remained overburdened with surplus labour (nearly **50%** of the workforce), leading to widespread **disguised unemployment**.

4.3.3. Why Manufacturing Growth Lagged?

The failure of manufacturing to take off was due to deep-seated structural problems that the 1991 reforms either ignored or failed to resolve.

- **Unresolved Factor Market Rigidities:**
  - **Restrictive Labour Laws:** A web of complex and archaic laws, especially the **Industrial Disputes Act of 1947**, made it difficult for firms with over 100 workers to retrench staff. This heavily discouraged formal hiring and incentivized firms to remain small or use informal/contract labour to stay below the threshold.
  - **Difficult Land Acquisition:** The **Land Acquisition Act of 1894** was outdated, leading to prolonged disputes, litigation, and extreme delays in acquiring land for new industrial projects.
  - **A Void in Long-Term Finance:** The dismantling of **Development Finance Institutions (DFIs)** like ICICI and IDBI, which provided crucial long-term project finance, created a **credit vacuum**. Commercial banks, with their focus on short-term lending, were unable to fill this gap for long-gestation industrial projects.
- **Persistent Infrastructure Deficits:**
  - **High Logistics Costs:** Poor roads, congested ports, and an inefficient rail network meant logistics costs in India were as high as **13-14% of GDP**, compared to **8-10%** in developed nations and China, making Indian goods uncompetitive.

Student Notes:

- **Unreliable and Costly Power:** Chronic power shortages and high electricity tariffs remained a major operational bottleneck, particularly for energy-intensive manufacturing.

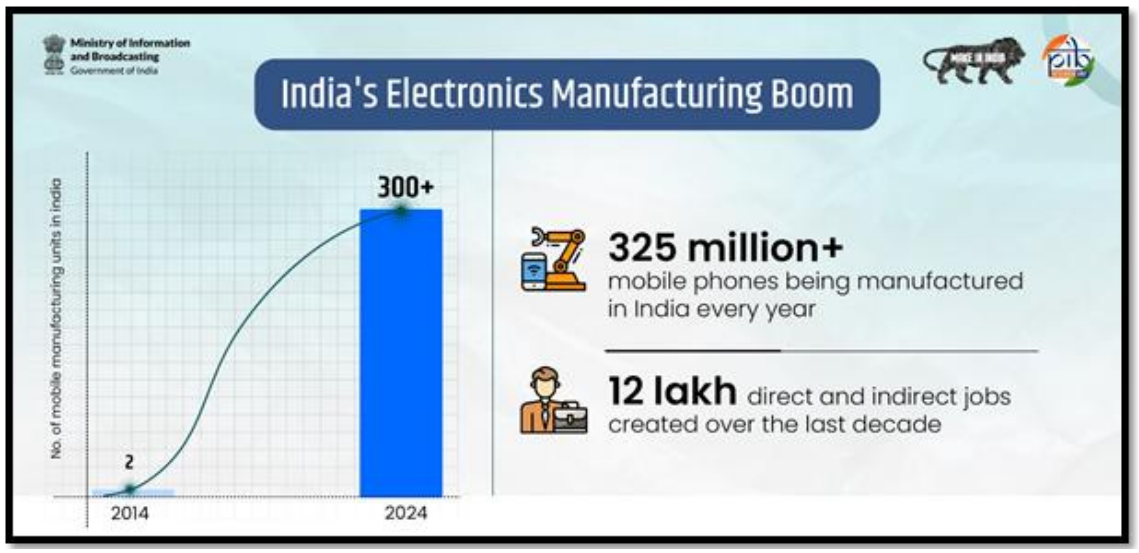
- **Flaws in the Policy and Trade Regime:**
  - **Inverted Duty Structure:** This was a major policy anomaly where tariffs on finished goods were lower than on the imported raw materials needed to produce them. For example, this made importing far cheaper than manufacturing in India.
  - **Reservation for Small-Scale Industries (SSI):** The policy of reserving hundreds of products for exclusive manufacture by the SSI sector (fully abolished only in 2015) was a critical blunder. It prevented firms in labour-intensive sectors like garments, leather goods, and toys from achieving **economies of scale**, investing in modern technology, and competing in global markets.
- **Weak Integration into Global Value Chains (GVCs):**
  - Unlike **China**, which became the "**world's factory**," India failed to effectively integrate into GVCs. Integration was often limited to **low-value assembly** work with high import intensity and minimal domestic value addition. For example, in mobile phone manufacturing, most high-value components (processors, displays, memory) were imported, with only final assembly done in India.

4.4. The Contemporary Strategy for Industrial Growth

Recognizing the persistent structural weaknesses and new global realities, India has embarked on a multi-pronged strategy to catalyse **"deep industrialization."** This section delves into the key policy instruments and their performance.

4.4.1. The "Make in India" Initiative and National Manufacturing Mission

- Launched in 2014, **Make in India** is the government's flagship program to transform the country into a global design and manufacturing powerhouse.
- Its primary ambition is to increase the share of manufacturing in GDP to **25%** and create **100 million** new jobs in the sector.
- The strategy focuses on **27 key sectors** and is built on four pillars: **New Processes** (improving ease of doing business), **New Infrastructure**, **New Sectors**, and a **New Mindset** (shifting the government's role from regulator to facilitator).
- While a powerful statement of intent, its success is contingent on the effective implementation of subsequent, more targeted policies like PLI and Gati Shakti.



Student Notes:

National Manufacturing Mission

The **National Manufacturing Mission (NMM)**, announced in the **Union Budget 2025-2**6, aims to strengthen the **'Make in India'** initiative by increasing the manufacturing sector's GDP contribution to **25%**, fostering employment, and integrating India into global value chains to become a manufacturing powerhouse.

Key Features

- Creation of an **empowered body** to lead policy and implementation.
- Focus on **sector-specific clusters** like **automotive** to drive growth.
- Introduction of **fiscal incentives**, including **Production-Linked Incentives (PLIs)**.
- Enhancement of **ease of doing business** to reduce regulatory barriers.
- Facilitating a **future-ready workforce** for in-demand jobs and making India a **global hub for toy manufacturing** and climate-friendly development.
- Support for **MSMEs** with targeted financial and policy measures.
- Promotion of **technology adoption** and **quality control** through **Quality Control Orders (QCOs)**.

Potential Impact

- **Attract global anchor players**, enhancing India's position in global manufacturing.
- **Deepen the domestic component ecosystem**, reducing reliance on imports in solar PV cells, EV batteries, motors and controllers, electrolysers, wind turbines, very high voltage transmission equipment, and grid-scale batteries.
- **Boost exports**, improving India's global market share.
- Address **cost disadvantages** and **regulatory challenges** to enhance competitiveness.
- Make Indian manufacturing **globally competitive** and **resilient**.

4.4.2. The Production Linked Incentive (PLI) Schemes

- The **PLI scheme** is the primary policy instrument of the '**Atmanirbhar Bharat**' strategy, designed to attract large-scale investment and technology in 14 strategic sectors.
- **Mechanism:** It offers a fiscal incentive, typically **4-6%**, on incremental sales of goods manufactured domestically.
- **Sector Specific Key Successes:**
  - **Electronics Manufacturing:** This has been the standout success, as highlighted in the graphics of Make in India section.
  - **Pharmaceuticals, Medical Devices, and Bulk Drugs**: India became the **3rd largest** global player in pharmaceuticals, with **50%** of production exported and reduced reliance on imports like **Penicillin G**.
  - **Automotive Industry**: The automotive **PLI scheme** attracted **US$ 8.15 billion** in investment, strengthening India's position globally with over **115 companies** applying.
  - **Renewable Energy and Solar PV**: The **PLI scheme** for solar PV aims to build **65 GW** capacity with **US$ 2.35 billion**, driving innovation and job creation.
  - **Telecom and Networking Products**: Achieved **60%** import substitution in telecom products, making India a major exporter of **4G** and **5G** equipment.
  - **Drones and Drone Components**: **Turnover** in drones increased seven-fold under the **PLI scheme**, making India a global leader in drone manufacturing.

- **Persistent Challenges:**
  - **Under-utilization of Funds:** A key criticism is the slow disbursal of incentives, indicating implementation bottlenecks.
  - **Muted Performance in Key Sectors:** Critical sectors like high-efficiency solar modules, advanced chemistry cell (ACC) batteries, textiles, and specialty steel have seen a muted response from investors.
  - **Capital-Intensive Bias:** The scheme has been criticized for its disproportionate focus on capital-intensive industries, continuing the historical neglect of crucial job-creating, labour-intensive sectors like textiles, leather, and footwear.

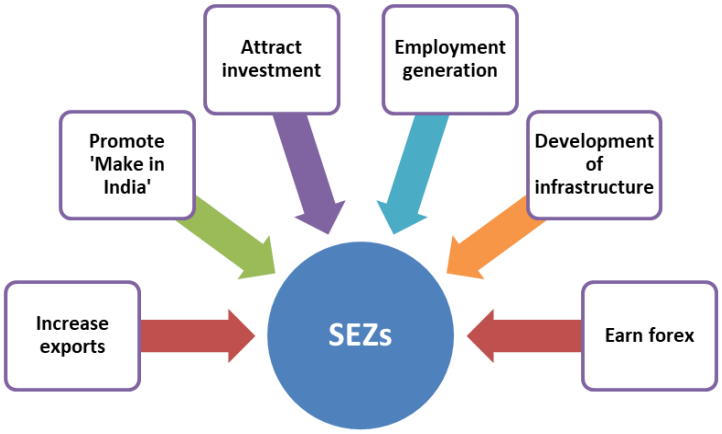
Expert Opinion: A Word of Caution on PLI

- **Dr. Raghuram Rajan (Former RBI Governor):** Cautions that PLI could become a form of protectionism, boosting assembly without significant domestic value addition.
- **Arvind Panagariya (Chairman, 16th Finance Commission):** Has argued that the scheme should be highly selective and time-bound to avoid creating long-term dependencies on subsidies.

4.4.3. Reforming Investment Enclaves: SEZ Amendment Bill 2024

Special Economic Zones:

- "A SEZ is a designated duty-free enclave to be **treated as foreign territory** for the purpose of trade operations and duties and tariffs."
- It is a geographical region that has economic laws that are more liberal than a country's usual economic laws.



SEZ Legacy and Challenges: The **SEZ Act of 2005** drove exports (**$159 billion** in FY24) and employment (**3.2 million jobs** by 2025) but facing hurdles such as:

- **Tax Policy Shifts**: The 2011 imposition of **Minimum Alternate Tax (MAT)** and withdrawal of **income tax exemptions** post-2020 reduced fiscal appeal.
- **WTO Compliance**: **Export-linked subsidies** faced challenges for being trade-distorting.

Student Notes:

- **Land Under-utilization**: Over **30% of acquired SEZ land** remains unused due to regulatory and infrastructural bottlenecks.

The Stalled DESH Bill and SEZ Amendment Bill 2024:

- The **Development of Enterprise and Service Hubs (DESH) Bill**, proposed in 2022, aimed to overhaul **SEZs** but was stalled due to **Finance Ministry** objections over **tax concessions** and the removal of **Net Foreign Exchange (NFE)** requirements.
- The **SEZ Amendment Bill 2024**, awaiting **Cabinet approval** as of July 2025, offers a simpler reform path. Key features include:
  - **Domestic Market Access**: Allows **SEZ units** to sell in the **Domestic Tariff Area (DTA)** with duties on **inputs** rather than **finished goods**, promoting **value addition**.
  - **Retention of NFE**: Maintains the **positive NFE requirement** to ensure export focus, unlike the **DESH Bill**.
  - **Streamlined Approvals**: Introduces **single-window clearance** and enhanced **dispute resolution mechanisms**.
  - **Rupee Payments**: Permits domestic companies in critical sectors (e.g., **defense**, **space**) to pay in **rupees** for **SEZ services**, reducing costs.
- **Interim Measures**: Pending the bill's passage, **SEZ Rules** have been amended to relax land requirements for **semiconductor units** (to **10 hectares**) and allow **work-from-home** for **IT employees**.

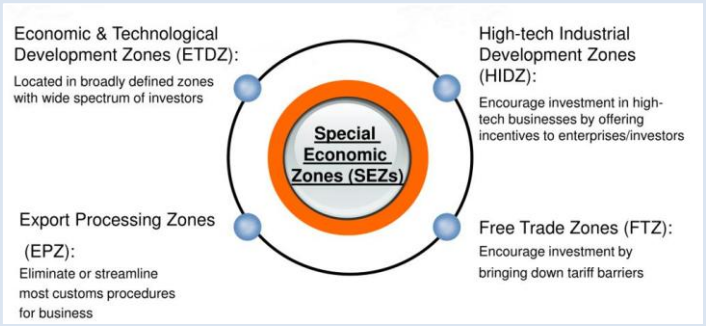
Baba Kalyani Committee (2018) Recommendations on SEZs:

- **Framework Shift**: Transition from export-only to **Employment, Economic, and Export (3Es)** focus.
- **Rebranding**: Rename **SEZs** as **Employment and Economic Enclaves**.
- **Tailored Policies**: Separate rules for **manufacturing** and **service SEZs**.
- **Ease of Doing Business**: Strengthen **single-window clearance** and grant **infrastructure status** for better financing.

Global Case Study: China's SEZs

China's SEZs, particularly **Shenzhen**, are a textbook example of successful industrial policy. Established in 1980, Shenzhen transformed from a small fishing village into a global tech hub. Key success factors included:

Types of China's SEZs



- Stable, long-term **policy support**.
- **Local government autonomy** in decision-making.
- Focus on **FDI** and **technology transfer**.
- World-class **infrastructure** (ports, roads, airports). India's **SEZ reforms** aim to emulate these by improving **policy stability** and **infrastructure integration**.

India's SEZ policy, in contrast, suffered from policy reversals and a less integrated approach to infrastructure.

Student Notes:

4.4.4. Building World-Class Infrastructure

- **The Challenge:** India's **logistics costs**, at **13-14% of GDP**, remain high compared to developed nations (**8-10%**), undermining **manufacturing competitiveness**.
- **Government's Capex Push:** The **Union Budget 2025-26** allocates **₹11.91 lakh crore** for **infrastructure**, a **7% increase** from **₹11.11 lakh crore** in 2024-25, representing **3.5% of GDP**.
- Focus areas include **highways**, **railways**, **ports**, and **digital infrastructure**, with **₹2.5 lakh crore** allocated for **high-speed rail corridors** by 2030.

Vijay Kelkar Committee (2015) Recommendations:

Risk Allocation: Assign risks to parties best suited to manage them in **PPP projects**.

Independent Regulators: Establish **sector-specific regulators** for transparency.

Dispute Resolution: Create **specialised tribunals** for faster **commercial dispute resolution**.

Model Concession Agreements: Revise contracts for balanced **risk-sharing**.

PM Gati Shakti National Master Plan:

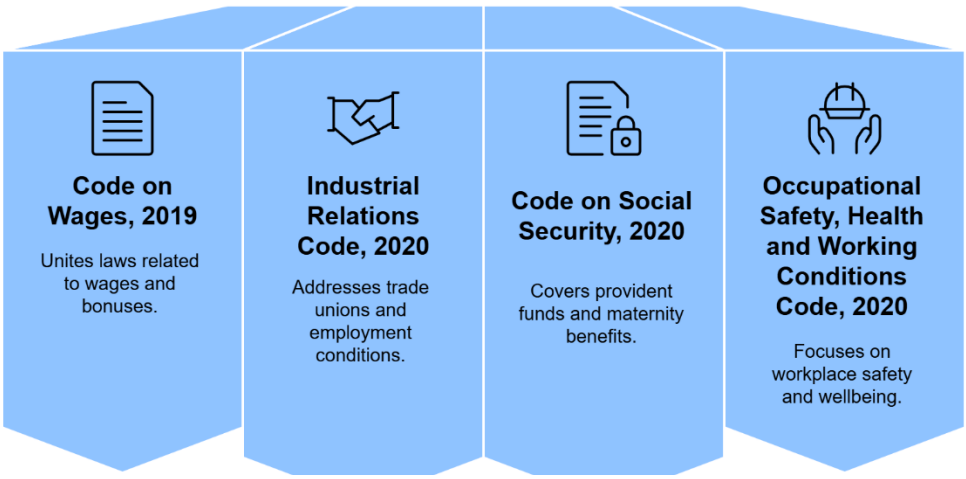
- **Mechanism**: A **digital platform** integrating **16 ministries** for coordinated **infrastructure planning**, using **geospatial mapping** to reduce project delays and costs.
- **Impact**: By mid-2025, over **1,400 projects** worth **₹15 lakh crore** have been mapped, reducing **logistics costs** by **1.5% of GDP** since 2022. Examples include synchronized **road-port connectivity** for **Chennai** and **Mumbai ports**.
- **Institutional Framework**: Supported by the **Empowered Group of Secretaries (EGoS)** and **Network Planning Group (NPG)** for high-level oversight.

National Logistics Policy (NLP), 2022:

- **Goal**: Reduce **logistics costs** to **8% of GDP** by 2030.
- **Key Pillars**:
  - **Integrated Digital Systems (IDS)**: Unifies data from ministries for seamless information flow.
  - **Unified Logistics Interface Platform (ULIP)**: Consolidates **transportation services** on one portal.
  - **Ease of Logistics (ELOG)**: Enables industry to report operational issues directly.
- **Impact**: India's **World Bank Logistics Performance Index** ranking improved to **38th** 2023, reflecting better **trade facilitation**.

4.4.5. Addressing Factor Market Reforms: The New Labour Codes

- To address the long-standing issue of rigid and complex labour laws, the government has consolidated **29 central labour laws** into four new codes.



Student Notes:

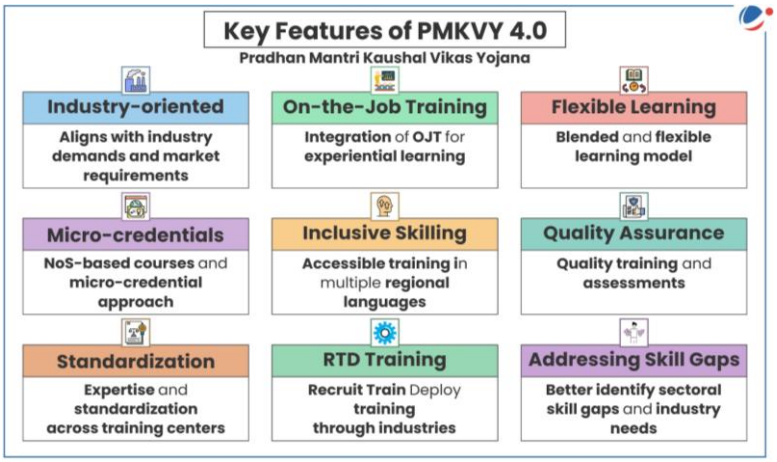
Potential Merits:	Key Demerits and Concerns:
• **Simplification**: Streamlines complex laws, reducing **compliance burdens** for businesses. • **Flexibility for Firms**: The **Industrial Relations Code** raises the **retrenchment threshold** from **100 to 300 workers**, easing **hiring and firing**. • **Gig Worker Inclusion**: The **Social Security Code** extends benefits like **provident funds** and **insurance** to **gig and platform workers**. • **Wage Standardization**: Introduces a uniform **wage definition**, ensuring **minimum wages** and **timely payments**.	• **Worker Rights**: Trade unions argue the higher **retrenchment threshold** promotes **"hire and fire" policies**, reducing **job security**. • **Trade Union Restrictions**: The **Industrial Relations Code** imposes stricter **strike conditions**, potentially weakening **collective bargaining**. • **Implementation Gaps**: Benefits like **gig worker protections** hinge on effective enforcement, which remains inconsistent.

Implementation Status:

- **Progress**: As of March 31, 2025, all **States/UTs** have pre-published draft rules for the four codes, with **33 States/UTs** harmonizing rules with the Centre.
- **Rollout Timeline**: The codes are set for phased implementation:
  - **FY26**: Large enterprises (**500+ employees**) must comply immediately.
  - **FY27**: Medium enterprises (**100-500 employees**) follow.
  - **FY28**: Small enterprises (**<100 employees**) have until 2028 for full adoption.

4.4.6. The Skill India Mission

- Launched in 2015, the **Skill India Mission** is a critical complementary initiative to any industrial policy. Its core objective is to bridge the massive **skill gap** in the Indian workforce and enhance employability.



- **The Skilling Challenge:** As per the **PLFS 2023-24**, only about **5%** of India's workforce has received formal vocational training, compared to rates of over **60-80%** in countries like Germany and South Korea.
- **Recent Restructuring (March 2025):**
  - The Union Cabinet has approved the continuation and restructuring of the Skill India Programme until **2026** with an outlay of **₹8,800 crore**.
  - The restructured programme combines three key components for better convergence: **PMKVY 4.0**, **PM-NAPS**, and the **Jan Shikshan Sansthan (JSS) Scheme**.
- **Key Components of the Mission:**

Pradhan Mantri Kaushal Vikas Yojana (PMKVY):	National Apprenticeship Promotion Scheme (NAPS):	Jan Shikshan Sansthan (JSS):
• This is the flagship scheme for providing short-term, outcome-based skill training.	• This scheme aims to promote apprenticeships by	• A community-centric scheme providing vocational training to non-literates and

• Under its latest phase, **PMKVY 4.0**, the focus has shifted towards new-age skills like **AI, robotics, IoT, and drone technology**. • As of March 2025, over **1.42 crore** individuals have been trained under the PMKVY scheme.	sharing **25% of the stipend (up to ₹1,500/month)** with employers. • As of March 2024, over **32 lakh** apprentices have been engaged under NAPS.	school dropouts in rural areas. • Over **26 lakh** individuals have been trained under JSS.

- **Other Initiatives:**
  - **Skill India Digital Hub:** Launched in 2023, this platform aims to create a unified ecosystem for skilling, education, and employment, leveraging AI/ML for personalized learning paths.
  - **Budget 2024-25 Focus:** The budget announced a new scheme to upgrade **1,000 ITIs** in collaboration with industry and a revised **Model Skill Loan Scheme** to provide loans up to **₹7.5 lakh** for advanced courses.
  - **International Mobility:** The establishment of **30 Skill India International Centres (SIICs)** aims to train youth for global job opportunities, aligning Indian skills with international standards.
- **Persistent Issues and Criticisms:**
  - **Low Placement Rates:** A significant challenge has been the low rate of placements for certified candidates, often below **20%** in many sectors, raising questions about the effectiveness of the training.
  - **Mismatch with Industry Needs:** There is often a disconnect between the courses offered and the actual skills demanded by the industry.
  - **Quality of Training: Inadequate faculty**, outdated curriculum, and lack of **application-oriented learning** impact skilling quality.
  - **Governance issues**: **Multiplicity of assessment** and certification causes **inconsistent outcomes** and confusion for employers.
  - **Lack of Quality Infrastructure**: **Inadequate resources** and poor **maintenance** in skilling institutions hinder effective training.
  - **Gender inequality**: **Low female participation** in both **skilling** and the **labour force**.

Key Recommendations of the Sharda Prasad Committee(2016) on Skill Development

- **Outcome-Based Focus:** Shift the focus of skilling from inputs (number of people enrolled) to outcomes (number of people placed in jobs with decent wages).
- **Demand-Driven Approach:** Ensure that all skilling programs are designed in close consultation with industry to guarantee relevance.
- **Robust Monitoring:** Create a strong monitoring and evaluation framework to track placement rates and the quality of training.
- **National Labour Market Information System:** Develop a dynamic portal to provide real-time information on skill requirements and job availability.

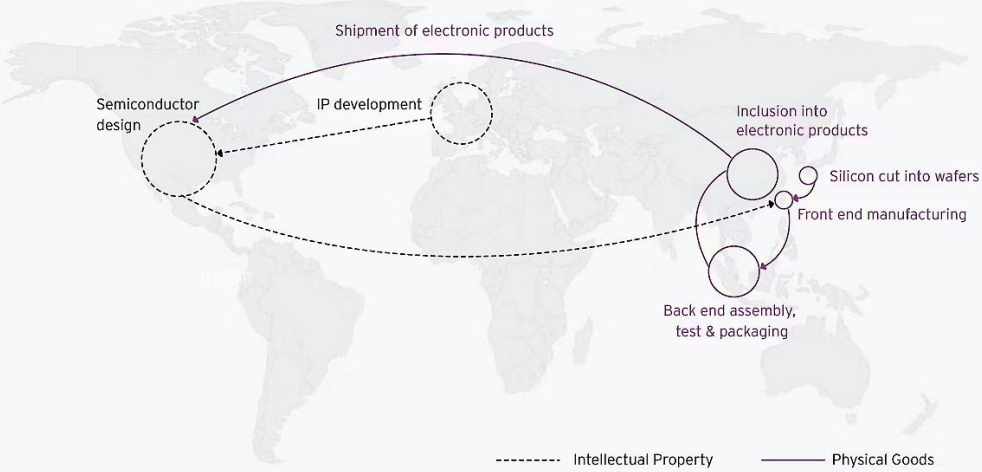
Student Notes:

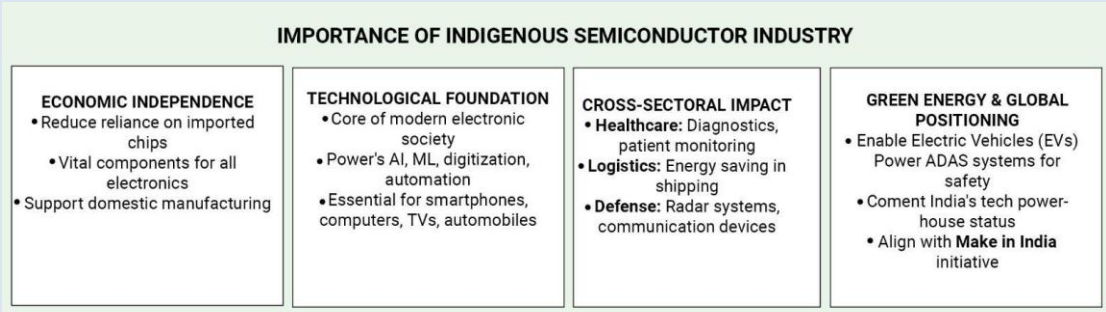
4.5. A Deep Dive into Key Industrial Sectors

This section analyzes key sectors that are critical to India's industrial ambitions.

4.5.1. The Electronics Sector and the Semiconductor Mission

- **Status and Importance:**
  - India's electronics sector has seen remarkable growth, with domestic production increasing from **₹1.9 lakh crore in FY15 to ₹9.52 lakh crore in FY24** (Economic Survey 2024-25).
  - Semiconductors are the foundational technology for the entire digital economy, from smartphones to data centers and defence equipment.





- **Government Initiatives:**
  - **PLI for Large-Scale Electronics Manufacturing:** This has been the primary driver of growth, attracting major global players.
  - **India Semiconductor Mission (ISM):** A comprehensive **₹76,000 crore ($10 billion)** program launched in 2021 to establish a complete semiconductor and display manufacturing ecosystem. The mission provides fiscal support of up to **50%** of the project cost for setting up semiconductor and display fabrication units.
  - **Recent Approvals (2024):** The government has approved three major semiconductor plant proposals, including **India's first commercial semiconductor fab** by the Tata Group in Gujarat, and two other assembly and packaging (ATMP) units.

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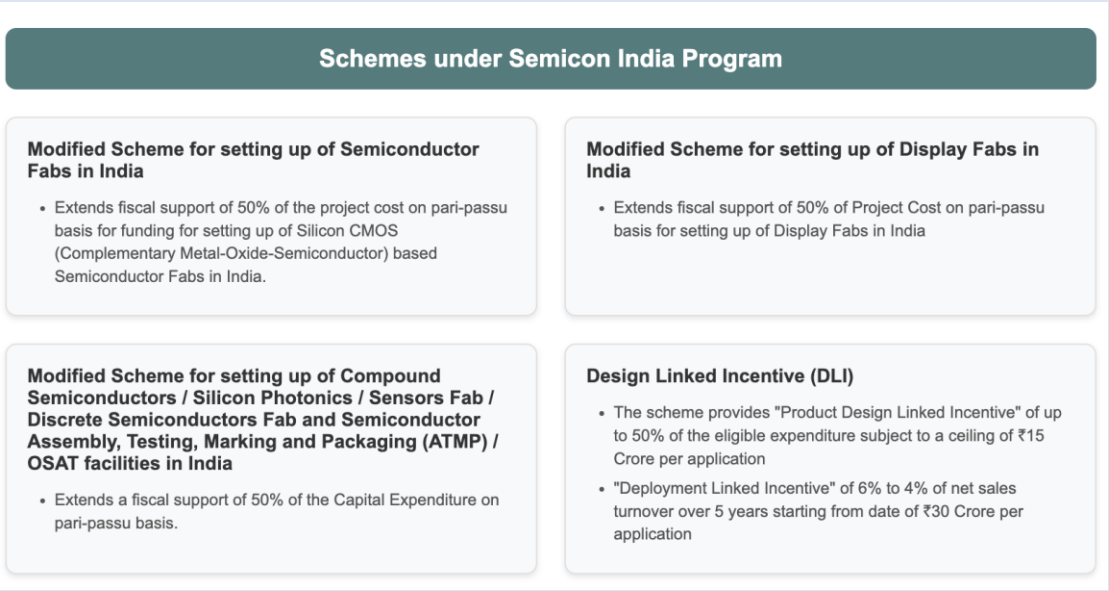

- **Challenges:**
  - **Extreme Import Dependence**: India relies heavily on **imports** for high-value components like **semiconductor chips**, with **China** being a major supplier, despite success in assembly.
  - **High Capital and Resource Intensity**: **Chip fabrication plants (fabs)** are extremely **capital-intensive** and demand massive resources, including **ultrapure water** and a consistent, high-quality **power supply**.
  - **Nascent Ecosystem**: India lacks a **mature ecosystem** of ancillary industries, such as **specialized gases**, **chemicals**, and equipment necessary for **semiconductor manufacturing**
  - **Talent Gap**: While India has a strong base of **design engineers**, there is a severe shortage of **hands-on experience** in **chip fabrication**, particularly in highly specialized roles.
  - **Infrastructure and Resource Shortcomings**: A combination of **high capital requirements**, **lack of specialized industries**, and **talent scarcity** hampers India's semiconductor sector growth.

4.5.2. The Textile and Apparel Industry

- **Status and Importance:**
  - A major employment generator, especially for women, accounting for about **11% of manufacturing GVA**.
  - India is the **sixth-largest exporter** of textiles and apparel globally, with exports of **$35.87 billion** in FY24 (Economic Survey 2024-25).
- **Challenges:**
  - **Structural Misalignment:** The global market is dominated by **Man-Made Fibres (MMF)**, while the Indian industry remains heavily reliant on cotton. Indian MMF producers face a cost disadvantage due to higher raw material prices compared to competitors like Bangladesh and Vietnam.
  - **Fragmented Structure:** The industry is dominated by MSMEs, which limits **economies of scale**, investment in modern technology, and the ability to handle large export orders.
  - **FTA Disadvantage:** Indian exporters face high tariffs (e.g., **9-11%** in the EU and US), while competitors from Bangladesh and Vietnam enjoy duty-free access due to their LDC status or FTAs.

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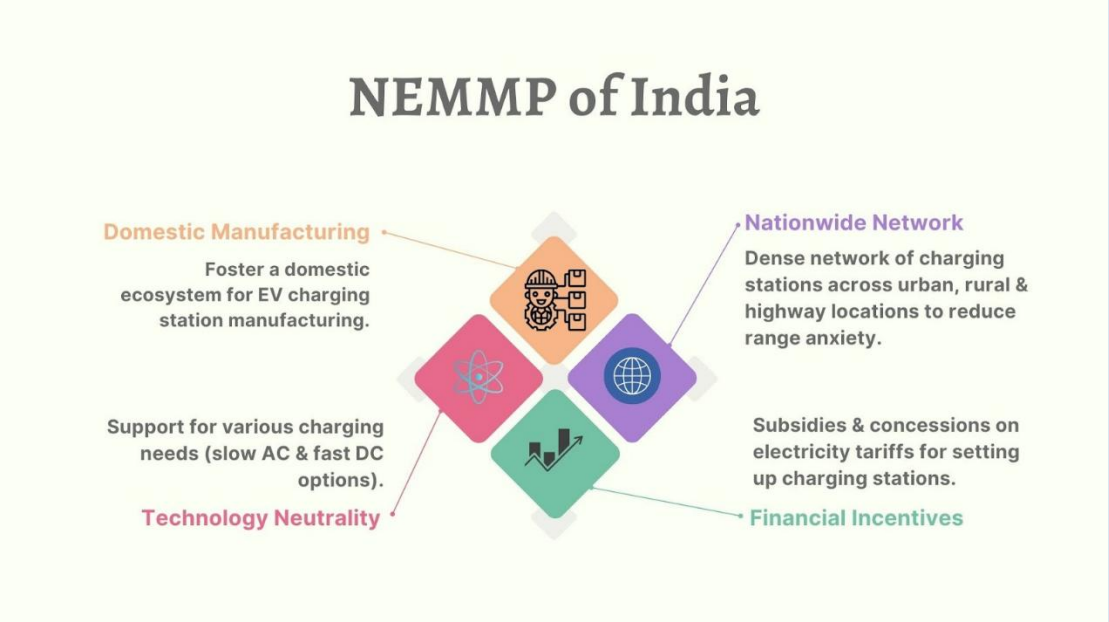
- **Government Initiatives:**
  - **PM MITRA Parks:** A scheme to develop **seven mega integrated textile parks** with world-class, plug-and-play infrastructure to encourage scale and vertical integration.
  - **PLI for Textiles:** A **₹10,683 crore** scheme focused on boosting the production of **MMF apparel, MMF fabrics, and technical textiles**.
  - **National Technical Textiles Mission:** A mission to promote R&D and application of technical textiles in areas like infrastructure, defence, and healthcare.

4.5.3. The Automotive Sector and the EV Transition

- **Status and Importance:**
  - A significant driver of economic growth, contributing over **7% to India's GDP**.
  - The domestic auto market is one of the largest in the world, with sales of **12.5%** in FY24 (Economic Survey 2024-25).
- **The Electric Vehicle (EV) Transition:**



  - **Government Push:** The government is aggressively promoting EVs to reduce oil imports and curb pollution. Key initiatives include:
    - National Electric Mobility Mission Plan (NEMMP) 2020
    - The **FAME-II scheme** (offering demand incentives) and the **PLI for Automobiles and Auto Components** (**₹25,938 crore**), which has a strong focus on promoting the manufacturing of EVs and their components.
  - **Progress:** EV penetration has been increasing rapidly, especially in the two-wheeler and three-wheeler segments.
- **Challenges:**
  - **Inadequate Charging Infrastructure:** The lack of a widespread and reliable public charging network is a major barrier to adoption.
  - **High Initial Cost:** The upfront cost of EVs, particularly electric cars, remains significantly higher than their internal combustion engine (ICE) counterparts.
  - **Import Dependence for Batteries:** This is the biggest strategic challenge. India is almost **100% import-dependent** for **lithium-ion cells**, the most critical component of an EV battery, with China dominating the global supply chain.
  - **Grid Capacity:** A mass shift to EVs will put immense pressure on the electricity grid, which needs significant upgrades to handle the additional load.

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4.5.4. The Pharmaceutical Industry

- **Status and Importance:**
  - Known as the **"Pharmacy of the World,"** India is the **third-largest** pharmaceutical producer by volume globally.
  - The industry had a turnover of **₹4.17 lakh crore** in FY24, with exports accounting for over 50% (Economic Survey 2024-25).
- **Strengths:**
  - A global leader in the production of **generic drugs and vaccines**.
- **Challenges:**
  - **Critical Import Dependence:** The industry is critically dependent on China for **Active Pharmaceutical Ingredients (APIs)** and **Key Starting Materials (KSMs)**, with over **70%** of APIs being imported. This was starkly exposed during the COVID-19 pandemic.
  - **Low R&D and Innovation:** The industry's business model is focused on high-volume, low-margin generics. Spending on fundamental **R&D and new drug discovery** is extremely low compared to global pharma majors. India's R&D spending in the sector is around **0.7% of GDP**, far below the global average.
  - **Regulatory Hurdles:** The sector faces challenges from drug price controls and a complex regulatory environment for clinical trials and product approvals.
- **Government Initiatives:**
  - **PLI for Pharmaceuticals and Bulk Drugs:** Two separate PLI schemes with a combined outlay of over **₹21,000 crore** have been launched to promote domestic manufacturing of critical KSMs, APIs, and high-value drugs to reduce import dependence.
  - **Promotion of R&D and Innovation:** A new policy was announced in 2023 to promote R&D in the pharma-medtech sector, with a focus on creating a supportive ecosystem and Centres of Excellence.

4.5.5. The Steel Industry

- **Status and Importance:**
  - India is the **world's second-largest producer of crude steel**, a critical input for core sectors like construction, infrastructure, and automobiles.
- **Demand Drivers:**
  - The government's strong focus on infrastructure, with a capex of **₹11.11 lakh crore**, is the primary driver of steel demand.
  - The **Building & Construction** and **Infrastructure** sectors together account for an estimated **68%** of total steel consumption, followed by engineering and packaging (22%) and automobiles (9%).
- **Challenges:**
  - **Global Price Volatility:** The industry is highly susceptible to global price fluctuations. In FY25, low international prices made imports cheaper and reduced the margins on exports, leading to India becoming a **net importer of steel** during April-November FY25.
  - **Input Security:** While rich in iron ore, India has a high dependence on imported **coking coal**, making the industry vulnerable to supply chain disruptions and price volatility in the global market.
  - **Transition to Green Steel:** The global push for decarbonization requires a shift to **Green Steel** production (using green hydrogen or electricity instead of coal), which is currently very capital-intensive and technologically challenging.
- **Government Initiatives:**
  - **National Steel Policy (2017):** Aims to achieve **300 million tonnes** of steel production capacity by 2030-31.

- **PLI Scheme for Specialty Steel:** A **₹6,322 crore** scheme to promote the manufacturing of high-value specialty steel within the country.
- **Steel Scrap Recycling Policy (2019):** Encourages the efficient recycling of steel scrap to ensure the availability of high-quality raw material for green steel production. The use of scrap significantly reduces energy and water consumption and lowers GHG emissions by up to **58%**.

National Steel Policy 2017 and Recent Amendments

The **National Steel Policy 2017** laid the groundwork, aiming to achieve 300 million tonnes of production capacity and raise per capita steel consumption to 160 kg by 2030-31, fostering a globally competitive industry.

Building on this, the **revised DMISP Policy of 2025** mandates stricter domestic sourcing for government projects. Its key change are:

- The **"melt and pour" clause**, requiring steel to be melted and cast within India, ensuring end-to-end local production.
- It also introduced a **reciprocity clause**, barring suppliers from nations that restrict Indian firms from public tenders, significantly strengthening the 'Make in India' initiative in the steel sector.

4.5.6 The MSME Sector

As the largest source of non-agricultural employment, second only to agriculture, the MSME sector is a critical driver of entrepreneurship, inclusive industrial growth, and self-reliance.

New classification of MSME

Type	INVESTMENT		TURNOVER	
	Current	Revised	Current	Revised
MicroEnterprise	Rs 1cr	Rs 2.5cr	Rs 5cr	Rs 10cr
Small Enterprise	Rs 10cr	Rs 25cr	Rs 50cr	Rs 100cr
Medium Enterprise	Rs 50cr	Rs 125cr	Rs 250cr	Rs 500cr

Source: Budget 2025-2026, Speech of Nirmala Sitharama, Union Minister of Finance February 1, 2025.

The Significance of MSMEs in India's Economy

The contribution of MSMEs to the Indian economy is vast and multifaceted, extending across GDP, employment, and exports.

- **Contribution to GDP:**Its Gross Value Added (GVA) contribution to the nation's GDP has been consistently significant, standing at roughly **30 % in 2024-25**. Even during the COVID-19 pandemic, the sector sustained a contribution of 27.3% in 2020-21, showcasing its resilience.
- **Employment Generation:** MSMEs are the largest source of non-agricultural employment in India. The **Udyam Registration Portal** alone reflects employment generation for over **20.17 crore** individuals.
- **Boosting Exports:** MSME-related products accounted for around **45 % of India's total exports in 2024-25**. The value of MSME exports is **₹12.39 lakh crore in 2024-25**.
- **Fostering Inclusive and Rural Growth:** MSMEs are crucial for fostering entrepreneurship among women and vulnerable communities. Women-owned MSMEs now constitute

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20.5% of Udyam registrations. The **National SC-ST Hub** has been launched to promote entrepreneurship in the SC-ST community and fulfill the 4% public procurement target.

- **Rural Industrialization:** MSMEs play a pivotal role in driving rural industrialization. Schemes like **SFURTI** aim to organize traditional artisans into clusters to improve competitiveness and enhance marketability.

Unlocking Untapped Potential: The Rise of Medium Enterprises

While the MSME sector is dominated by micro-enterprises, the true untapped potential lies in scaling up small firms into medium enterprises.

- **Structural Skew:** The MSME sector's composition is heavily skewed, with **97%** being micro-enterprises, 2.7% small, and **only 0.3% being medium enterprises**.
- **High Productivity of Medium Enterprises:** Despite their small number, medium enterprises contribute nearly **40% of MSME exports**, showcasing their immense potential as scalable, innovation-led units.
- **Scaling Up Trend:** A positive trend of enterprises scaling up is emerging. Between the financial year 2023-24 and 2024-25, **2,372 micro-enterprises and 17,745 small enterprises upgraded to medium enterprises**, reflecting the sector's dynamism.

Key Challenges Hindering MSME Growth

- **Limited Access to Finance:** According to a **SIDBI report**, the MSME sector faces an addressable **credit gap of 24%**, amounting to nearly **₹30 lakh crore**. Only **20% of MSMEs** have access to formal credit, forcing many to rely on high-cost informal sources.
- **Delayed Payments:** Delayed payments from corporations and government departments create severe cash flow issues. A 2022 report estimated that outstanding payments to MSMEs total around **₹10.7 lakh crore**, equivalent to 6% of India's GVA.
- **Technological and Skill Gaps:** There is a significant lag in technology adoption, with only **6% of MSMEs** actively using e-commerce platforms and **45% having adopted some form of AI**. Additionally, **25% of MSMEs** face a shortage of skilled manpower.
- **Infrastructure Bottlenecks:** Poor connectivity and high logistics costs, estimated to be **14-18% of GDP** against a global benchmark of 8%, reduce the competitiveness of MSMEs.
- **Regulatory and Compliance Burden:** MSMEs face cumbersome regulatory procedures and high compliance costs, which hinder the ease of doing business.
- **Lack of Formalization:** A significant portion of MSMEs remains unregistered and informal, limiting their access to institutional support, credit, and government schemes.

The Roadmap Ahead: Vision and Key Reforms

A. NITI Aayog's Vision for Medium Enterprises

NITI Aayog's recent report, "**Designing a Policy for Medium Enterprises**," outlines a strategic framework to unlock the potential of this high-impact segment:

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- **Tailored Financial Solutions:** Introduce a working capital financing scheme linked to turnover and a **₹5 crore credit card facility** at market rates.
- **Technology Integration and Industry 4.0:** Upgrade existing Technology Centers into sector-specific **India SME 4.0 Competence Centers**.
- **R&D Promotion:** Establish a dedicated **R&D cell** within the Ministry of MSME, leveraging the Self-Reliant India Fund.
- **Cluster-Based Testing Infrastructure:** Develop sector-focused testing and certification facilities to ease compliance and improve product quality.
- **Custom Skill Development:** Align skilling programs with enterprise-specific needs by region and sector.
- **Centralized Digital Portal:** Create a dedicated sub-portal on the Udyam platform with AI-based assistance and scheme discovery tools.

B. Key Committee Recommendations for MSME Credit

The Standing Committee on Finance, in its April 2022 report on MSME credit, provided a detailed framework to address financial bottlenecks. Key recommendations include:

- **Bridging the Credit Gap via a Digital Ecosystem:** Leverage digital platforms like Udyam, Aadhaar, and BHIM UPI to reduce transaction costs, eliminate physical collateral requirements, and enable quicker loan approvals.
- **Adopting an Account Aggregator Framework:** Use secure digital financial data sharing to improve credit access, prevent fraud, and reduce NPAs, with platforms like SAHAY GST enabling instant lending based on GST invoices.
- **Shifting to Cash-flow Based Lending:** Base MSME loans on real-time cash flow and revenue generation instead of traditional asset-backed lending.
- **Launching a Vyapar Credit Card Scheme:** Introduce credit cards similar to the Kisan Credit Card to provide MSMEs with short-term loans at lower interest rates for working capital needs.
- **Strengthening SIDBI's Role:** Inject **₹5,000-10,000 crore** into SIDBI to strengthen its equity base, allowing it to finance NBFCs and lower borrowing costs for MSMEs.

While government initiatives have provided a strong foundation, persistent challenges related to finance, technology, and compliance must be addressed. By implementing targeted policy interventions and structural reforms, as recommended by expert committees and NITI Aayog, India can unlock the sector's full potential, ensuring a resilient MSME ecosystem that is key to long-term economic development and global competitiveness.

4.6. The Supportive Ecosystem for Industry

The success of industrial policy depends not just on targeted interventions but also on a supportive broader ecosystem that fosters innovation, digital transformation, and fair competition.

4.6.1. GST as a Transformative Industrial Reform

The introduction of the **Goods and Services Tax (GST)** in 2017 was a landmark reform that subsumed multiple indirect taxes into a single, unified tax structure, creating a common national market.

- **Positive Impacts on the Industrial Sector:**
  - **Improved Input Tax Credit (ITC) Mechanism**: GST mitigates the **cascading effect of taxes**, lowering **production costs** for manufacturers and enhancing **competitiveness** by allowing seamless flow of ITC across the value chain.

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- **Streamlined Logistics and Supply Chains**: By eliminating **state border checkpoints** and varying **entry taxes**, **logistics** have improved, reducing **transit times by 30%**, cutting **fuel** and operational costs. The mandatory **e-way bill system** enhances **supply chain** efficiency and optimizes **warehousing**.
- **Simplified Tax Compliance and Broader Tax Base**: GST consolidates tax registrations into a **single portal**. The **exemption threshold** increase to ₹40 lakh for goods has expanded the **registered taxpayer base** to over **15.1 million** by early 2025.
- **Reduced Tax Evasion and Increased Transparency**: **E-invoicing** and **e-way bills** have digitalized transactions, significantly **curbing tax evasion**. **GST collections** in FY 2024-25 reached ₹22.08 lakh crore, a **9.4% growth**.
- **Lowered Production Costs and Increased Competitiveness**: GST has lowered **production costs** and made **Indian exports** more competitive by treating them as **zero-rated supplies**, allowing exporters to claim refunds on **input taxes**.

- **Persistent Challenges:**
  - **Difficulties for Small and Medium Enterprises (SMEs)**: Many **SMEs** struggle with **GST compliance** due to **digital adoption** costs, the complexity of filing returns, and dependency on suppliers for **timely ITC claims**.
  - **Delayed ITC Refunds**: Refunds can be delayed if suppliers do not comply, **blocking working capital**, especially for smaller companies and **exporters**.
  - **Complexities and Frequent Updates**: The frequent **changes** in GST law, with hundreds of amendments, create difficulties for businesses, particularly **SMEs** lacking **in-house tax expertise**.
  - **Inverted Duty Structure**: Several industries face an **inverted duty structure**, where the **GST rate on raw materials** is higher than on finished products, leading to **unutilized ITC** and causing **cash flow issues**.
  - **Sector-Specific Issues**: Specific sectors like **textiles** and **pharmaceuticals** face challenges due to varying tax rates on different materials and products, leading to **classification issues** and **higher tax slabs** for certain items.

While **GST** has streamlined India's industrial tax system, improving **efficiency** and **competitiveness**, persistent challenges, especially for **SMEs** and sector-specific issues, require continued policy adaptation and simplification for sustained growth.

4.6.2. The Startup Ecosystem

- **Status:** India has the **third-largest startup ecosystem** in the world, with over **1.17 lakh** DPIIT-recognized startups and more than **110 unicorns** as of 2024.
- **Government Initiatives:**
  - **Startup India Initiative (2016):** A flagship program providing support through simplification, funding, and partnerships.

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- **Fund of Funds for Startups (FFS):** A **₹10,000 crore** fund to provide capital to SEBI-registered Alternative Investment Funds (AIFs), which in turn invest in startups.
- **Startup India Seed Fund Scheme (SISFS):** A **₹945 crore** scheme to provide financial assistance to startups for proof of concept, prototype development, and market entry.

- **Challenges:**
  - **Funding Winter:** The ecosystem has faced a "funding winter" since 2022, with a significant decline in venture capital funding, especially for early-stage startups.
  - **"Reverse Flipping":** A concerning trend where Indian startups shift their domicile overseas (e.g., to Singapore or the US) to access global capital and benefit from more favourable regulations. A **2023 Hurun report** noted a large number of unicorns founded by Indians are headquartered outside India.
  - **Lack of Deep Tech Focus:** The ecosystem is heavily skewed towards consumer internet and e-commerce, with insufficient focus on **deep tech** sectors like semiconductors, advanced materials, and biotechnology.

4.6.3. Digitalization of the Indian Economy

- **Status:** The digital economy is a major growth driver, projected to contribute **20% of GVA by 2030**.
  - **Overall Digital Economy Growth**: India is the **3rd largest** digitalized country, with the **digital economy** contributing **11.74%** of GDP in **FY23**, projected to reach **20%** of **GVA** by **FY30**, surpassing **agriculture** and **manufacturing**.
  - **Employment**: The **digital economy** employed **14.67 million** workers (2.55% of the workforce) in **2022-23**, with **58.07%** of these jobs in **digitally-enabling industries**.
  - **Financial Inclusion**: Initiatives like **Jan Dhan Yojana**, **Aadhaar**, and **Mobile (JAM trinity)** significantly expanded **financial inclusion**. The **RBI's Financial Inclusion Index** rose to **64.2%** in **FY24**, and **DBT transfers** exceeded **₹44 lakh crore** by May 2025.
  - **Digital Public Infrastructure (DPI):** The **India Stack** (Aadhaar, UPI, DigiLocker, etc.) has been a game-changer.
    - **UPI** has revolutionized payments, with transactions crossing **1,300 crore** per month in 2024.
    - **Aadhaar** has enabled identity verification at scale, facilitating direct benefit transfers (DBT).
- **Challenges:**
  - **Digital Divide**: Significant gap in **internet access** and quality between **urban** and **rural** areas, limiting digital infrastructure reach.
  - **Low Digital Literacy**: **75%** of Indian adults lack basic **financial knowledge**, and over **80%** of women are **financially illiterate**, hindering digital service usage.
  - **Cybersecurity and Fraud Risks**: Increased dependence on digital platforms exposes individuals and businesses to **cyber-attacks**, **data breaches**, and **financial fraud**.
  - **Technological Infrastructure**: Challenges in maintaining **uninterrupted service availability**, managing **technological upgrades**, and overcoming **limited internet connectivity**.
  - **Regulatory Issues**: **Complex regulations** in **fintech** and **cryptocurrency** hinder the **adoption** and **innovation** in the digital sector.

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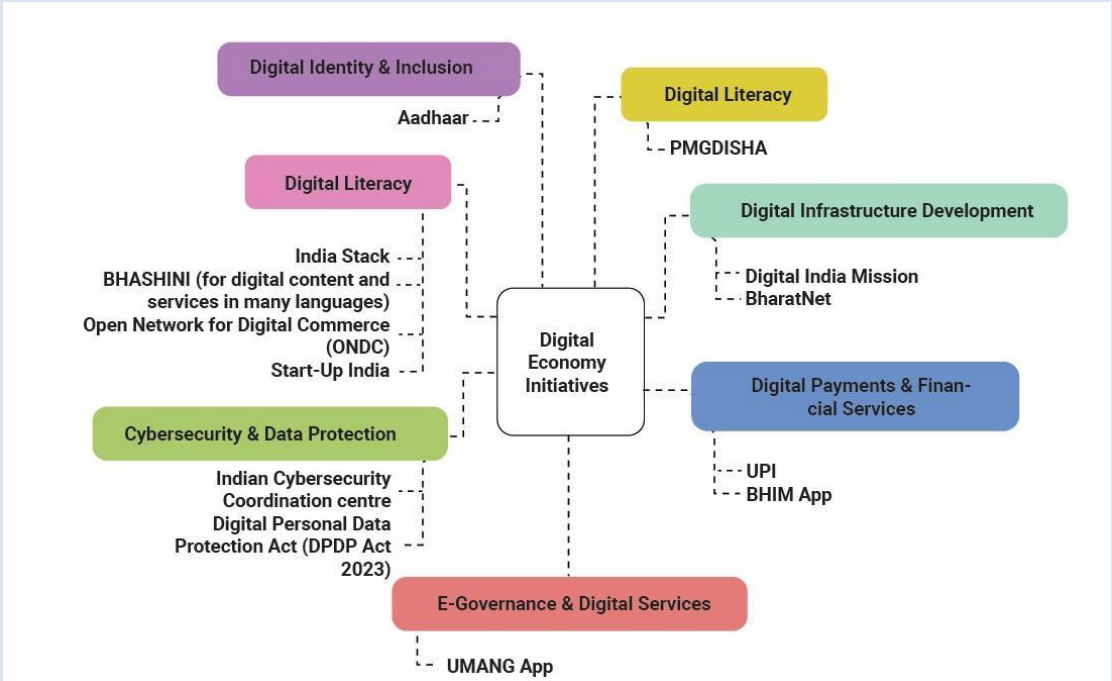

4.6.4. The Competition Law Framework for a Digital Age

- **The Challenge of Digital Markets:** Digital markets are often characterized by **network effects** and a **"winner-takes-all"** dynamic, which can lead to the creation of powerful monopolies.
- **Limitations of Existing Law:** The **Competition Act, 2002**, is an ***ex-post* law**, meaning the Competition Commission of India (CCI) can only intervene *after* anti-competitive conduct has occurred. This is often too late in fast-moving digital markets.
- **The Draft Digital Competition Bill:** To address this, a new bill proposes an *ex-ante* framework.
  - **Key Proposal:** It suggests the designation of large digital platforms as **"Systemically Significant Digital Enterprises" (SSDEs)**.
  - **Obligations on SSDEs:** These designated firms would be subject to a list of "dos and don'ts," such as prohibitions on **self-preferencing** their own services and **anti-steering** (preventing users from accessing cheaper options outside the platform).
  - **Global Precedent:** The proposed law is inspired by the **EU's Digital Markets Act (DMA)**.

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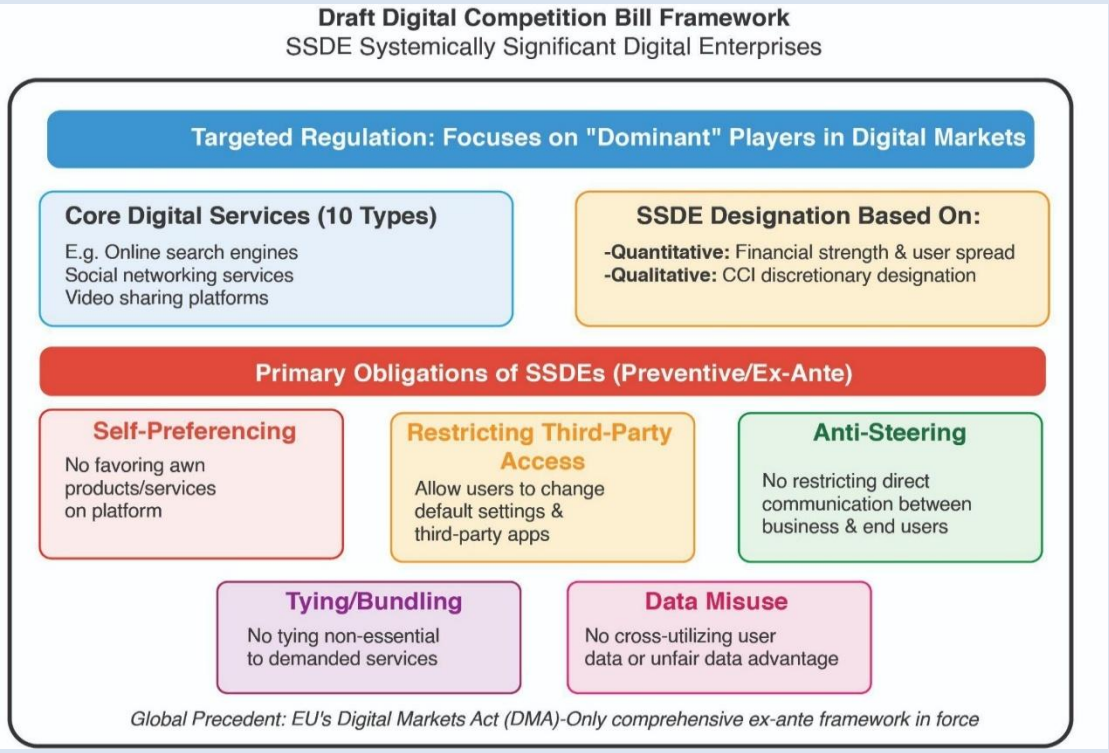


- **Debate and Concerns:** The bill is currently under debate, with some industry players arguing that it could stifle innovation and hurt smaller businesses that rely on large platforms for market access.

4.6.5. India's Intellectual Property Rights (IPR) Regime

- **Status and Progress:**
  - **Global Ranking**: India ranks **6th** globally in **patent filings**, **4th** in **trademark filings**, and is among the top 10 in all three major **IP categories** (patents, trademarks, industrial designs) as per the **WIPO Report 2022**.
    - India's rank in the **Global Innovation Index** improved to **39th** in **2024**, up from **81st** in **2015**.
  - **Patent Filing and Grants**: As per the **Economic Survey 2024-25**, there has been a more than **two-fold increase in patent filings** and a **17-fold increase in patent grants** since 2014-15. In **2024**, over **92,000 patent applications** were filed, with **64,941 patents** granted.
  - **Domestic Filings**: The share of **patent filings** by **domestic residents** rose to **over 50%** in **FY24**, up from **28%** in **FY15**.
  - **Educational Institutes**: **Patent filings** by **domestic educational institutes** tripled from **7,405** in **2021-22** to **23,306** in **FY24**.
  - **Women Applicants**: **Patent filings** by **women applicants** increased from **15** in **FY15** to **5,183** in **FY24**.
- **Government Initiatives:**
  - In India, the IPR regime is governed by various acts, including the **Patents Act, 1970; the Copyright Act, 1957; and the Protection of Plant Varieties and Farmers' Rights Act (PPV&FR Act), 2001**.
  - The government has implemented numerous reforms, including the **National IPR Policy 2016** and the **Patent (Amendment) Rules 2024,** to streamline application processes, reduce fees for startups and MSMEs, and expedite examinations.
  - **Procedural Reforms:** The government has simplified processes, reduced fees for startups and educational institutions, and expedited examinations.

Student Notes:

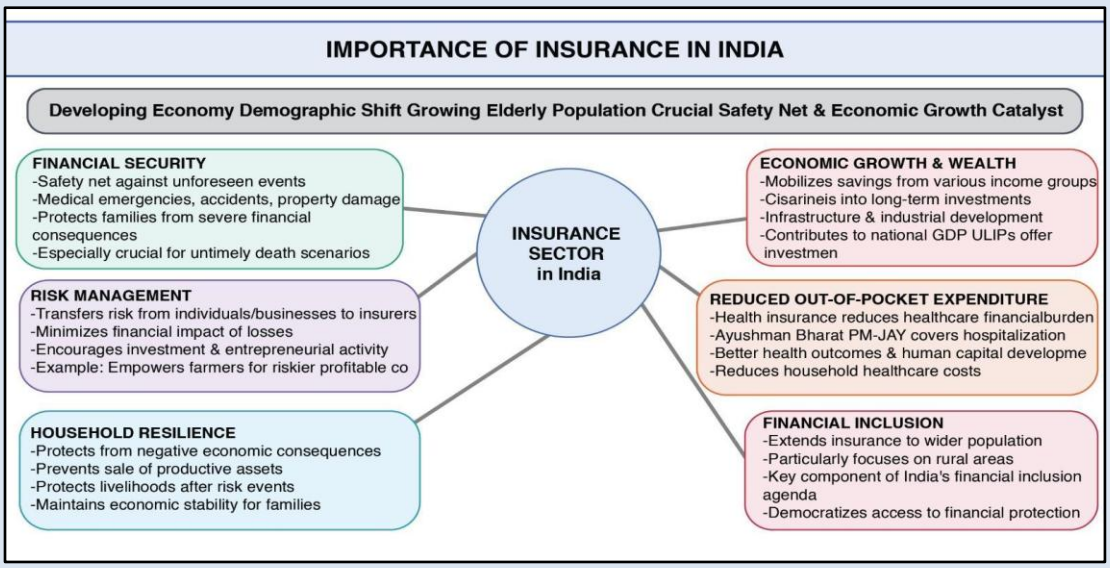
- **Challenges:**
  - **Low R&D Spending:** India's gross expenditure on R&D remains low at **0.64% of GDP**, with the private sector's contribution being particularly weak.
  - **Weak Commercialization:** There is a gap in translating academic research and patents into commercially viable products.
  - **Enforcement:** While the legal framework has improved, the enforcement of IPR, especially against piracy and counterfeiting, remains a challenge.
  - **Lengthy Patent Examination:** Processes with delays ranging from **30 to 42 months** for standard applications, impact timely **commercialization**.
  - **International Scrutiny:** India remains on the **'Priority Watch List'** of the US Trade Representative's Special 301 Report due to concerns over patent protection and enforcement.

Key Aspects of IPR in the Context of Agriculture

- **Plant Breeders' Rights (PBRs)**: Grant exclusive rights to breeders of new, **distinct**, **uniform**, and **stable plant varieties** for **15-18 years** to produce, sell, and market the protected variety. PBRs protect the **genetic makeup** and characteristics, not the physical seeds.
- **Farmers' Rights (under PPV&FR Act, 2001)**: Farmers have the **right to save**, **use**, **sow**, **re-sow**, **exchange**, and **sell farm-saved seed** of protected varieties. However, they cannot sell **branded seeds** without permission. The act also mandates **benefit-sharing** with farmers whose varieties are used commercially.
- **Challenges in Seed Sovereignty**: Patented **GM seeds** (e.g., **Bt cotton**) threaten traditional seed-saving practices, leading to **corporate dependence** and **debt traps**. **95% of India's cotton seed** is controlled by **Monsanto**, exacerbating **farmer suicides** in the cotton belt. Legal cases, like **PepsiCo's lawsuit** against Indian potato farmers, highlight complexities in **seed sovereignty**.

4.6.6. The Insurance Sector for Economic Resilience

- **Status and Importance:** The insurance sector is critical for mobilizing savings, providing long-term capital for infrastructure, and offering a social safety net.



- **The Challenge of Low Penetration:**
  - India's insurance penetration (premium as a % of GDP) stood at **3.7%** in FY24, significantly below the global average of **7%**.

Student Notes:

- Insurance density (per capita premium) was only **$95**, highlighting a vast protection gap.
- The **"missing middle"**—the informal sector workforce not poor enough for government schemes but not affluent enough for private insurance—remains largely uncovered.

- **Government Initiatives and Reforms:**
  - **"Insurance for All by 2047":** This is the government's vision to increase insurance coverage across the country.
  - **Bima Sugam:** A proposed one-stop digital platform for all insurance needs, from policy purchase to claim settlement.
  - **Bima Vahak:** A women-led distribution channel to enhance penetration in rural areas.
  - **FDI Liberalization:** The FDI limit in the insurance sector has been raised to **100%** to attract capital and expertise.
  - **Ayushman Bharat (PM-JAY):** The world's largest public health insurance scheme, providing coverage to over 55 crore beneficiaries.

4.6.7. Financing the Green Industrial Transition

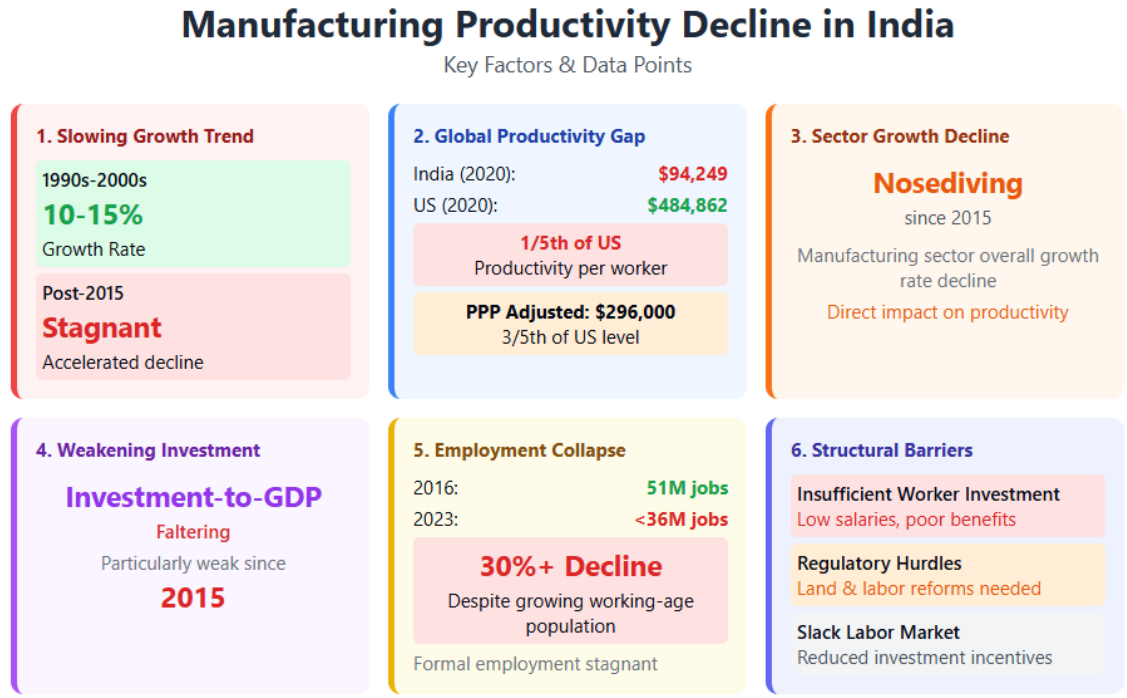
- **The Imperative:** Achieving India's **Net Zero by 2070** target requires massive investments in decarbonizing the industrial sector.
- **Financing Gap:** Estimates suggest India needs investments of over **$10 trillion** to meet its net-zero target. Public funds alone are insufficient.
- **Government and Regulatory Initiatives:**
  - **Sovereign Green Bonds (SGrBs):** The government has started issuing SGrBs to mobilize resources for green infrastructure projects. **₹20,000 crore** worth of SGrBs were issued in FY24.
  - **Green Credit Programme:** A market-based mechanism to incentivize voluntary environmental actions by individuals and companies.
  - **SEBI Framework for Green Debt Securities:** SEBI has introduced a framework for issuing green bonds, including sub-categories like blue bonds (for water management) and yellow bonds (for solar energy).
- **Challenges:**
  - Attracting private and foreign capital at scale.
  - Developing a robust market for green finance instruments.
  - Ensuring the credibility and transparency of green projects to avoid "greenwashing."

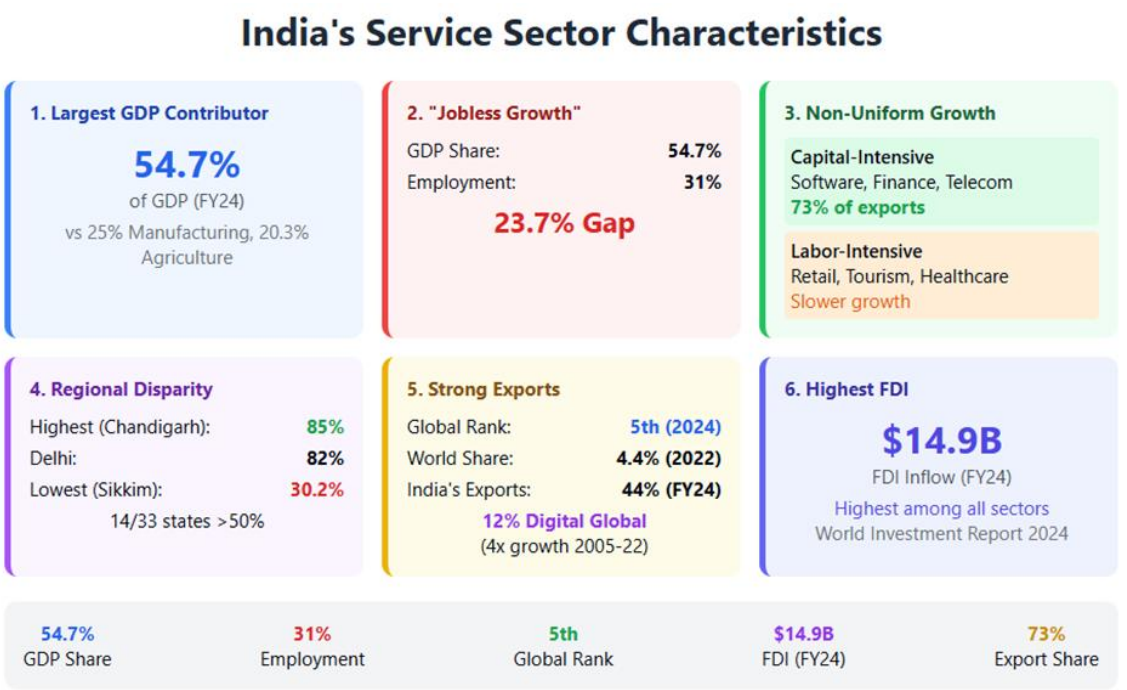
Student Notes:

4.7. Strategic Debates and Future Outlook

This section explores the key frontiers that will define the future of Indian industry.

4.7.1. The Manufacturing vs. Services Growth Debate





• **The Case for Manufacturing-Led Growth:** ○ **Job Creation**: Manufacturing absorbs the **55% agricultural workforce** and creates **high-value jobs**, addressing **youth unemployment** (40% for those aged 15-24).	• **The Case for Services-Led Growth:** ○ **Natural Advantage & Low Infrastructure Needs**: India's **service sector** grows rapidly with minimal infrastructure. **45%** of service sector GVA growth in FY25 came from sectors like **finance** and **real estate**.

Student Notes:

○ **Proven Development Path**: Unlike service-led growth, **industrialization** fueled growth for major economies. **Manufacturing share** in India stagnates below **20%**. ○ **Self-Reliance**: A strong **manufacturing base** boosts **defense exports**, reducing reliance on **imported military hardware**. ○ **Addressing Jobless Growth**: Manufacturing offers a **labor-absorbing alternative** as services face **jobless growth**.	○ **Climate-Friendly Exports**: **Services exports** are eco-friendly, requiring minimal **production** and **transport**. ○ **Stability & Trade Surplus**: The **service sector** offers stable growth and a **trade surplus**, with **insurance** projected to grow fastest among **G20** nations. ○ **Rapid Growth in Digitally Delivered Services**: **Digitally delivered services** exports grew **4x** from **2005-2022**, accounting for **12%** of global trade.

- **The Way Forward: A "Twin-Engine" Approach**
  - The debate is not an "either-or" choice. India needs a **"twin-engine" growth strategy** that leverages the strengths of both sectors.
  - This involves creating a policy environment that supports the growth of **labour-intensive manufacturing** (like textiles, leather, food processing) while simultaneously consolidating India's leadership in **high-value services**.

4.7.2. India's Strategy on Free Trade Agreements (FTAs)

- **The Strategic Shift:** India has moved from a cautious approach to actively negotiating FTAs with key partners like the UAE, Australia, the UK, and the EU.

Potential Benefits	Challenges
• **Enhanced Market Access & Trade Liberalization**: FTAs reduce tariff barriers, improving access to partner markets and signaling India's commitment to **trade liberalization** in a protectionist world. • **Attracting Investment & Job Creation**: The **India-EFTA TEPA** aims for **$100 billion** investment and the creation of **1 million jobs** over 15 years. • **Boosting Exports**: Exports to **SAFTA** grew from **$13.0 billion** (2011) to **$31.6 billion** (2021); exports to **ASEAN** rose from **$34.5 billion** to **$40.6 billion** in the same period. • **Services Sector Liberalization**: FTAs liberalize **services trade**, e.g., Norway's commitment to allowing Indian **yoga instructors** and **traditional medicine practitioners**. • **Easing Professional Mobility**: The **India-U.K. FTA** exempts Indian	• **Conditional Investment Pledges**: Investment promises in agreements like **TEPA** depend on high growth (**9.5%**) and high returns (**>16%**), with tariff concessions withdrawable if targets are unmet. • **"Free Rider" Risks in Services**: Agreements may allow companies from **non-FTA countries** to benefit without reciprocal access from their home country. • **Intellectual Property Rights (IPR) Pressures**: FTAs often push for **stricter IPR rules** beyond **WTO (TRIPS)** standards, potentially undermining India's **patent laws**. • **Threat to Government Procurement Policies**: Developed countries seek **non-discriminatory access** to India's procurement market, challenging **Make in India** policies. • **Conflict with National Self-Reliance Goals**: Aggressive FTAs may conflict with **'Make in India'** and **'Atmanirbhar Bharat'** policies by limiting subsidies or domestic preferences. • **Concerns Over Influx of Goods**: India seeks strong **Rules of Origin** to prevent goods from **non-FTA countries**, especially **China**, from flooding the market.

workers from **social security** contributions for three years, benefiting **Indian tech companies**. • **Supply Chain Resilience & Ease of Business**: FTAs enhance **regulatory transparency**, making India a more reliable **global partner**.	• **Inclusion of Non-Trade Issues**: The inclusion of **environment**, **labor**, and **human rights** issues can complicate negotiations and act as protectionist measures. • **Low FTA Utilization Rates**: India's **FTA utilization rate** with **ASEAN** is **below 50%**, indicating underutilization of trade benefits. • **India-South Korea CEPA Concerns**: India's **exports to Korea** dropped from **$8 billion** (2021-22) to **$6.41 billion** (2023-24), with unresolved access to the **steel market**.

CASE STUDY

The **India-UAE CEPA** (2022) inadvertently created a major **loophole** by allowing unlimited **duty-free gold imports**. Global suppliers exploited this by **rerouting shipments** through the UAE to evade India's standard 15% tariff, causing an unsustainable import surge.

In response, the government cut general import duties to 6% as a partial fix. However, the **trade deficit** with the UAE still **soared by 70.4%** by October 2024.

Given the significant economic strain, the only viable solution is to **renegotiate the CEPA** to revoke these specific concessions and curb the misuse of the trade route.

Suggestions for India's FTA Strategy

- **Comprehensive Economic Treaties**: India should negotiate **trade and investment** as a unified component, similar to previous FTAs with **Japan** and **Korea**, for clearer leverage in negotiations.
- **Strategic Investment Protection**: Expand investment issues in FTAs to include **effective protection mechanisms** and robust **international dispute settlement** to boost **foreign investor confidence**.
- **Clear and Consistent Policy Framework**: India needs a **well-defined FTA policy** to navigate complex trade and investment laws effectively.
- **Cautious Approach to Government Procurement**: India should **protect** its ability to use **public procurement** to promote **domestic industries** under initiatives like **Make in India**.
- **Boosting FTA Utilization**: The government should **address low FTA utilization rates**, ensuring negotiated benefits translate into **tangible export gains** by collecting industry inputs and improving **regulatory processes**.

India-UK Free Trade Agreement (FTA) Analysis

Concluded in May 2025 after three years of negotiations, this FTA is a significant milestone. It aims to double bilateral trade to **$120 billion by 2030**.

Key Provisions

- **Tariff Elimination**:
  - **99%** of **Indian exports** to the UK and **90%** of **UK exports** to India enjoy **zero tariffs**.
  - **Tariff reductions** on **cars** (from 100% to 10%) and **whisky/gin** (from 150% to 40% over 10 years).

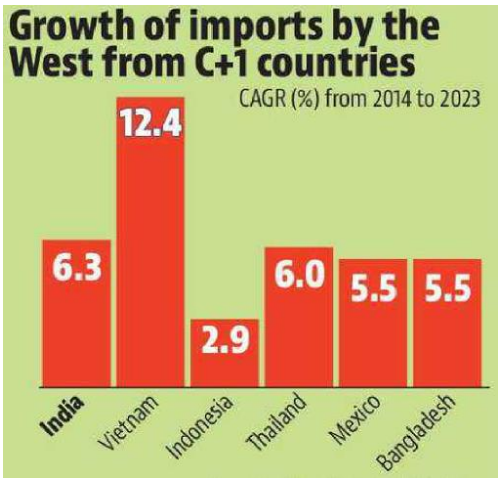
Student Notes:

- **Services and Mobility**:
  - Easier **professional mobility** for Indian workers in the UK, with a **3-year social security exemption**.
  - **60,000 IT professionals** to benefit annually.
- **Investment**:
  - Expected boost in **FDI** and **economic growth**; UK FDI into India increased fivefold (2014-2023).
- **Sectoral Benefits**
  - **India**: **Textiles**, **leather**, and **auto parts** to grow.
  - **UK**: **Automotive**, **beverages**, and **medical devices** sectors to benefit.
- **Challenges**
  - **Competition**: Increased for **Indian industries** like **automobiles** and **medical devices**.
  - **Regulatory Compliance**: Need to adapt to new **digital trade** and **IP** rules.
  - **Trade Balance**: Potential long-term concerns for India's trade balance.

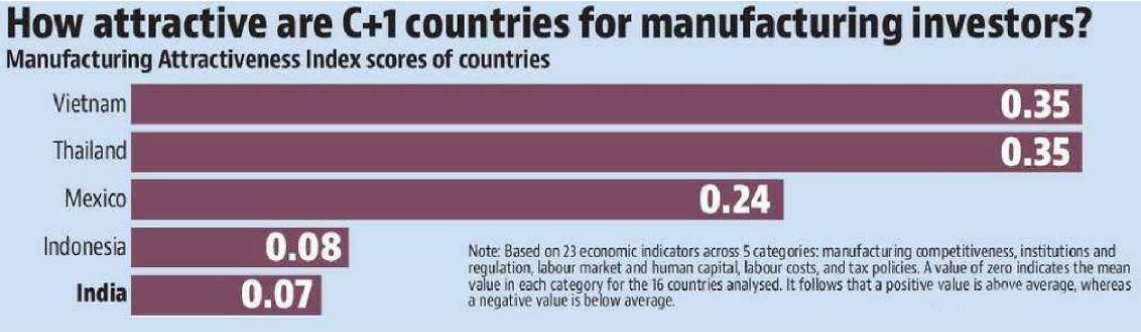
The **India-UK FTA** offers significant opportunities for trade, investment, and growth, but successful implementation and adaptation will be essential.

4.7.3. The 'China+1' Opportunity

- **What it is:** A global business strategy where companies diversify their manufacturing and supply chains away from a sole dependency on China to mitigate risks. This trend has been accelerated by US-China trade tensions and the supply chain disruptions witnessed during the COVID-19 pandemic.
- **India's Opportunity:** India is well-positioned to benefit from this shift due to:
  - **Demographic Dividend:** A large, young workforce with a median age of 28.
  - **Cost Competitiveness:** India's average manufacturing wage is **47% lower than China's**.
  - **Large Domestic Market:** A vast and growing consumer base of 1.4 billion people.
  - **Policy Push:** Initiatives like **PLI schemes** and **Make in India** are creating a more conducive environment for manufacturing.



- **Sectors to Benefit:** Key sectors poised for growth include **electronics, pharmaceuticals, textiles, and automotive components**. The recent interest of 28 global companies in relocating to India, with 8 in the electronics sector, highlights this potential.
- **Challenges:**
  - **Stiff Competition:** India faces strong competition from other ASEAN countries like **Vietnam and Thailand**, which have seen higher import growth from the West (**12.4% CAGR** vs. India's 6.3%).
  - **Structural Hurdles:** High average tariffs (**14.7%**), complex regulations, infrastructure gaps, and restrictive labour laws remain significant deterrents for foreign investors.



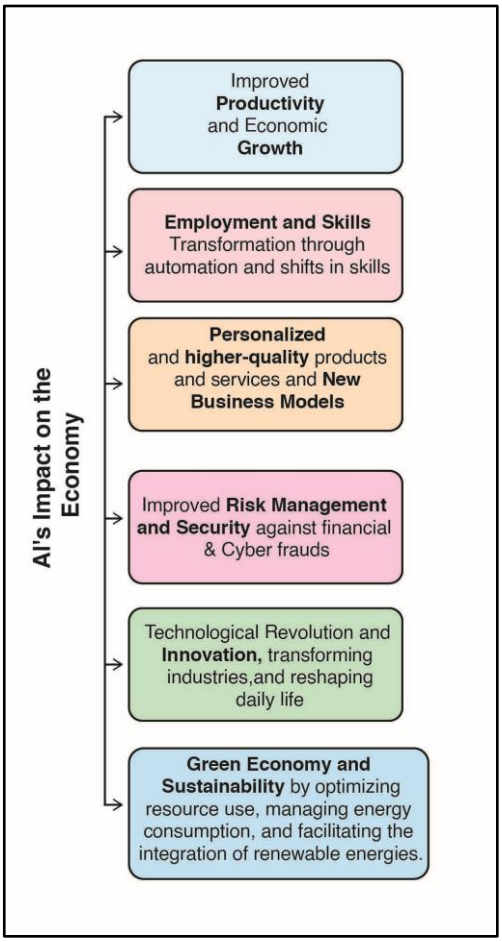
The 'China Plus One' strategy presents a historic opportunity for India. To fully capitalize on it, a concerted effort is needed to address structural bottlenecks, improve the ease of doing business, and enhance global competitiveness.

4.7.4. The Impact of Artificial Intelligence on Industry and Employment

AI is set to revolutionize manufacturing and services through automation, data analytics, and improved efficiency.

Challenges related to AI for the Economy

- **Job Displacement**: AI could affect **300 million jobs**, automating **25%** of the labor market, particularly in **administrative**, **legal**, and **engineering** sectors.
- **Digital Divide**: The rapid evolution of AI creates **skill gaps** and exacerbates the **digital divide**. India needs continuous investment in **skill development**.
- **Data & Infrastructure**: AI requires vast, **high-quality data**, but challenges exist due to **inconsistent standards** and inadequate **digital infrastructure**.
- **Ethical Issues**: **Algorithmic bias** and **data privacy** concerns may amplify **inequity**. The government is developing a **framework** for responsible AI use.
- **Regulatory & Market Control**: **Autonomous vehicle** technologies are under-regulated, and AI markets are dominated by **oligopolies** like **GAFAs**, leading to **anti-competitive effects**.
- **"Engle's Pause":** The Economic Survey 2024-25 warns of a potential "**Engle's Pause**," a period where productivity gains from technology do not immediately translate into higher wages for labour.



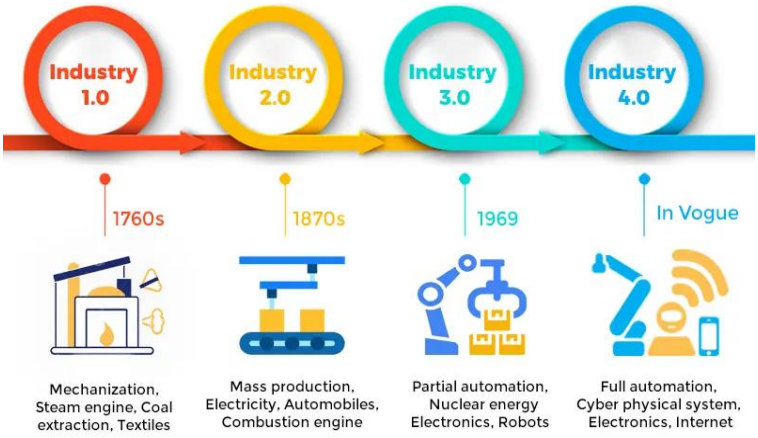
The key is to manage the transition through massive investment in **reskilling and upskilling** the workforce to prepare them for the jobs of the future.

4.7.5. Industry 4.0 and India's Preparedness

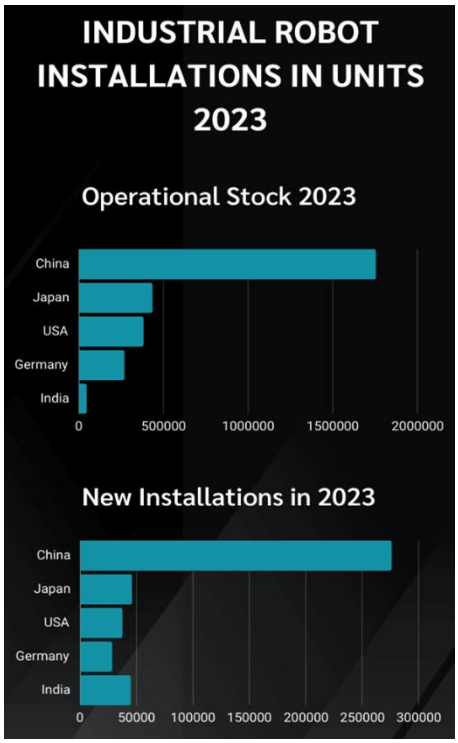
- **What is Industry 4.0?** Often called the Fourth Industrial Revolution, Industry 4.0 refers to the creation of **"smart factories"** by integrating digital technologies into manufacturing processes. It connects the physical and digital worlds through **Cyber-Physical Systems (CPS)**, the **Internet of Things (IoT)**, and **Artificial Intelligence (AI)**, enabling customized and flexible mass production.

Student Notes:

- **India's Adoption:**
  - India's adoption of Industry 4.0 is gaining momentum. A **NASSCOM report** projects that digital technologies will account for **40%** of total manufacturing expenditure by 2025, up from 20% in 2021.



  - India's industrial automation market is projected to grow at a **CAGR of 14.26%** to reach **$29.43 billion by FY2029**.
  - **Sectoral Impact:**
    - **Automotive:** AI-powered robotics and **AR/VR** are being used for process optimization and training.
    - **Electronics: AI-driven machine vision** is enhancing quality control in the assembly of intricate components.
    - **Pharmaceuticals:** AI is being leveraged for drug discovery, process monitoring, and quality control.



- **Government Initiatives:**
  - **National Program on Artificial Intelligence:** Aims to develop and deploy AI-based solutions across various sectors.
  - **National Mission on Interdisciplinary Cyber-Physical Systems:** Focuses on integrating AI in manufacturing through smart factories.
  - **SAMARTH Udyog Centres:** These centres are being established to help SMEs learn and adopt new technologies.
- **Challenges:**
  - **High Investment Costs:** The initial capital required for adopting Industry 4.0 technologies is a major barrier, especially for MSMEs.
  - **Cybersecurity Risks:** Increased connectivity makes factories more vulnerable to cyber-attacks.
  - **Skill Gap:** There is a significant shortage of a workforce trained in advanced digital skills like data analytics, AI, and robotics.
  - **Lack of Standards:** A lack of common standards for interoperability between different systems and machines can hinder seamless integration.

In conclusion, **India's manufacturing sector** stands at the threshold of a transformative journey with **Industry 4.0**. By addressing challenges like **cost, skill gaps**, and **infrastructure**, and focusing on **collaboration**, **skilling the workforce**, and supporting **SMEs**, India can leverage **advanced technologies** such as **AI** and **ML**. These efforts will solidify India's position as a **global manufacturing leader**.

4.8 Additional Insights from Economic Survey 2024-25

Student Notes:

Industrial Growth Trends:

- The **industrial sector** grew by **6.2%** in FY25, driven by **electricity** and **construction**, surpassing the five-year pre-pandemic average. However, growth slowed to **3.6%** in Q2 FY25 due to:
  - **Slowdown in manufacturing exports** caused by global economic challenges and aggressive **trade policies**.
  - **Monsoon impacts**, which boosted agriculture but disrupted **mining** and **construction**.
  - **Festival timing variations**, affecting consumer spending patterns.
- **Core Input Industries**:
  - **Cement**: India, the second-largest producer globally, had a **639 million tonne** installed capacity in FY24, producing **427 million tonnes**. Domestic consumption is **290 kg per capita**, below the global average of **540 kg**.
  - **Steel**: Crude and finished steel production grew by **3.3%** and **4.6%**, respectively, in April-November FY25, driven by **infrastructure spending** and **National Steel Policy**.
  - **Chemicals and Petrochemicals**: Contributed **9.5%** to **manufacturing GVA** in FY23, with a **45% import dependence** for **petrochemical intermediates**.
- **Capital and Consumer Goods**:
  - **Capital Goods**: Recorded robust growth in FY24 but faces **import dependence** for high-end machinery due to **technology gaps**. **Phase II** of the **Scheme for Enhancement of Competitiveness** promotes **technology innovation** and **common engineering facilities**.
  - **Automobiles**: Achieved **12.5% domestic sales growth** in FY24, supported by a one-year **PLI scheme** extension.
  - **Textiles**: Contributes **11%** to **manufacturing GVA**, with **$2.58 billion** in **technical textiles** exports in FY24. Challenges include **MSME dominance**, **logistical costs**, and reliance on **cotton** over **man-made fibres (MMF)**.
  - **Pharmaceuticals**: The third-largest globally by volume, with a **₹4.17 lakh crore** turnover in FY24 and **₹2.19 lakh crore** in exports. **Medical devices** grew at a **15% CAGR**, holding a **1.5% global market share**.

R&D and Innovation:

- India's **gross expenditure on R&D (GERD)** reached **₹1,27,381 crore** in FY21, but at **0.64% of GDP**, it lags behind global leaders like **China (2.1%)** and the **USA**. **Private sector** contribution is low, with **government funding** dominating, unlike **China** and **South Korea**, where businesses contribute over **70%**.
- **Patent filings** doubled since FY15, with **50% resident filings** in FY24. **Women applicants** increased from **15** in FY15 to **5,183** in FY24. India ranks **6th globally** in **patent filings** and **7th** in **intangible asset intensity** (WIPO, 2024).
- Initiatives like the **Patent (Amendment) Rules 2024**, **Start-Up Intellectual Property Protection Scheme**, and **IP Saarthi Chatbot** have streamlined **IP processes**.

MSME Sector:

- Employs **23.24 crore individuals** as of November 2024. The **Udyam Registration Portal** and **Udyam Assist Platform** formalized **2.39 crore informal micro enterprises** by 2025, enabling **priority sector lending**.
- The **Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE)**, with a **₹9,000 crore corpus**, facilitated **₹2 lakh crore** in additional credit. Guarantee coverage increased from **₹2 crore** to **₹5 crore**, with **50% reduced fees**.

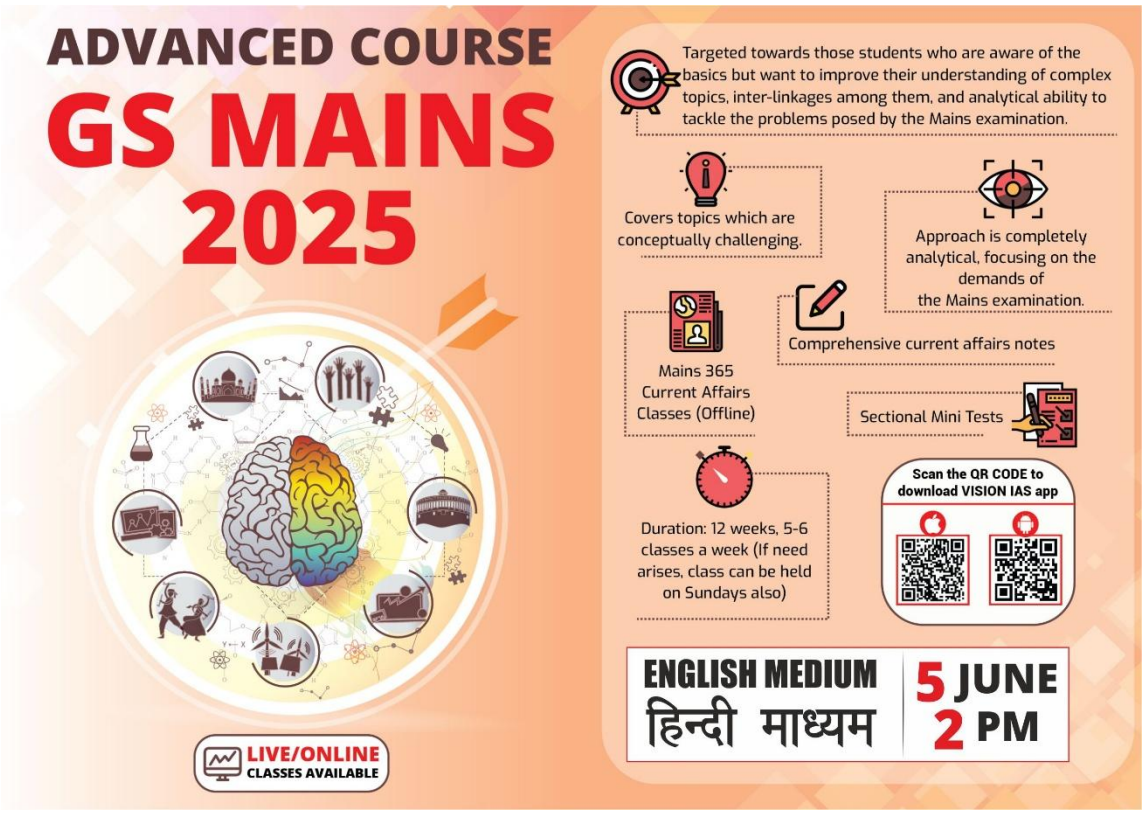
- **TReDS** ensures timely payments to **MSMEs**, with states like **Goa** and **Tamil Nadu** leading adoption. **CPSEs** like **BHEL** and **NTPC** and corporates with **₹250 crore+ turnover** are mandated to join.

State-Level Industrial Variations:

- **Gujarat**, **Maharashtra**, **Karnataka**, and **Tamil Nadu** account for **43% of industrial GSVA**, while **Northeast states** (excluding Assam and Sikkim) contribute **0.7%** (FY23, constant prices).
- **Tamil Nadu** leads in **footwear** and **leather**, contributing **38%** to India's output and **47%** to **leather exports**, driven by initiatives like the **Footwear and Leather Products Policy 2022** and **Guidance** agency.
- The **Business Reform Action Plan (BRAP) 2020** shows a positive correlation between **ease of doing business** and **industrial activity**, emphasizing **deregulation**.

India's path to becoming a **manufacturing powerhouse** requires synchronized efforts from **government**, **private sector**, **academia**, and **financial stakeholders**, with a focus on **innovation**, **infrastructure**, and **inclusive growth**.

Student Notes:



5. LAND REFORMS

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. What were the factors responsible for the successful implementation of land reforms in some parts of the country? Elaborate (2024, 10 Marks) **2.** State the objectives and measures of land reforms in India. Discuss how land ceiling policy on landholding can be considered as an effective reform under economic criteria. (2023, 10 Marks) **3.** How did land reforms in some parts of the country help to improve the socio-economic conditions of marginal and small farmers? (2021, 10 Marks) **4.** Discuss the role of land reforms in agricultural development. Identify the factors that were responsible for the success of land reforms in India. (2016, 12.5 marks) **5.** In view of the declining average size of land holdings in India which has made agriculture non- viable for a majority of farmers, should contract farming and land leasing be promoted in agriculture? Critically evaluate the pros and cons. (2015, 10 marks) **6.** The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 has come into effect from 1st January, 2014. What are the key issues which would get addressed with the Act in place? What implications would it have on industrialization and agriculture in India? (2014, 12.5 marks) **7.** Establish the relationship between land reforms, agriculture productivity and	This is a classic topic where the questions are consistent, testing your historical and analytical understanding of land as a critical factor of production and social justice. The questions are built around the twin objectives of land reform: **equity** (redistributing land and ensuring social justice) and **efficiency** (improving agricultural productivity). You are frequently asked to establish the link between these goals. **Q.** Establish the relationship between **land reforms, agriculture productivity and elimination of poverty** in the Indian economy. Discuss the difficulties in designing and implementation of agriculture-friendly land reforms in India. (2013, 10 marks) A recurring theme is a comparative analysis of its implementation across the country, requiring you to know the specific reasons behind its success in some states versus its general failure at a national level. **Q.** What were the **factors responsible for the successful implementation of land reforms** in some parts of the country? Elaborate (2024, 10 Marks) **Q.** How did land reforms in some parts of the country help to **improve the socio-economic conditions** of marginal and small farmers? (2021, 10 Marks) The focus also extends to contemporary issues arising from the legacy of incomplete reforms, such as the economic non-viability of small holdings and the need for modern legal frameworks. **Q.** In view of the **declining average size of land holdings** in India which has made agriculture non- viable for a majority of farmers, should **contract farming and land leasing** be promoted in agriculture? Critically evaluate the pros and cons. (2015, 10 marks) **How to Answer Questions in this Theme:** • For questions asking you to **establish a relationship** (e.g., between reforms and poverty), draw a clear causal link: **Secure land tenure -> Incentive for farmers to invest -> Increased agricultural productivity -> Higher income -> Poverty reduction**. Use this as your framework. • When analyzing the **success/failure of reforms**, structure your answer with clear headings. Discuss the factors behind success (e.g., **Strong Political**

Student Notes:

elimination of poverty in the Indian economy. Discuss the difficulties in designing and implementation of agriculture-friendly land reforms in India. (2013, 10 marks)	**Will, Effective Bureaucracy, Peasant Movements**) and failure (e.g., **Legal Loopholes, Benami Transfers, Lack of Land Records**). • When evaluating **modern reforms** like contract farming or land leasing, always present a balanced **pros-and-cons analysis**, discussing both the potential for efficiency gains and the risks of farmer exploitation.

Student Notes:

5.1. The Enduring Significance of Land Reforms

Man's Relationship with the Land

Man's relationship with **land** is deeply important, shaped by factors like **climate**, **economy**, **culture**, and **politics**. In **farming communities**, who owns and has access to land is critical, affecting the lives of millions in developing countries. The way **land ownership** often determines the **social structure**, with those controlling land holding more power. **Land** is also linked to **survival**, especially when there are limited job opportunities.

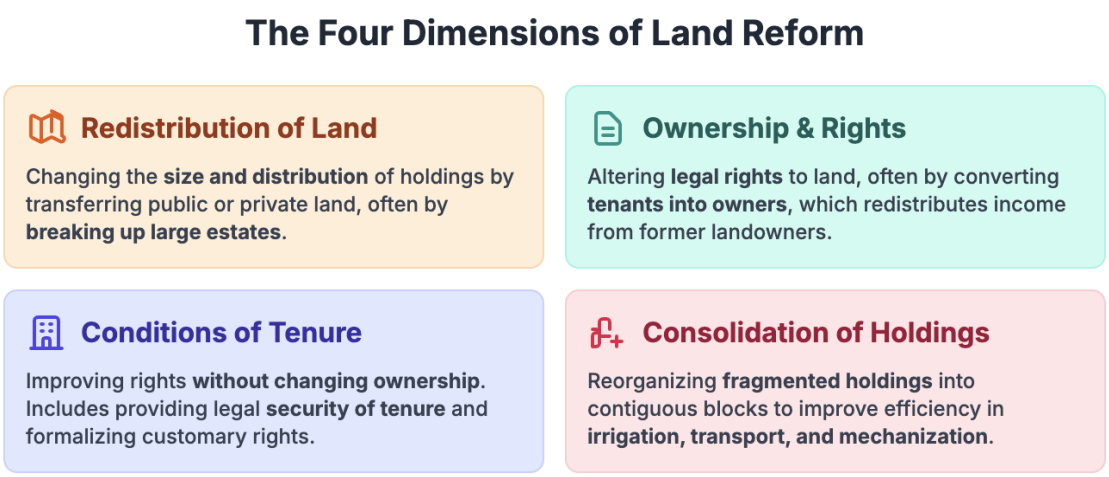
This relationship is constantly changing, influenced by factors like **population growth**, new **technologies**, and **political ideas**. As populations grow and land remains fixed, old systems of land distribution may not work, leading to the need for **land reforms**.

5.1.1. What is Land Reform?

Land reform is a deliberate intervention in the prevailing patterns of **landownership, control, and usage**. Its objectives are **economic** (increasing productivity), **social** (equitable wealth distribution), and **political** (expanding employment).

- Land is also a source of **political power**, making land reform an inherently **political process**.
- Meaningful reform challenges the power base of elites and requires strong **political will** and shifts in power for successful implementation.
- It differs from other reforms as it targets a **single sector** and involves a **fixed tangible asset** crucial for livelihoods in developing nations.

5.1.2. The Dimensions of Land Reform



These dimensions are often combined within broader **agrarian reform** (which includes credit, pricing, etc.) and **rural development** programs. Where tenure systems are an impediment, land reform is often a **necessary precondition** for unlocking agricultural potential and achieving a just society.

Student Notes:

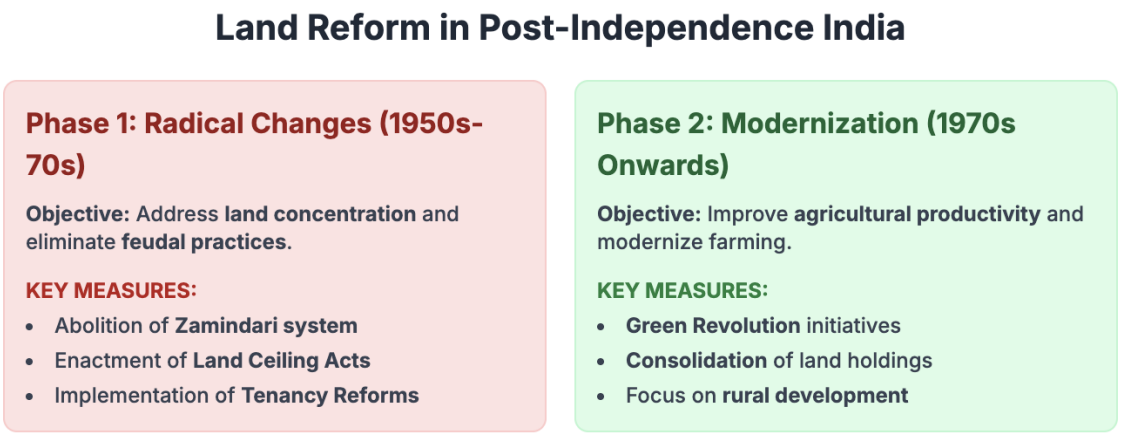
5.1.3. Context and Objectives of Land Reforms in India

The British introduced land tenure systems—primarily the **Zamindari, Ryotwari, and Mahalwari systems**—designed for revenue extraction. This created a highly exploitative agrarian structure with a class of intermediaries, insecure tenants, and widespread landlessness, leading to stagnant agricultural productivity. Correcting this historical injustice was a primary goal post-1947.

The core objectives of land reform were:

5.2. Land Reforms in the Post-Independence Era

The land reform program in post-independence India evolved through two distinct phases. The first phase, from the 1950s to the early 1970s, focused on radical institutional changes, while the second phase, from the 1970s onwards, shifted towards modernization and consolidation.



5.2.1. Phase I (1950s-1970s): Abolition of Intermediaries and Tenancy Reforms

1. **Abolition of the Zamindari System:** This was the first and most successful component of land reforms. Starting with the **U.P. Zamindari Abolition and Land Reform Act of 1950**, most states passed legislation to abolish intermediary tenures like zamindari and jagirdari.

Impact	Limitations
• This brought an estimated **20 million cultivators** into a direct relationship with the state, freeing them from the exploitation of intermediaries. • It also **vested large areas of private forests and wastelands** in the state.	• Landowners were often able to retain large tracts of land under the guise of **"personal cultivation"** (khudkasht), leading to the eviction of many tenants. • Also, the compensation paid to the erstwhile intermediaries placed a significant financial **burden on the state** exchequer.

2. **Tenancy Reforms:** These reforms aimed to provide **security to tenant cultivators** and were based on three main principles:

Regulation of Rent	Security of Tenure	Conferment of Ownership Rights
• The First Five Year Plan recommended that rent should not exceed **one-fourth to one-fifth** of the gross produce. • Most states enacted laws to this effect, but enforcement remained weak due to the tenants' poor bargaining power.	• Laws were passed to protect tenants from arbitrary eviction. • However, loopholes such as "**voluntary surrenders**" and the broad definition of "**personal cultivation**" were widely used by landowners to evict tenants.	• The ultimate goal was to make the tiller the owner of the land. • By the end of the Third Plan, it was estimated that about **11.2 million tenants** had acquired ownership rights over **15.3 million hectares** of land. • However, a large number of informal and oral tenants were left out.

3. **Land Ceiling Acts:** To **reduce the concentration of land ownership** and **redistribute surplus land to the landless** and marginal farmers.

   Implementated in Two Phases:

   - **Phase I (pre-1972):** The ceiling was fixed for individual landholders, which allowed landowners to circumvent the law by transferring land to relatives.
   - **Phase II (post-1972):** Following the **National Guidelines of 1972**, the ceiling was lowered and the unit of application was shifted from the individual to the family (of five members). The ceiling limit was set at **10-18 acres** for high-quality irrigated land and up to **54 acres** for dryland.
     - **Limited Success:** The implementation of ceiling laws was largely ineffective. By the end of the Eighth Plan, only about **2.3 million hectares** had been declared surplus, of which **2.09 million hectares** were distributed among **5.5 million beneficiaries**. This was a fraction of the land held above the ceiling limits.
     - **Reasons for Failure:**
       - **Legal Loopholes and Exemptions:** Numerous exemptions for plantations, religious trusts, and other categories of land diluted the impact of the law.
       - **Benami Transfers:** Landowners resorted to fraudulent transfers of land in the names of relatives and others to evade the ceiling.
       - **Lack of Political Will:** Strong opposition from landed elites and a lack of political will in many states hampered effective implementation.

5.2.2. Phase II (1970s onwards): Consolidation and Modernization

- **Land Consolidation:**
  - **Objective:** To address the problem of **fragmentation of holdings**, where a single farmer's land is scattered in small, non-contiguous plots. Consolidation aims to amalgamate these fragments into a single, larger plot to improve agricultural efficiency.
  - **Progress:** The program saw considerable success in states like **Punjab, Haryana, and Uttar Pradesh**.
  - **Challenges:** The process was slow in many states due to the fear among tenants and sharecroppers of being displaced, and the apprehension of small farmers that they would receive poor-quality land in the exchange.
- **The Shift Towards Land Records Modernization:**
  - It was recognized that the lack of accurate and up-to-date land records was a major impediment to the success of all land reform measures.
  - The **Centrally Sponsored Scheme for Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR)** was launched in 1987-88 to address this issue.
  - This marked a shift in focus from redistributive reforms to improving the system of land governance through better record-keeping and administration.

A Global Snapshot of Land Reform

Taiwan: The Equity Model

Period: 1949-1953

Tactic: A "land-to-the-tiller" program using rent reduction and land redistribution.

Legacy: Slashed tenancy from 41% to 16%, boosting productivity and creating even income distribution.

South Korea: The Stability Model

Period: 1945-1953

Tactic: Imposed a strict 3-hectare ceiling and redistributed confiscated Japanese property.

Legacy: Achieved stability but created very small farms, constraining long-term income growth.

Japan: The Restructuring Model

Period: Late 1940s

Tactic: Enforced a 1-hectare ceiling, forcing land sales at confiscatory prices.

Legacy: Achieved greater social equity but worsened land fragmentation and created undersized farms.

Mexico: The Communal Model

Period: Post-1910 Revolution

Tactic: Created village groups (*ejidos*) with communal usufruct rights, not private ownership.

Legacy: Broke the semi-feudal system and increased social mobility, but skewed income remains a challenge.

5.3. A Critical Assessment of Land Reforms

The legacy of land reforms in India is complex and marked by a significant **gap between legislative intent and on-the-ground reality**. While some measures achieved notable success, others were largely ineffective, leading to a highly uneven impact across the country.

5.3.1. An Overview of the Mixed Success

Clear Success - Abolition of Intermediaries:	Partial and Geographically Concentrated Success - Tenancy Reforms:	Largely a Failure - Land Ceilings
• The abolition of the **Zamindari system** legally ended the feudal structure and brought	• While laws were passed to regulate rent and provide security of tenure, their	• The imposition of ceilings on land holdings was the least successful aspect of land reform.

millions of cultivators into direct contact with the state, giving them a sense of ownership and security.	implementation was weak in most states. • However, in states where these reforms were vigorously pursued (like **West Bengal and Kerala**), they led to significant positive outcomes.	• The amount of surplus land declared and redistributed was minuscule compared to the estimates, and the policy did little to alter the highly skewed pattern of land ownership in most parts of the country.

5.3.2. Factors Behind Successful Implementation

The success of land reforms, where it occurred, was not accidental. It was driven by a combination of political, social, and administrative factors.

- **Strong Political Will:** The most critical factor was the commitment of the state government.
  - States such as **West Bengal, Kerala** and the early government in **Jammu & Kashmir** demonstrated the political will to push through and implement radical land reform measures despite opposition from landed elites.
- **Peasant Mobilization and Pressure from Below:** Organized peasant movements played a crucial role in creating pressure for reform and ensuring its implementation.
  - Example: The **Tebhaga movement** in Bengal created the political context for tenancy reforms, and it led to the success of **"Operation Barga"** in West Bengal.

Case Study: West Bengal's "Operation Barga" - Operation Barga was a land reform initiative launched in West Bengal, India, in 1978, primarily focused on recording the rights of sharecroppers (**bargadars**) and ensuring their security of tenure.

The success of this program, which recorded the rights of over **1.4 million sharecroppers**, was heavily dependent on the active participation of peasant organizations and the political backing of the government. This created a synergy between **"top-down" legislation and "bottom-up" mobilization**.

- **Effective Bureaucracy and Administrative Support:** A committed and efficient administrative machinery was essential for implementing complex tasks like identifying surplus land, recording the rights of tenants, and managing the redistribution process.

Case Study: Jammu & Kashmir's Early Reforms - The **Big Landed Estates Abolition Act, 1950**, was implemented swiftly and effectively due to a strong political mandate and an administration committed to breaking the power of the old landed aristocracy. This led to a significant redistribution of land to the tillers.

- **Accurate Land Records:** The availability of **reliable and up-to-date land records** was a crucial precondition for the success of any reform measure.
  - States that invested in surveying and updating their land records were better able to implement ceiling and tenancy laws.

5.3.3. Reasons for Widespread Failure

The general failure of land reforms, particularly land ceilings, can be attributed to a powerful combination of factors that undermined the legislative process from the outset.

- **Lack of Political Will and Dominance of Landed Elites:** In most states, the political leadership lacked the commitment to implement radical land reforms. The landed elites, who stood to lose from these reforms, wielded significant political power and were able to dilute the legislation and obstruct its implementation.

Student Notes:

- **Legal Loopholes and Flaws in Legislation:** The land reform laws were riddled with loopholes that were exploited by large landowners.
  - The provision for **"personal cultivation"** was defined so broadly that it allowed landowners to resume land from tenants on a massive scale.
  - Numerous **exemptions** for plantations, religious trusts, and other categories of land effectively kept a large amount of land outside the purview of the ceiling laws.
- **Benami Transfers and Fictitious Divorces:** To circumvent the ceiling laws, landowners resorted to large-scale fraudulent transfers of land in the names of relatives, friends, and even non-existent persons (**benami transfers**).
- **Absence of Updated and Accurate Land Records:** In most parts of the country, the land records were outdated and did not reflect the ground reality of ownership and cultivation, making it nearly impossible to identify surplus land or protect the rights of tenants.
- **Lack of Organization Among Beneficiaries:** The intended beneficiaries of land reform—the landless labourers and poor peasants—were largely unorganized and lacked the political power to demand their rights and ensure the effective implementation of the laws.

2023 Question: State the objectives and measures of land reforms in India. Discuss how land ceiling policy on landholding can be considered as an effective reform under economic criteria. (10 Marks)

Economic Arguments on Land Reform: Equity vs. Efficiency (Kaushik Basu's Research)

Efficiency Argument:

- **Inverse Farm-Size Productivity**: **Small farms** are more productive per hectare than large ones because they use **family labor** intensively. **Redistributing land** to smaller farms could increase overall **productivity**.
- **Incentive Problem in Tenancy**: **Sharecropping** reduces incentives for tenants. A tenant who gives half of their output to the landlord works less than an **owner-cultivator**. **Converting tenants to owners** boosts **productivity**.

Why Inefficiencies Persist:

- **Market Frictions**: Landlords may prefer inefficient **sharecropping contracts** over **fixed-rent** ones due to tenants' inability to pay upfront rent or bear risks, even if the latter is more efficient.

Impact of Land Reform on Productivity:

- **Positive Impact**: In places like **West Bengal**, **tenancy reforms** under "**Operation Barga**" improved **productivity** by giving tenants **security** and a fair share of the produce.
- **Negative/Uncertain Impact**: Nationally, the effects are mixed. Poorly implemented reforms, like in some regions, created uncertainty, discouraging landowners from leasing out land and reducing **productivity**.

Conclusion:

- **Poverty Reduction**: **Land reforms** have successfully reduced **poverty**.
- **Impact on Productivity**: The success depends on **implementation**. Well-executed reforms boost both **equity** and **efficiency**, while weak reforms may harm productivity despite offering equity benefits.

5.4. Contemporary Challenges in Land Management

Despite decades of reform efforts, India's land management landscape is fraught with deep-seated challenges that hinder agricultural productivity, fuel social conflict, and impede economic development.

Student Notes:

5.4.1. Pervasive Landlessness and Inequality

1. **Widespread Landlessness:** A significant portion of the rural population remains landless.
   - The **Socio-Economic Caste Census (SECC) 2011** revealed that **56.4%** of rural households own no agricultural land.
   - More recent **NSSO data (2022-23)** estimates that **11%** of rural households are completely landless, with many more owning marginal plots insufficient for a sustainable livelihood.
- **Caste-Based Disparities:** Land ownership is strongly correlated with caste.
  - **Scheduled Castes (SCs)**, who constitute **16.6%** of the population, own only **8.6%** of the farmland (Agricultural Census 2015-16). In states like Punjab, SCs (32% of the population) own a mere **3.5%** of the land.
  - **Scheduled Tribes (STs)** face severe land alienation due to weak enforcement of protective laws, which is a key driver of social unrest and **Left-wing extremism** in central India.
- **Gender Inequality:** Women's land ownership remains critically low.
  - Only **13.96%** of operational landholdings are owned by women, despite their significant contribution to agricultural labour (over 30%).
  - The lack of land titles disempowers women, limiting their access to credit and government schemes and increasing their vulnerability.

5.4.2. The Economic Drag of Land Fragmentation

- **Declining Farm Sizes:** Due to population pressure and inheritance laws, the average landholding size in India has more than halved, from **2.28 hectares in 1970-71 to 1.08 hectares in 2015-16**. In densely populated states like Bihar and Kerala, the average size is often below **0.5 hectares**.
- **Impact on Productivity and Viability:**
  - **Inefficiency:** Small and fragmented plots lead to inefficient use of resources (soil, water, capital), hinder mechanization, and increase labour costs.
  - **Non-Viability:** For the vast majority of India's **86% small and marginal farmers**, agriculture has become economically unviable, trapping them in a cycle of low income and debt.
  - **Need for Re-consolidation:** While land consolidation was successful in some states initially, the process has stalled. There is an urgent need for a renewed push for consolidation to improve farm efficiency.

5.4.3. The Crisis of Outdated Land Records

- **Inaccurate and Incomplete Records:** Despite the **Digital India Land Records Modernization Programme (DILRMP)** digitizing **98.5%** of rural land records, the underlying data is often outdated and inaccurate. This creates a fundamental trust deficit in the system.
- **Fueling Litigation:** Poor land records are a primary driver of civil litigation in India. The **Economic Survey 2023** noted that **66%** of all civil cases are related to land or property disputes, clogging the judicial system and delaying projects.
- **Exclusion from Credit and Welfare:** The lack of clear and conclusive land titles prevents millions of farmers from accessing institutional credit from banks. It also excludes them from government schemes like **PM-Kisan** that are linked to land ownership.

Student Notes:

5.4.4. Land Acquisition: The Development vs. Displacement Dilemma

- **A Major Source of Conflict:** Land acquisition for industrial and infrastructure projects is one of the most contentious issues in India. It often leads to conflicts over compensation, displacement, and the loss of livelihoods.
- **Impact on Vulnerable Groups:** The process disproportionately affects marginalized communities. **Tribal communities**, in particular, have faced multiple displacements, often without adequate compensation or rehabilitation, as their traditional rights are not always recognized in formal land records.
- **Regulatory Hurdles:** The complex and often slow process of land acquisition under the **RFCTLARR Act, 2013**, can delay critical infrastructure projects, impacting the overall investment climate.

5.5. Modern Land Governance Initiatives

The Government of India has launched several technology-driven and legislative initiatives to modernize land governance.

5.5.1. The Digital India Land Records Modernization Programme (DILRMP)

- **Objective:** To create a modern, comprehensive, and transparent land records management system. The program, extended to **2025-26** with a budget of **₹875 crores**, aims to move from a system of **presumptive titles** to one of **conclusive titling**.
- **Key Components:**
  - **Computerization of Land Records:** Over **95%** of land records have been digitized.
  - **Survey/Re-survey and Updation:** Modern survey techniques like **drone technology** are being used to create accurate land maps.
  - **Integration of Registration and Land Records:** The **National Generic Document Registration System (NGDRS)**, a unified platform for property registration, has been adopted by **18 states**.
    - **Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar:** A 14-digit unique ID for every land parcel, akin to Aadhaar for individuals. It has been rolled out in **29 states/UTs**.
- **Impact:** The program has improved transparency and reduced the scope for fraudulent transactions. However, challenges remain in ensuring the quality of the underlying data and achieving real-time updates.

5.5.2. The RFCTLARR Act, 2013

- **Objective:** To create a more humane, transparent, and participatory process for land acquisition, replacing the archaic Land Acquisition Act of 1894.
- **Key Provisions:**
  - **Higher Compensation:** Mandates compensation of up to **four times the market value** in rural areas and **twice the market value** in urban areas.
  - **Social Impact Assessment (SIA):** Makes an SIA mandatory for all large projects to assess their social costs and benefits.
  - **Consent Clause:** Requires the consent of **80%** of affected families for private projects and **70%** for Public-Private Partnership (PPP) projects.
  - **Rehabilitation and Resettlement (R&R):** Provides for a comprehensive R&R package for affected families, including housing, employment, and other benefits.
  - **Retrospective Application:** The Act's provisions apply to cases where no compensation has been paid or possession has not been taken under the old law.

Student Notes:

- **Impact and Challenges:** While the Act has made the land acquisition process more just and transparent, it has also been criticized for making the process more complex and time-consuming, which can delay critical infrastructure projects.

5.5.3. The SVAMITVA Scheme

- **Objective:** To address the historical anomaly of unrecorded residential (abadi) lands in rural areas. The scheme uses **drone technology** to map these lands and provide a formal **"Record of Rights"** (Property Cards) to village household owners.
- **Significance:**
  - **Monetization of Assets:** Enables rural households to use their property as a financial asset to access loans and other benefits.
  - **Reduced Disputes:** Creates clear property titles, reducing land-related disputes in rural areas.
  - **Improved Planning:** Provides accurate data for better planning of rural infrastructure and services by Gram Panchayats.
- **Progress:** As of late 2024, drone flying has been completed in over **2 lakh villages**, and more than **1 crore property cards** have been prepared.

5.5.4. NITI Aayog's Model Land Leasing Act, 2016

- **Objective:** To address the issue of restrictive tenancy laws in many states, which have driven land leasing into the informal sector. The model act aims to create a legal framework that **protects the rights of landowners** while providing **security of tenure to tenants**.
- **Key Features:**
  - **Legalizes Land Leasing:** Allows landowners to lease out their land without the fear of losing their ownership rights.
  - **Security for Tenants:** Ensures that tenants cannot be evicted during the agreed lease period.
  - **Access to Credit:** Enables tenants to access institutional credit and insurance by using the lease agreement as proof of cultivation.
  - **Flexibility:** Allows the terms of the lease, including the rent, to be mutually decided by the landowner and the tenant.
- **Current Status:** The adoption of the model act by states has been slow, as land remains a sensitive political issue.

Student Notes:

5.6. The Way Forward

The unfinished agenda of land reforms requires a renewed focus, leveraging **modern technology** and **innovative policy solutions** to address historical inequities and contemporary economic needs.

The Way Forward: Modernizing Land Reforms

Conclusive Titling

Goal: Move to **state-guaranteed ownership**.

How to Achieve It:

- Accelerate **DILRMP & SVAMITVA**.
- Enact central law on **conclusive titling**.
- Establish **fast-track land tribunals**.

Efficient Land Leasing

Need: Formalize lease market for productivity.

Path:

- Adopt **Model Land Leasing Act, 2016**.
- Run **awareness campaigns**.
- Link leases to **institutional credit**.

Modern Land Market

Imperative: An **efficient market** for development.

Key Steps:

- Remove **restrictive laws** on land sale.
- Promote **land banks** for industry.
- Encourage **cooperative & contract farming**.

Addressing Urbanization

Challenge: Address **land pressure** from urbanization.

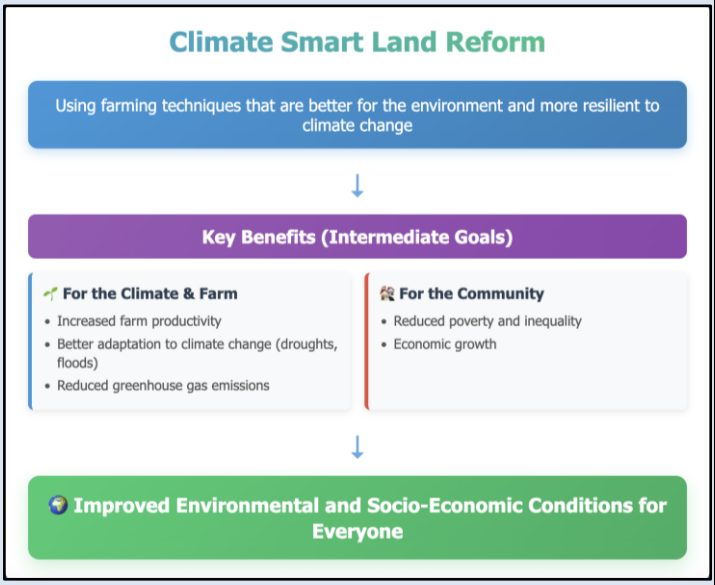
Solutions:

- Use **integrated spatial planning**.
- Use public land for **affordable housing**.
- Ensure **fair land acquisition**.

Need for Climate-Smart Land Reform

Climate change impacts land productivity, increasing vulnerability of farmers, especially in drought-prone and flood-affected regions.

- **Climate-smart land reforms** can enhance **resilience**, promote **sustainable land use**, and improve **agricultural productivity**.
- Integrating climate adaptation strategies into land policies will help mitigate risks, promote environmental sustainability, and ensure long-term food security for vulnerable communities.



6. AGRICULTURE & ALLIED SECTORS

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. Explain the role of millets for ensuring health and nutritional security in India. (2024, 10 Marks **2.** What are the major challenges faced by the Indian irrigation system in recent times? State the measures taken by the government for efficient irrigation management. (2024, 15 Marks **3.** Elucidate the importance of buffer stocks for stabilizing agricultural prices in India. What are the challenges associated with the storage of buffer stock? Discuss. (2024, 15 Marks **4.** How does e-Technology help farmers in production and marketing of agricultural produce? Explain it. (2023, 10 Marks) **5.** Explain the changes in cropping pattern in India in the context of changes in consumption pattern and marketing conditions. (2023, 15 Marks) **6.** What are the direct and indirect subsidies provided to farm sector in India? Discuss the issues raised by the World Trade Organization (WTO) in relation to agricultural subsidies. (2023, 15 Marks) **7.** What are the major challenges of the Public Distribution System (PDS) in India? How can it be made effective and transparent? (2022, 10 Marks) **8.** Elaborate the scope and significance of the food processing industry in India. (2022, 10 Marks) **9.** What are the main bottlenecks in the upstream and downstream process of marketing of agricultural products in India? (2022, 15 Marks) **10.** What is an Integrated Farming System? How is it helpful to small and marginal farmers in India? (2022, 15 Marks) **11.** How and to what extent would micro-irrigation help in solving India's water crisis? (2021, 10 Marks) **12.** What are the salient feature of the National Food Security Act, 2013? How has the Food Security Bill helped in eliminating hunger and malnutrition in India? (2021, 15 Marks) **13.** What are the main constraints in transports and marketing of agricultural produce in India? (2020, 10 Marks)	Agriculture is the undisputed king of the GS-3 Economy paper, consistently commanding the highest weightage. Acing this vast chapter is critical. The questions span the entire agri-ecosystem, from sowing to selling, and are mostly diagnostic in nature. The examiner's focus has decisively shifted from just production to the entire **"farm-to-fork" value chain**. You must be prepared to discuss post-harvest management in detail. **Q.** What are the main **bottlenecks in the upstream and downstream process of marketing** of agricultural products in India? (2022, 15 Marks) **Q.** Elaborate the scope and significance of the **food processing industry** in India. (2022, 10 Marks) Most questions adopt a **problem-solution approach**. They ask you to identify "challenges," "bottlenecks," or "constraints" in a system and then suggest reforms or discuss government initiatives. **Q.** What are the major challenges of the **Public Distribution System (PDS)** in India? How can it be made effective and transparent? (2022, 10 Marks) **Q.** What are the major challenges faced by the **Indian irrigation system** in recent times? State the measures taken by the government for efficient irrigation management. (2024, 15 Marks) You must also have a strong command of the core policy debates that are always in the news: • **Agricultural Subsidies** and their impact. **Q.** What are the **direct and indirect subsidies** provided to farm sector in India? Discuss the issues raised by the

Student Notes:

Student Notes:

14. What are the challenges and opportunities in food processing sector in the country? How can income of the farmers be sustainably increased by encouraging food processing? (2020, 10 Marks)
15. What are the major factors responsible for making the rice-wheat system a success? In spite of this success, how has this system become a bane in India? (2020, 15 Marks)
16. How far is the Integrated Farming System (IFS) helpful in sustaining agricultural production? (2019, 10 Marks)
17. Elaborate the impact of the National Watershed Project in increasing agricultural production from water-stressed areas. (2019, 10 Marks)
18. What are the reformative steps taken by the Government to make the food grain distribution system more effective? (2019, 15 marks)
19. Elaborate the policy taken by the Government of India to meet the challenges of the food processing sector. (2019, 15 Marks)
20. What do you mean by Minimum Support Price (MSP)? How will MSP rescue the farmers from the low-income trap? (2018, 10 marks)
21. Examine the role of supermarkets in supply chain management of fruits, vegetables and food items. How do they eliminate the number of intermediaries? (2018, 10 marks)
22. Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers? (2018, 15 marks)
23. How has the emphasis on certain crops brought about changes in cropping patterns in the recent past? Elaborate the emphasis on millets production and consumption. (2018, 15 marks)
24. Explain various types of revolutions, took place in agriculture after Independence in India. How have these revolutions helped in poverty alleviation and food security in India? (2017, 10 marks)
25. What are the reasons for poor acceptance of cost-effective small processing unit? How the food processing unit will be helpful to uplift the socio-economic status of poor farmers? (2017, 10 marks)
26. What are the major reasons for declining rice and wheat yield in the cropping system? How crop diversification is helpful to stabilise the yield of the crops in the system? (2017, 15 marks)

World Trade Organization (WTO) in relation to agricultural subsidies. (2023, 15 Marks)

- **Minimum Support Price (MSP)** and its role.

Q. What do you mean by **Minimum Support Price (MSP)**? How will MSP rescue the farmers from the low-income trap? (2018, 10 marks)

- The role of **technology** and new trends like **millets**.

Q. Explain the role of **millets** for ensuring health and nutritional security in India. (2024, 10 Marks)

How to Answer Questions in this Theme:

- For any question on an agricultural sub-topic, thinking systematically through the **value chain** (inputs -> production -> post-harvest) will help you generate comprehensive points.
- When asked to critique a policy like **MSP or PDS**, use a standard framework:
  1. Objectives/Rationale,
  2. Functioning/Features,
  3. Successes/Benefits,
  4. Challenges/Inefficiencies, and
  5. Way Forward/Suggestions.
- For **problem-based questions**, categorize the problems clearly (e.g., Infrastructural, Institutional, Financial, Policy-related) and provide specific examples. Ensure your solutions directly address the problems you identified.
- Always try to link your answer to the ultimate national goals of **doubling farmers' income** and ensuring **food and nutritional security**.

Student Notes:

27. How do subsidies affect the cropping pattern, crop diversity and economy of farmers? What is the significance of the crop insurance, minimum support price and food processing for small and marginal farmers? (2017, 15 marks)

28. Given the vulnerability of Indian agriculture to vagaries of nature, discuss the need for crop insurance and bring out the salient features of the Pradhan Mantri Fasal Bima Yojana (PMFBY). (2016, 12.5 marks)

29. Livestock rearing has a big potential for providing non – farm employment and income in rural areas. Discuss suggesting suitable measures to promote this sector in India. (2015, 10 marks)

30. How can the 'Digital India' Programme help farmers to improve farm productivity and income? What steps has the Government taken in this regard? (2015, 10 marks)

31. What are the impediments in marketing and supply chain management in developing the food processing industry in India? Can e-commerce help in overcoming these bottlenecks? (2015, 10 marks)

32. There is also a point of view that Agricultural Produce Market Committees (APMCs) set up under the State Acts have not only impeded the development of agriculture but also have been the cause of food inflation in India. Critically examine. (2014, 12.5 marks)

33. "In the villages itself no form of credit organization will be suitable except the cooperative society". – All India Rural Credit Survey. Discuss this statement in the background of agricultural finance in India. What constraints and challenges do financial institutions supplying agricultural finance face? How can technology be used to better reach and serve rural clients? (2014, 12.5 marks)

34. The Food Security Bill is expected to eliminate hunger and malnutrition in India. Critically discuss various apprehensions in its effective implementation along with the concerns it has generated in WTO. (2013, 10 marks)

35. What are the different types of agriculture subsidies given to farmers at the national and at state levels? Critically analyse the agricultural subsidy regime with reference to the distortions created by it. (2013, 10 marks)

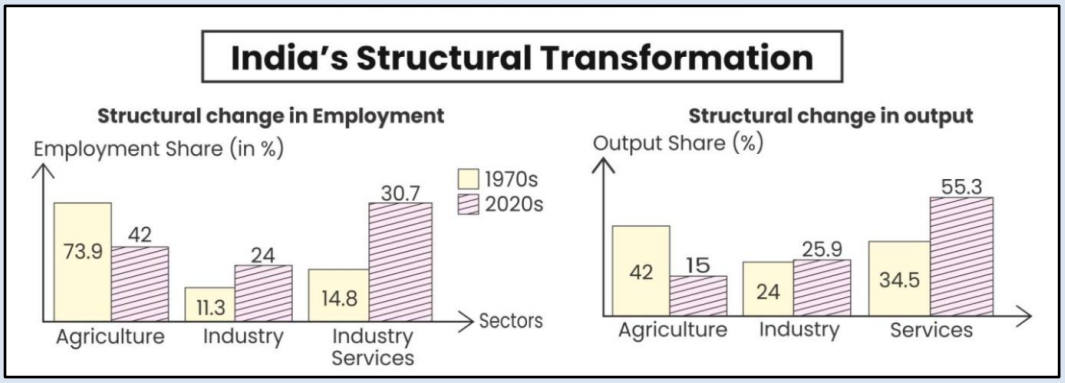
36. India needs to strengthen measures to promote the pink revolution in food industry for ensuring better nutrition and health. Critically elucidate the statement. (2013, 10 marks)

Student Notes:

6.1. Important Data & Facts

6.1.1. Agriculture Sector Performance

- **Growth Rate:** The agriculture and allied sectors have shown robust growth, **averaging 5% annually from FY17 to FY23**. In FY25, it is expected to grow at 3.8%.
- **Contribution to GVA:** The sector contributes approximately **16% to the country's Gross Domestic Product (GDP) for FY24** (Provisional Estimates) and **supports about 46.1% of the population.**



- **Kharif Production (2024-25):** Total Kharif foodgrain production is estimated at a record **1647.05 Lakh Metric Tonnes (LMT)**, which is **8.2% higher** than the five-year average. This increase is primarily due to a **rise in the output of rice, maize, coarse grains, and oilseeds**.
- **Employment:** The agriculture sector remains the dominant employer, with its share of the workforce rising from 44.1% in 2017-18 to **46.1% in 2023-24**. The **share of female workers** in agriculture has significantly increased from 57.0% in 2017-18 **to 64.4% in 2023-24.**
- **Irrigation:** As of FY21, about **55% of the net sown area** receives irrigation. The gross irrigated area as a percentage of the gross cropped area increased from around 49% in FY16 to **55% in FY21.**
- **Agricultural Credit:** Ground-level credit (GLC) to agriculture grew from ₹8.45 lakh crore in FY15 to **₹25.48 lakh crore in FY25**. As of March 2024, there are **7.75 crore operational Kisan Credit Card (KCC) accounts** with an outstanding loan amount of ₹9.81 lakh crore.

6.1.2. Allied Sectors (Horticulture, Animal Husbandry, Fisheries)

- **Growth Drivers:** High-value sectors like horticulture, livestock, and fisheries are primary contributors to agricultural growth. CAGR of Fisheries (13.7%) > Livestock (13%) (FY15 to FY23).
- **Livestock:** The livestock sector's contribution to the agricultural GVA surged from 24.38% in FY15 to **30.23% in FY23**. Production of milk, eggs, meat, and fish all showed positive growth in FY24.
- **Fisheries: Total fish production reached 184.02 lakh tonnes** in FY23, a significant increase from 95.79 lakh tonnes in FY14.
- **Floriculture:** The floriculture industry is recognized as a "sunrise industry" with 100% export orientation. In FY24, India exported **19.7 thousands metric tonnes of floriculture products,** earning ₹717.83 crore.

Food Processing

- **Employment:** The food processing industry is a major employer, accounting for **12.4% of total employment in the organised manufacturing sector.**
- **Exports:** In FY24, the value of agri-food exports, including processed food, was USD 46.44 billion. The **share of processed food exports** in agri-food exports has risen from 14.9% in FY18 to **23.4% in FY24**.

6.2. Characteristics of Indian Agriculture

Student Notes:

1. Predominance of Smallholder Farming: Indian agriculture is characterized by small-scale farming, with over **86% of farmers classified as small and marginal**. This structure directly impacts income levels, with NSS Survey data indicating that **44% of agricultural households earn less than ₹2,000 per month**.

- **Data Point (Average Farm Size):**
  - **India:** 1.08 hectares
  - **USA:** 188.6 hectares
  - **Australia:** 4,331 hectares
  - **EU:** 17.4 hectares

2. High Dependence on Agricultural Employment: The sector is the largest employer in the nation, supporting approximately **44% of the Indian workforce**. This highlights a significant dependence on agriculture for livelihoods compared to industrialized economies.

- **Data Point (Share of Workforce in Agriculture):**
  - **USA:** 1.2%
  - **EU:** 4.2%
  - **China:** 24%

3. A Mixed Cropping System with Production Gaps: Unlike the specialized agriculture in Western nations, India focuses on cultivating food grains like rice and wheat for food security.

Student Notes:

However, this creates deficits in other areas, particularly oilseeds and pulses, leading to high import dependence. India imports **57%–60% of its edible oil** and pulses imports touched a nine-year high of **6.7 million tonnes** in FY25. Oilseed cultivation is also challenged by being **72% rainfed**.

4. Low Farm Mechanization: The level of mechanization in India is low due to small landholdings and farmer income constraints. The overall mechanization level is **47%**, with significant variation by task (e.g., 70% for seed-bed preparation but only 34% for harvesting). The government aims to reach **75% mechanization by 2047**.

- **Data Point (Mechanization Level):**
  - **USA:** ~95%
  - **EU:** >80%
  - **China:** >70%

Key Challenges in India's Oilseed Production

Lower Yield per Hectare: Oilseeds are the **second-largest crop category** in India after food grains, but yields remain low.

Cultivation Challenges: Nearly **72% of oilseed cultivation is rainfed**, making it vulnerable to climate variability.

Crop-Specific Concentrations: Production is **geographically concentrated** in certain states: **Gujarat, Rajasthan, Tamil Nadu, Andhra Pradesh, and Karnataka** collectively contribute **83.4%** of India's total groundnut production.

5. Substantial Contribution to the National Economy: Reflecting its large workforce, the farm sector contributes significantly to India's Gross Domestic Product (GDP), accounting for approximately **17-18%**.

- **Data Point (Agriculture's Share of GDP):**
  - **USA:** ~1%
  - **EU:** ~1.7%
  - **China:** ~7%

6. Lower Agricultural Productivity and Systemic Challenges: Despite being a top producer by volume, India's per-hectare productivity lags global benchmarks. This productivity gap is driven by several systemic challenges:

- **Climate Vulnerability:** Only **55% of the net sown area is under irrigation**, leaving the sector highly vulnerable to droughts and extreme weather.
- **Soil Degradation:** Many soils are deficient in organic carbon and essential micronutrients, hurting fertility.
- **Non-Optimal Water Management:** Declining groundwater levels and practices like continuous flooding for rice cultivation strain water resources and contribute to high GHG emissions.
- **Data Point (Comparative Yields):**
  - **Rice (tonnes/hectare):** India: 2.96 | China: >7 | USA: ~6
  - **Milk (kg/animal/year):** India: 1,800 | China: 6,000 | USA: 10,500

7. Underdeveloped Food Processing & High Post-Harvest Losses: A critical gap is the underdeveloped food processing sector, with India processing **less than 10% of its farm produce**, compared to 60-70% in the USA. This directly leads to high post-harvest losses, especially for perishable commodities like fruits (**19% loss**), vegetables (**18% loss**), and livestock produce (**22% loss**).

Student Notes:

8. Vulnerability to Global Trade Policies: The sector is increasingly exposed to external trade pressures. This includes non-tariff barriers like the EU's **Carbon Border Adjustment Mechanism (CBAM)** and challenging Free Trade Agreement (FTA) negotiations, such as those with New Zealand, whose efficient dairy industry could threaten millions of local livelihoods.

9. Poor Farmers' Income: Indian farmers suffer from poor income realisation. Out of the total agricultural households, **39% are fully dependent on farming for income**. 44% of agricultural households earn less than ₹2,000 per month, 27% earn less than ₹1,000, and 5% of households receive negative returns from farming (**77th round of NSS Survey**).

Unequal fields: A comparative glimpse at global farm incomes

Country	Average farmer income (annual)	Government support	Income of India's farmers
US	$97,984	$1.5 trillion Farm Bill (2023–2028)	1/60th of US
EU	$21,700	€387 billion Common Agricultural Policy (2021–2027)	1/11th of EU
New Zealand	$44,000	No direct subsidies; high R&D and export support	1/23rd of New Zealand
India	$1,900	₹2.8 lakh crore (₹$34 billion) in total support	–

Data: USDA ERS 2024, EU Commission, Federated Farmers NZ Report 2024, NSSO, MoF India

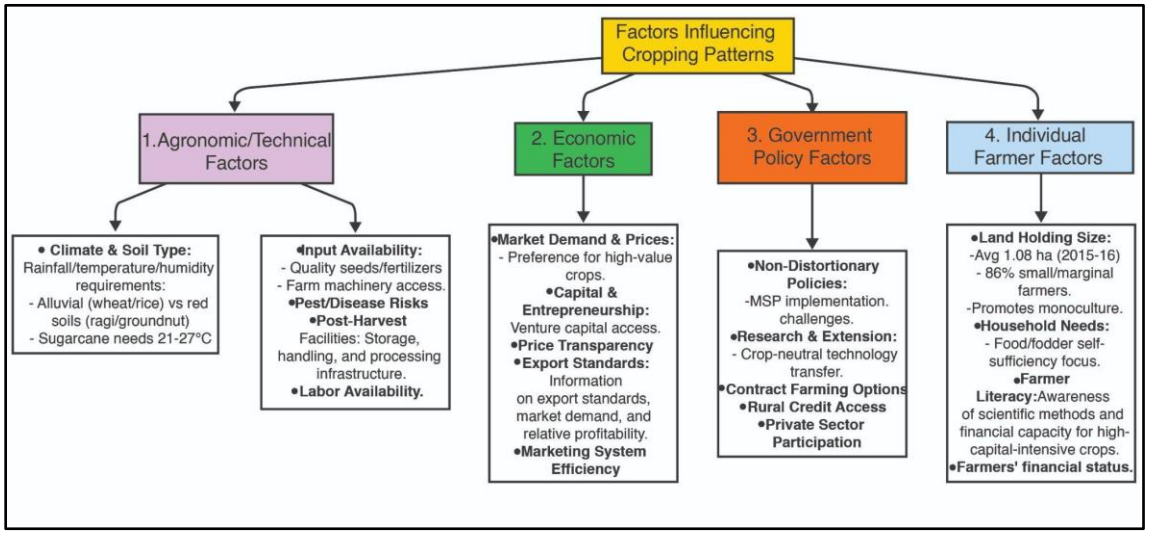
6.3. Sectoral Analysis of Indian Agriculture

6.3.1. Cropping Patterns in India

Cropping pattern refers to the **yearly sequence and spatial arrangement of crops on a piece of land in a given period**. It indicates the **temporal and/or spatial** arrangement of crops in a particular area and is crucial for crop production and land-use intensity.

Factors Influencing Cropping Patterns

The choice of cropping patterns is influenced by a multitude of factors:

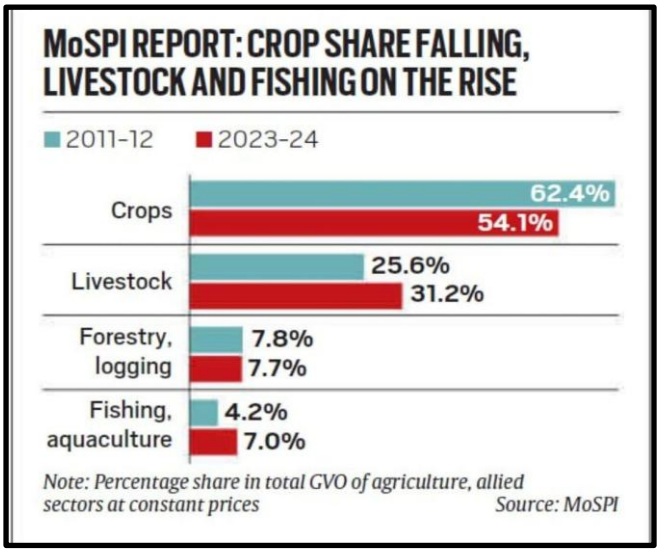


6.3.2. Emerging Trends: Shift Towards Cash Crops, Horticulture, and Millets

India's cropping patterns are undergoing a strategic shift towards diversification, resilience, and sustainability, moving beyond the dominance of traditional food grains.

- **Rise of Cash Crops:** There's a growing focus on crops with higher market value. The area under commercial crops like cotton and sugarcane increased significantly from 1970-71 to 2020-21. This shift is driven by **better price realization and assured markets.**
  - E.g., sugarcane due to cooperative and sugar mill support.
- **Expansion of Horticulture:** Horticulture production has been steadily increasing, driven by proactive government policies, improved crop production technologies, and rising health

awareness. In FY24, India produced **more horticultural crops than food grains**. India is the **second-largest producer** of fruits and vegetables globally.



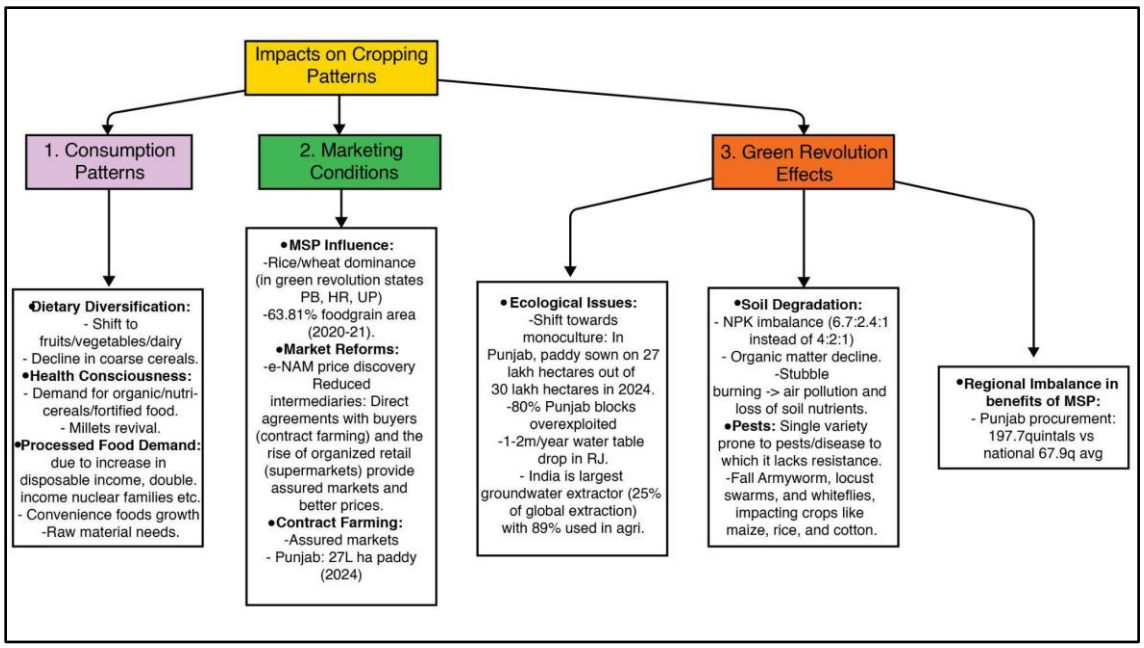
- **Resurgence of Millets (Shree Anna):** Millets, once a staple, are regaining importance due to their **nutritional benefits** (rich in protein, fiber, minerals) and **climate resilience** (drought-resistant, low water footprint).
    - India is the world's largest producer of millets, accounting for 38% of global production in 2022-2023. The government's declaration of **2023 as the "International Year of Millets"** and initiatives like the **National Millets Mission** aim to boost their production and consumption.
- **Increased Area Under Pulses and Oilseeds:** After ensuring food security, policy emphasis shifted to increasing farmers' income, boosting exports, and saving foreign exchange. The area under oilseeds increased from 9.85% in 1970-71 to **13.52% in 2020-21.**
    - At the end of FY 2024, the area under oilseed cultivation in India was nearly **30.1 million hectares**. India is the largest producer, consumer, and importer of pulses globally.
    - Pulses output estimate stood at around **23 million tonnes (mt) for FY25**, down 15% from 27.3 mt peak recorded in FY22.

Preparing the ground for self-sufficiency in pulses PREMIUM

Pulses cultivation is confined to unirrigated and degraded lands, leading to low productivity. This should change

6.3.3. Impact of Consumption Patterns, Marketing Conditions, and Green Revolution on Cropping Patterns

Consumption patterns and marketing conditions significantly influence cropping patterns in India:



Student Notes:

Why Farmers in India Prefer Wheat and Rice?

Farmers in India are rational and risk-averse, leading them to consistently prefer cultivating wheat and rice over other crops. This preference is driven by two main factors:


Explained: Why farmers prefer growing rice and wheat

The reason isn't assured MSP procurement alone. It is also because of the two cereal crops receiving priority in public breeding and research support, reflected in steady yield increases over time

- **Price Assurance from MSP:** Government's near-guaranteed procurement of rice and wheat at a pre-announced MSP provides a **crucial safety net** for farmers, assuring them of a stable income, unlike other crops whose acreages often fluctuate with market prices due to the lack of such a guarantee.


India pegs wheat, maize and rice production at record high

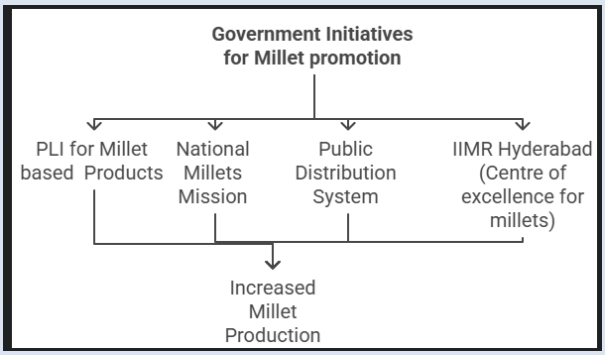
PREMIUM

Third advance estimate projects new high in foodgrain output at 353.96 million tonnes

- **Lower Yield Risk:** Rice and wheat has **significantly lower yield risk** as these crops receive priority in public breeding and research support.
  - **Wheat Example:** Continuous public research has led to a remarkable evolution from traditional varieties (1-1.5 tonnes/ha) to modern, climate-smart, and disease-resistant varieties like **HD-3385, which boasts an average yield of 6 tonnes/ha.**
  - **Rice Example:** Similarly, rice has seen continuous innovation, including the development of genetically-edited (GE) mutant lines like "**Kamala**" using CRISPR-Cas technology. This new variety offers **higher potential yields, shorter growth duration (saving water), and better nutrient mobilization (saving fertilizers).**
  - **Contrast with Other Crops:** In stark contrast, other crops have not received comparable R&D support. For instance, cotton has seen no new breeding breakthroughs since the introduction of GM Bt cotton (2002-06), leading to stagnant or modest yield increases.

Millet Value Chain

Millets are rich in **protein, fiber**, and minerals like **calcium and zinc**, and **are gluten-free**, making them beneficial for various health conditions including diabetes, obesity, and celiac disease.



- Also, Millets are drought-resistant, require **less water** compared to other cereals, and are adaptable to a wide **range of ecological conditions**, making them ideal for climate-resilient agriculture. Their cultivation requires **fewer inputs like fertilizers and pesticides**.

The millet value chain encompasses a series of activities, actors, and processes from production to consumption, vital for promoting these nutritious and climate-resilient crops. India, as the world's largest producer of millets, plays a crucial role in this global supply.

Student Notes:

Key stages and actors include:

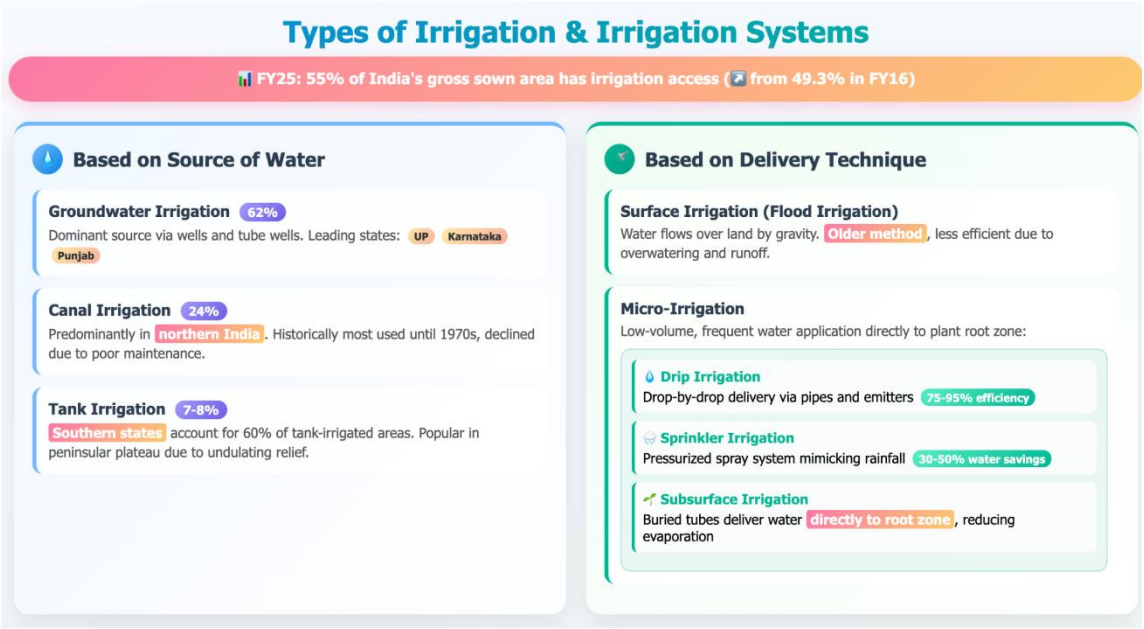
- **Production:** Farmers cultivate various millets like jowar, bajra, and ragi, primarily in arid and semi-arid regions due to their drought-resistant nature and low water requirements.
  - Policy support, such as incentivizing millet cultivation and farmer awareness campaigns (e.g., *Mann Ki Baat*), have created demand.
- **Processing:** This involves cleaning, grading, and value addition.
- **Marketing and Distribution:** Millets are distributed through various channels, including domestic markets and exports

The focus on strengthening the millet value chain, through FPOs and Krishi Vigyan Kendras (KVKs), ensures a continuous supply and wider adoption of millets, contributing to food security and rural livelihoods.

6.4. Irrigation and Water Management

Irrigation is the **artificial supply of water to crops to fulfill their water requirements**. It is a critical input, with **over 80% of India's total water used in agriculture**, and about **55% of food grain** production coming from irrigated agriculture.

6.4.1. Types of Irrigation & Irrigation Systems



6.4.2. Major Challenges in the Indian Irrigation System

Despite significant progress in irrigation coverage (up from 41% in 2016 to 52% in 2022-23), the Indian irrigation system faces several critical challenges:

- **Poor Irrigation Efficiency:** Overall irrigation efficiency is alarmingly low at around 38%, significantly less than developed countries (e.g., Israel at 90-95%). This is due to over-reliance on traditional flood irrigation, inadequate on-farm infrastructure, unlined canals, and poor maintenance.
  - The agricultural sector accounts for **almost 80% of the water withdrawal in India**. Every year, **688 billion cubic metres** of water is consumed by the farm sector, the highest in the world.
- **Overexploitation of Groundwater:** Groundwater has become the mainstay of irrigation, but its overexploitation is a serious concern. Punjab, Haryana, and Rajasthan face rapid depletion of aquifers, with **60% of districts in Punjab experiencing over-extraction**. India is the largest user of groundwater globally.

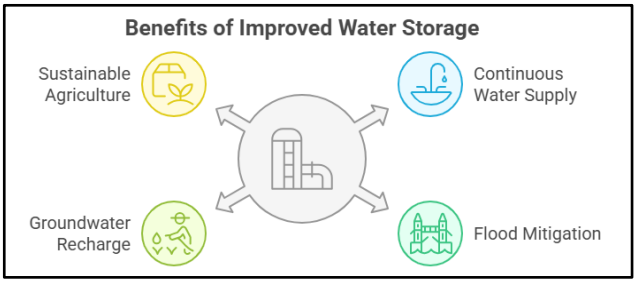
Student Notes:

- Due to over extraction, **almost 17% of India's groundwater assessment units are deemed 'over-exploited'** while 3**.9% are in a 'critical' state**.

Three-fourths of India's irrigation sources run on electricity: study

Electrification of groundwater withdrawal corresponds to a rise in the use of tubewells and borewells that are capable of extracting water at greater depths

- **Regional Disparities:** Irrigation development is highly uneven.
  - **North-Eastern states have only 28.6%** of their irrigation potential developed, compared to **95.3% in northern states** like Punjab and Haryana, due to lack of infrastructure, difficult terrain, and inadequate investment.
- **Delays in Project Completion:** Numerous irrigation projects face significant delays due to poor planning, lack of coordination, and bureaucratic red tape, leading to cost overruns and underutilization of created potential.
  - E.g., the Sardar Sarovar Project, conceived in the 1940s, was only completed in 2017 due to various delays.
- **Power-Irrigation Nexus:** Subsidized or free electricity for agricultural pumps incentivizes excessive groundwater extraction, leading to over-consumption of both water and power resources. This nexus contributes to the financial stress of DISCOMs and unreliable power supply for farmers.
- **Waterlogging and Salinization:** Excessive irrigation in areas with poor drainage can lead to waterlogging and the **accumulation of salts in the soil (salinization**), rendering large areas unfit for agriculture.
  - In India, soil degradation affects 147 million hectares, with **salinity degrading approximately 7 million hectares**, and an additional 10% of land becoming salinized annually.



Water-Use Efficiency: The Role of Micro-irrigation

Micro-irrigation systems are critical for enhancing water-use efficiency in Indian agriculture. These systems apply **small, controlled amounts of water** directly to the plant root zone, significantly reducing water wastage.

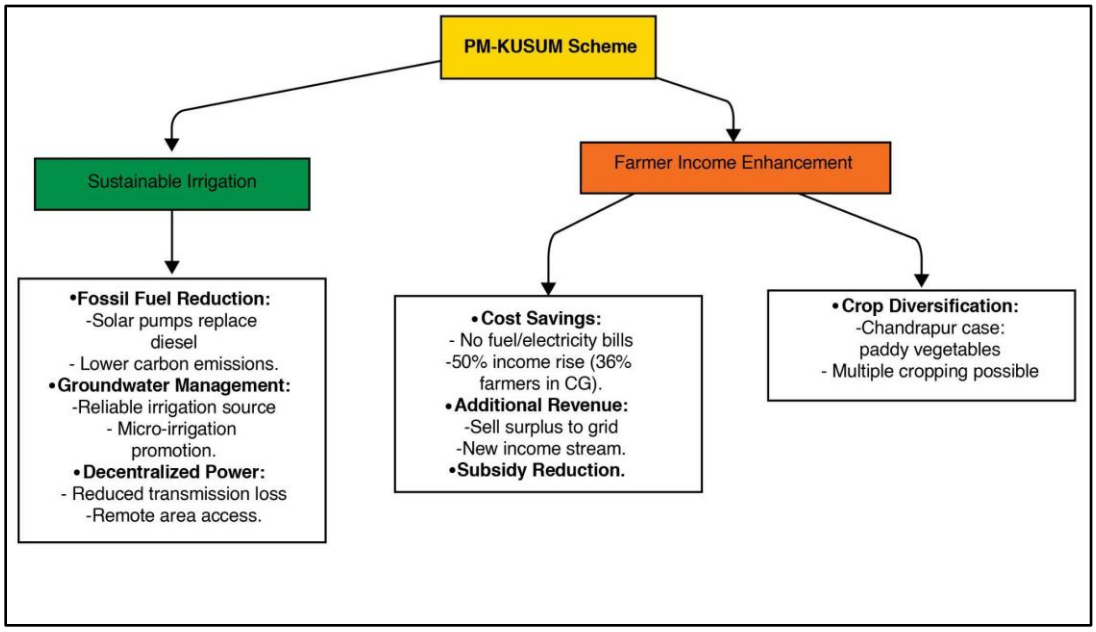
- **Role in Water-Use Efficiency:**
  - **Reduced Water Waste:** Drip and sprinkler systems can achieve 75-95% on-farm irrigation efficiency, using 20-50% less water compared to traditional flood irrigation. This minimizes losses due to conveyance, runoff, deep percolation, and evaporation.
  - **Energy Savings:** Micro-irrigation can reduce electricity consumption for pumping groundwater by 10-31%.
  - **Efficient Nutrient Application (Fertigation):** Allows for precise mixing of fertilizers with water and direct application to the root zone, leading to a 28.5% reduction in fertilizer consumption and increased yield.
  - **Increased Crop Yields:** Micro-irrigation can increase crop yields by 20-100% for various crops. It enables precise water and nutrient application directly to the root zone.
  - **Reclamation of Degraded Lands:** Micro-irrigation enables cultivation in degraded lands, expanding agricultural areas.
  - **Reduced Input Costs:** Leads to savings in labor, land-leveling, weeding, and overall irrigation costs.
- **Challenges in Adoption:** High initial investment costs (55% of non-adopters perceive this as a barrier), free energy availability that disincentivizes water saving, high maintenance costs, inadequate promotional efforts, and poor integration with existing farm systems.

Student Notes:

6.4.3. Government Measures for Efficient Irrigation Management

The Indian government has launched several initiatives to promote efficient irrigation and water management:

- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** Launched in 2015, PMKSY aims to expand irrigation coverage ('Har Khet ko Pani') and improve water use efficiency ('Per Drop More Crop'). It has been extended until 2025-26 with an outlay of ₹93,068.56 crore.
    - **Components:** Accelerated Irrigation Benefit Programme (AIBP), Har Khet Ko Pani, Per Drop More Crop (PDMC), and Watershed Development.
    - **PDMC:** Implemented by the Department of Agriculture and Farmers Welfare, it promotes micro-irrigation (drip and sprinkler) with financial assistance (55% subsidy for small/marginal farmers, 45% for others). An area of 83.46 lakh hectares has been covered under micro-irrigation from 2015-16 to 2023-24.
- **Atal Bhujal Yojana:** Aims to improve groundwater management through community participation in water-stressed regions of seven states. It promotes community-led groundwater recharge and regulation.
- **Micro-Irrigation Fund:** A corpus of ₹5,000 crore created under NABARD to expand micro-irrigation systems and support innovative projects, providing financial assistance to states for installation of drip and sprinkler systems.
- **Pradhan Mantri Kisan Urja Suraksha Evam Utthan Mahabhiyan (PM KUSUM):** Aims to enhance **water and energy efficiency** by promoting solar energy for irrigation, reducing dependence on conventional sources. It includes installing decentralized ground/stilt-mounted solar power plants, standalone solar agriculture pumps, and solarization of grid-connected agriculture pumps.



    - **Challenges:** High initial investment for solar pumps, need for maintenance and technical expertise, and challenges related to efficient energy storage solutions for non-sunny periods.
- **Rainwater Harvesting:** Promotion of rainwater harvesting and artificial groundwater recharge.
- **Water Pricing and Regulation:** Implementing water pricing that reflects its true value and promotes efficient use (e.g., volumetric pricing in Andhra Pradesh).

Student Notes:

6.5. Allied Agricultural Activities

Allied agricultural activities like **animal rearing, fisheries, and horticulture** play a crucial role in diversifying farmer incomes, providing employment, and contributing to national food and nutritional security beyond traditional crop cultivation.

6.5.1. Economics of Animal-Rearing

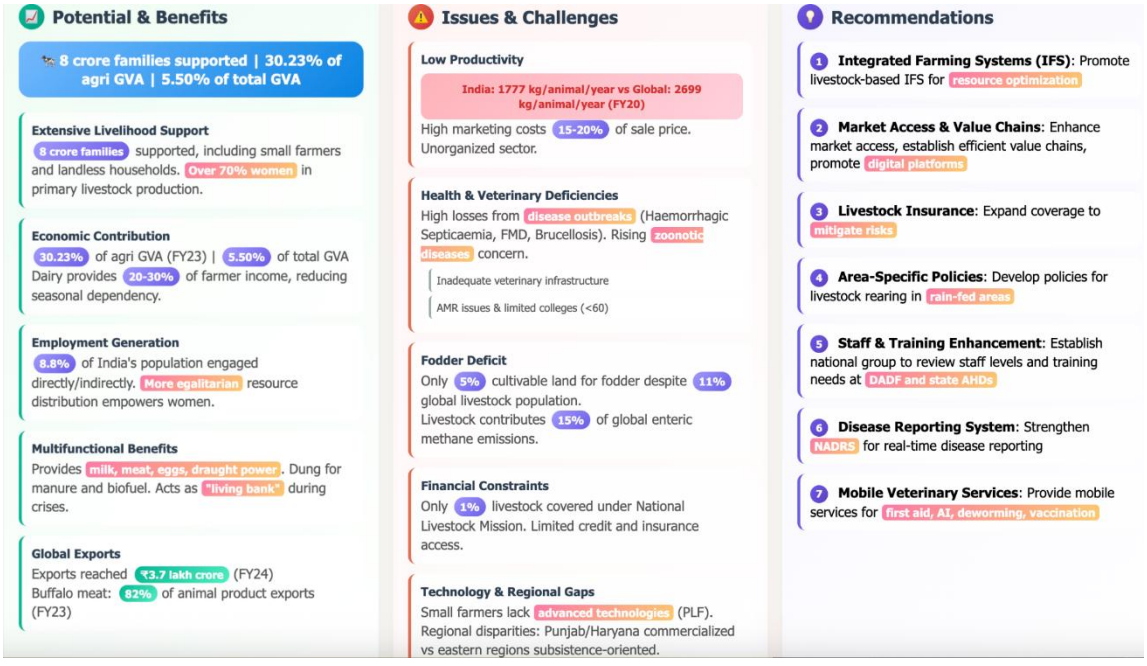
Animal husbandry is a significant sub-sector of the Indian agricultural economy, contributing around **28.5% to the agricultural GDP and 5% to the country's GDP**. India has the world's largest livestock population (over 535 million animals) and is the largest producer of milk globally.

- **Current Status of Livestock sector**
- **Contribution to GVA:**
  - Increased from 24.38% in 2014-15 to **30.23% in 2022-23** (at Current Prices) within the total agriculture and allied sector Gross Value Added (GVA). GVA from **milk accounts for 82%** of India's livestock GVA.
  - **Contributed 5.50% of total GVA** in **2022-23** (at Current Prices).

Employment: About **20.5 million people** are involved in livestock rearing in India.

- **Milk Production:**
  - India ranks **first** globally, contributing **24.76% of global milk production**, with production at **239.30 million tonnes** in **2023-24**.
  - Per capita availability of milk in India is **471 grams per day** in FY**24**, compared to the world average of 329 grams per day in **2023**.
- **Egg Production:**
  - India ranks **2nd** in Egg Production globally (FAOSTAT, **2022**), producing **142.77 billion** Nos. in **FY24**.
  - Per capita availability of eggs is 103 eggs per annum in **2023-24**.
- **Meat Production:**
  - India ranks **5th** in Meat Production globally (FAOSTAT, **2022**), producing **10.25 million tonnes** in **FY24.**

Potential and Challenges of Livestock Sector for Non-Farm Employment in Rural Areas:



Student Notes:

6.5.2. Fisheries Sector

India possesses diverse fisheries resources that provide livelihood opportunities to approximately **three crore fishers and fish farmers**.

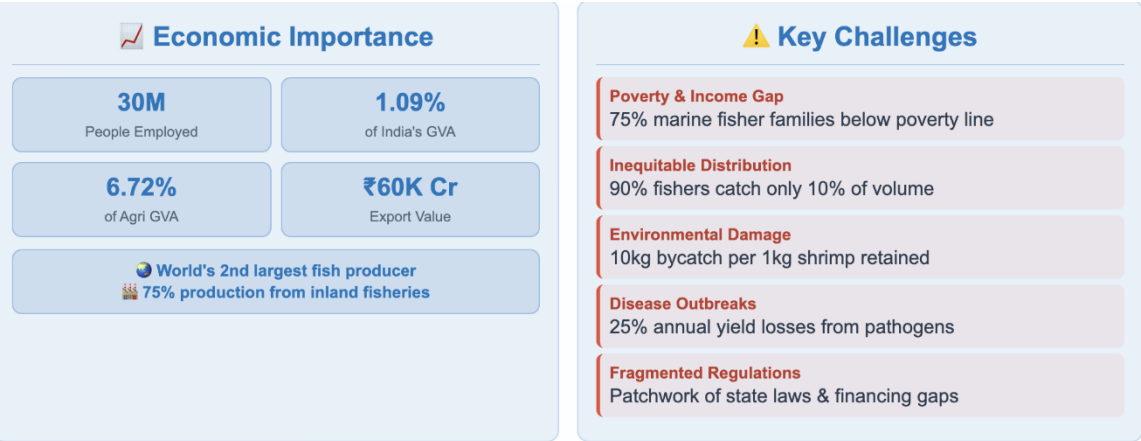
Status of Fisheries Sector

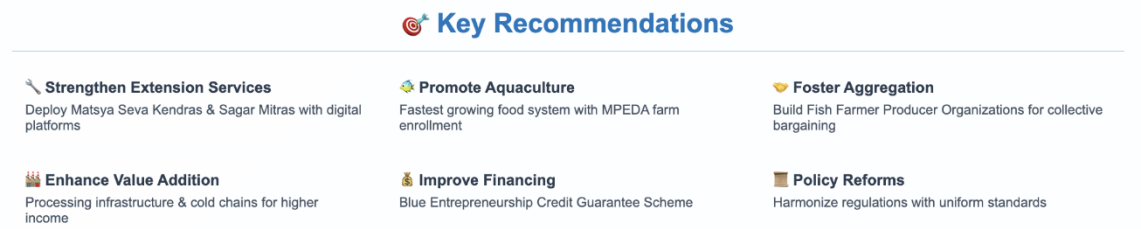
- **Record Production & Growth**:
  - National **fish production** reached **175 lakh tons** in **2022-23**.
  - The sector's growth is **9% annually**, significantly higher than the global average of **2.5%**.
  - **Shrimp exports** have more than doubled between **FY14 and FY24**.
- **Significant Investment**:
  - **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** and **Blue Revolution scheme** aim to address gaps in **fish production**, **productivity**, **technology**, **post-harvest infrastructure**, **management**, and **fishers' welfare**.

AGRI BUSINESS

Raising India's fishery production to 40 million tonnes possible, says ICAR

PREMIUM



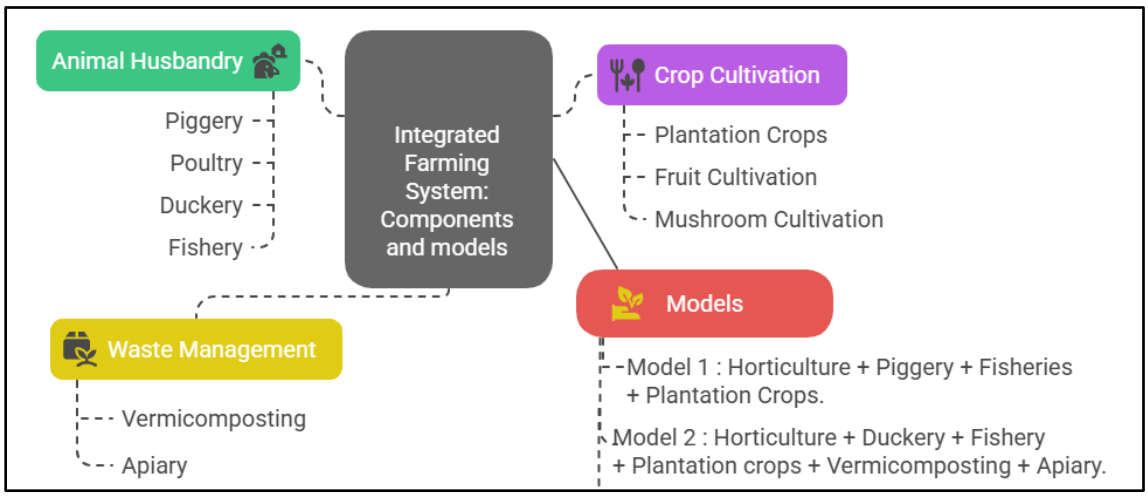


Carbon dioxide emission per kilogram of fish caught in India's marine fisheries is **17.7% less** than the global average. By strategically addressing challenges through targeted interventions in **technology, infrastructure, and policy,** India can realize its ambitious goals for a sustainable and prosperous 'Blue Economy' for generations to come.

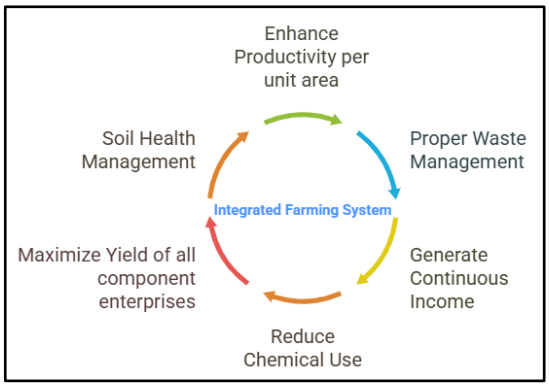
6.5.3. Integrated Farming Systems (IFS)

Integrated Farming System (IFS) is a holistic approach **that combines various interdependent and interrelated agricultural production systems** (e.g., crops, livestock, fisheries) **on a single farm**.

It is based on the concept that **'there is no waste' and 'waste is only a misplaced resource'** which means waste from one component becomes an input for another part of the system.



- **Significance of IFS for Small and Marginal Farmers:**
  - **Increased Productivity and Income Stability**:**IFS** diversifies income sources (e.g., **crops**, **milk**, **eggs**, **meat**) throughout the year, reducing the risk of **crop failure** and providing **financial stability**. It also increases **yield per unit area** and **time**.
  - **Resource Efficiency and Reduced Costs**: Waste products (e.g., **animal dung**) are used as inputs for other components (e.g., **manure** for crops), reducing the need for external inputs like **chemical fertilizers** and **pesticides**. This significantly lowers the **cost of production**.



  - **Nutritional Security**: Growing a variety of crops and raising livestock ensures a diverse range of nutrients, providing **balanced food** for the farm family.
  - **Employment Generation**: Combining multiple enterprises increases **labor requirements**, addressing **underemployment** in rural areas.
  - **Environmental Sustainability**: Effective recycling of waste products minimizes **environmental pollution** and contributes to **soil health** and **fertility**. It also reduces dependency on **fossil fuels** by using **biomass energy**.
  - **Risk Mitigation**: **Diversified operations** make the farm more resilient to **climate variability**, **market fluctuations**, and **disease outbreaks**.
  - **Optimized Land Use**: Small landholdings can be optimized by integrating various components, making them more **productive** and **profitable**.

Integrated Farming System is a promising approach for increasing productivity and profitability through **recycling the farm by-products and efficient utilization of available resources** and ensuring ecological stability.

6.6. Agricultural Subsidies

Agricultural subsidies are **financial assistance provided by the government to farmers, agribusiness owners, and agricultural raw material suppliers** to reduce farming costs and support the agricultural sector.

6.6.1. Rationale for Farm Subsidies in India

Subsidies are crucial for the **economic stability of farmers** in India, and also **benefit workers across the agricultural supply chain**.

The rationale behind providing farm subsidies in India is multifaceted:

- **Protection against market uncertainties**: Farming is vulnerable to **unpredictable weather**, **climate change**, and **price fluctuations**. Subsidies help mitigate these risks.
- **Ensuring food security**: Subsidies maintain **stable agricultural production**, crucial for feeding India's large population.
- **Boosting agricultural productivity and income**: Subsidies reduce the cost of essential **inputs**, encouraging farmers to adopt **modern technologies** and improve **yields**, boosting their income.
- **Addressing market failures**: **Government intervention** is necessary when market mechanisms cannot ensure **fair prices** or **adequate supply**.
- **Social welfare**: Subsidies help reduce **rural poverty**, ensure **equitable access** to essential inputs, and prevent **distress sales** by farmers.

6.6.2. Types of Subsidies

Agricultural subsidies in India can be broadly categorized based on how the financial assistance is delivered:

Farm loan waivers and elections: How do they affect farmers and governments? Premium

Promises to waive off farm loans have been issued by most political parties during this Lok Sabha election.

Types of Agricultural Subsidies in India

Direct Subsidies

Direct financial assistance or transfers to farmers.

PM-KISAN

Provides direct income support of **₹6,000 per annum** to all landholding farmer families.

Farm Loan Waivers

Programs to cancel outstanding debts. Waivers of **₹2.52 lakh crore** were announced between 2014 and March 2022.

DBT for Fertilizers

Subsidy transferred to manufacturers after delivery to farmers, verified via **Point of Sale (PoS)** machines to reduce leakages.

Indirect Subsidies

Reduces the cost of production inputs or supports the sector indirectly.

Fertilizer Subsidies

Government subsidizes fertilizers like urea (fixed retail price) and DAP/MOP (under **Nutrient-Based Subsidy** scheme).

Power & Irrigation Subsidies

Electricity is often heavily subsidized or free. Government also supports irrigation systems like canals and dams.

Seed & Credit Subsidies

Financial aid for quality seeds. Schemes like the **Interest Subvention Scheme** offer loans at reduced rates (e.g., 4%).

Crop Insurance Schemes

Programs like **PMFBY** offer subsidized premiums to protect farmers against crop losses from natural calamities.

6.6.3. Issues with Agri Subsidy Regime

While agricultural subsidies aim to support farmers and ensure food security, they also lead to various distortions:

Student Notes:

Environmental Degradation & Resource Depletion

Subsidies drive unsustainable practices, leading to severe **groundwater over-exploitation** (165% in Punjab) and contributing 17% to global aquatic nitrogen pollution.

Excessive Chemical Use & Diminished Returns

Leads to excessive fertilizer application (141 kg/ha), drastically reducing fertilizer responsiveness from **13.5 kg grain per kg to 3.7 kg**.

Significant GHG Emissions

Inefficient input use makes India the **third largest Agrifood System emitter** globally. Rice cultivation alone accounts for 17.4% of agricultural GHG emissions.

WTO Related Issues

India's subsidy regime faces non-compliance issues, exceeding the **10% de minimis limit**, despite a low per-farmer subsidy compared to developed nations.

Distorted Cropping Patterns & Market Inefficiencies

MSPs and free power skew patterns towards **water-intensive monocultures** (rice, sugarcane), reducing crop diversity and leading to black marketing of inputs.

Substantial Fiscal Burden & Constrained Public Investment

Subsidies strain government finances, limiting investment in critical infra and R&D. Agricultural allocations declined from **5.44% in 2019 to 3.15% in 2024**.

Inequitable Benefits & Exacerbated Agrarian Distress

Subsidies disproportionately favor large farmers, intensifying distress evidenced by over **1 lakh farmer suicides** (2015-22). India ranks 105th in the Global Hunger Index 2024.

6.6.4. Suggestions on Subsidy Reform

The debate on subsidy reform revolves around making agricultural support more efficient, equitable, and sustainable, while mitigating its distorting effects.

Rationalize Input Subsidies with DBT

Implement **Direct Benefit Transfer** for fertilizers, linking them to crop-specific doses via **soil health cards**. Encourage judicious use of chemicals with organic manures to reduce pollution and lower costs.

Promote Sustainable Cultivation

Reorient subsidies to incentivize practices that enhance **input efficiency** and enable **climate change adaptation**. Promote innovative techniques like climate-smart rice cultivation.

Transition to 'Green Box' Subsidies

Shift towards **WTO-compliant 'Green Box'** subsidies like direct income transfers and crop insurance. US and EU saw productivity gains of **51% and 60%** respectively after such shifts.

Address Indebtedness & Costs

Implement MSP at **C2+50%** (Swaminathan Commission) to ensure cost recovery. Control rising input costs and consider a **one-time loan waiver** for farmers.

Strengthen Public Investment & Safety Nets

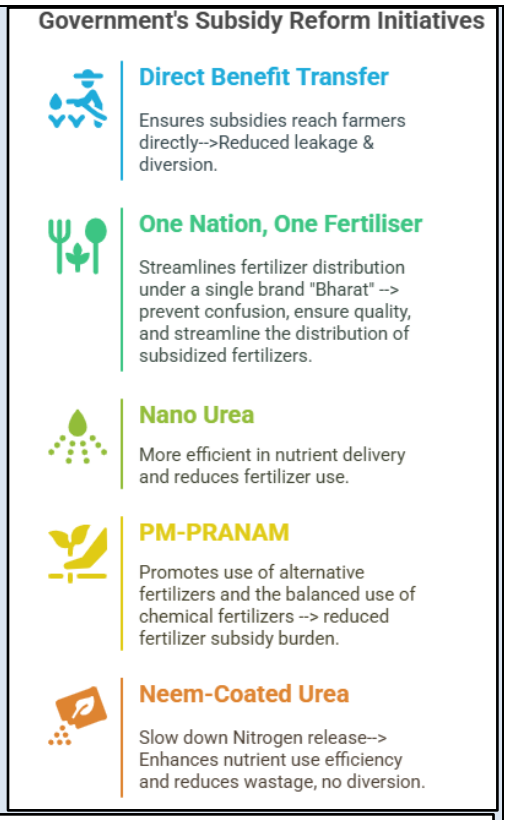
Increase public investment in **irrigation and power**. Reform crop insurance and expand MGNREGA by increasing work-days to at least **200** and wages to **₹600**.

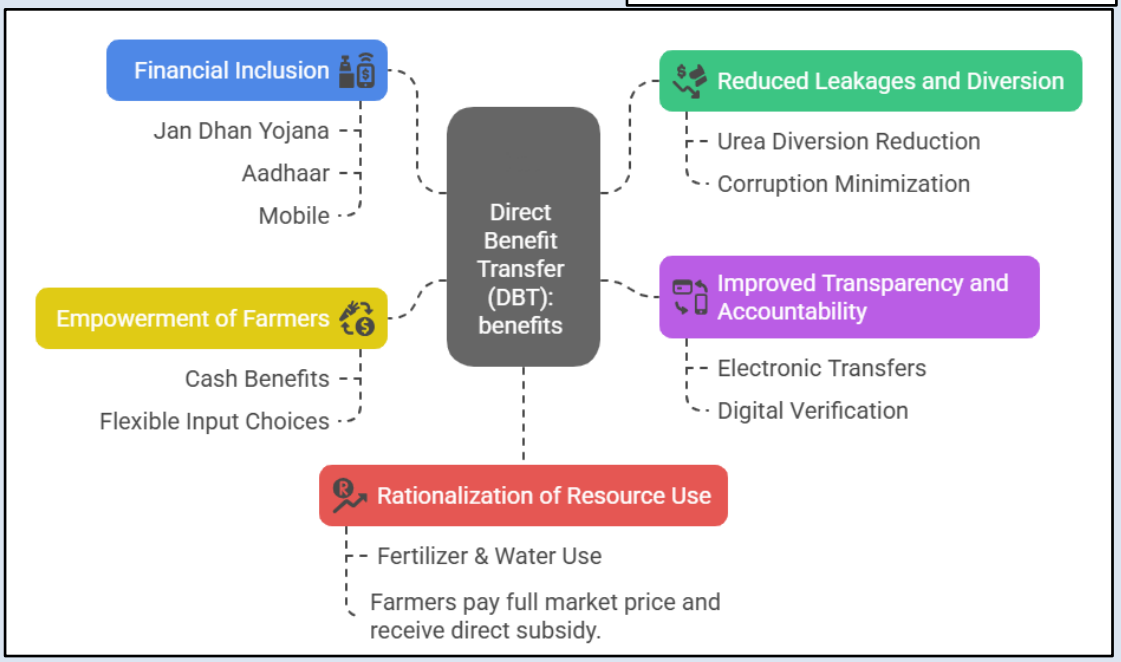
A balanced approach is needed to achieve inclusive growth without undermining investment.

Student Notes:

DIRECT BENEFIT TRANSFER

DBT is a key reform replacing price subsidies by **directly transferring financial benefits to identified beneficiaries' bank accounts,** bypassing intermediaries.





Challenges:

- **Exclusion Errors:** Can occur due to technological limitations, lack of Aadhaar seeding, or connectivity issues in rural areas.
- **Technological Barriers:** Poor internet connectivity, lack of digital literacy among farmers, and inadequate digital infrastructure in remote areas hinder effective implementation.
- **Unproductive Use of Funds:** A concern regarding how transferred funds are utilized by beneficiaries.

Reforming agricultural subsidies in India is critical to foster sustainable growth, enhance farmer prosperity, and align with global environmental and trade standards.

Student Notes:

6.7. Agricultural Pricing Policy & MSP

Agricultural pricing policy in India aims to **protect both producers (farmers) and consumers** from price fluctuations. It involves setting minimum prices, managing buffer stocks, and intervening in markets.

6.7.1. Minimum Support Price (MSP)

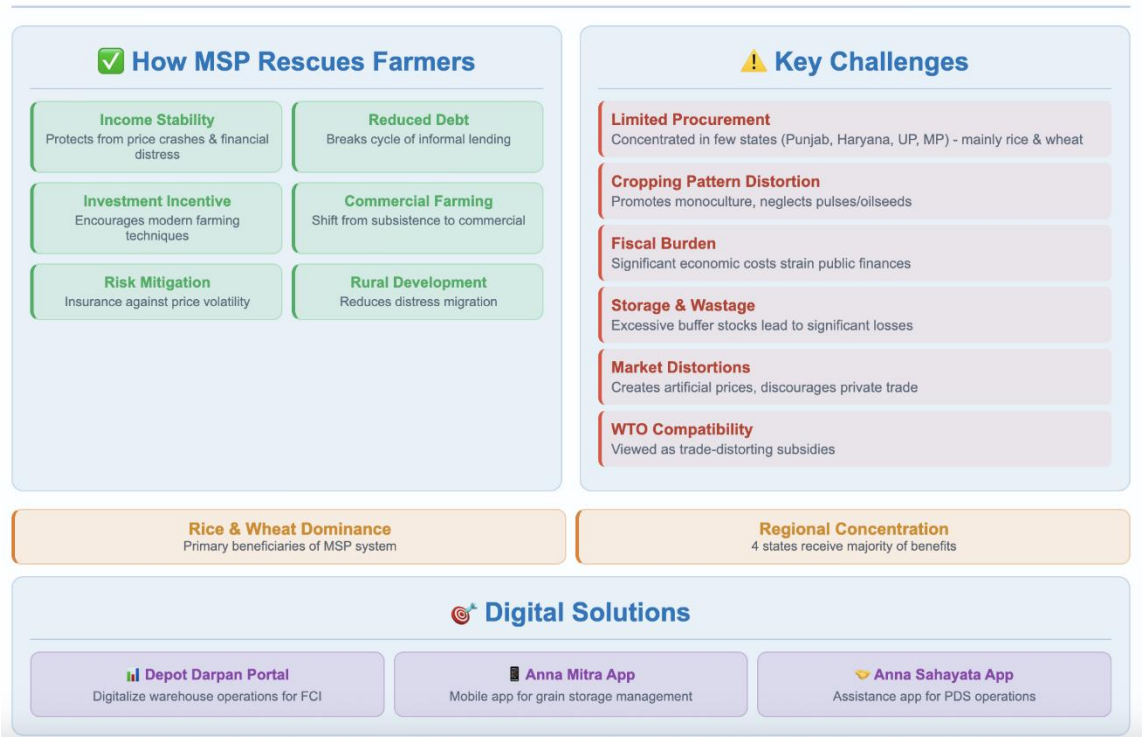
MSP is a **guaranteed minimum price** set by the government at which it procures certain agricultural commodities from farmers. It is announced at the **beginning of the sowing season**.

MSP: Objectives and Facts

1. **Price Assurance to Farmers**: **MSP** provides a **safety net**, ensuring that farmers recover their **cost of production** and receive a **reasonable return on investment**, protecting them from **distress sales** and **market price volatility**.
2. **Influence Cropping Patterns**: **MSP announcements** help the government influence farmers' decisions on what crops to grow, aligning production with **national food security** needs and encouraging **crop diversification**.
3. **Food Security**: **MSP** facilitates the procurement of food grains for the **Public Distribution System (PDS)**, ensuring essential commodities are available at **affordable prices** to consumers. It contributes to **stable food grain production**, enhancing national food security.

4. **Stabilize Prices for Consumers**: By regulating supply through **procurement**, **MSP** helps moderate **open market prices**, reducing **food inflation**.
5. **Crops Covered**: The government fixes MSPs for **23 mandated agricultural crops**, based on the recommendations of the **Commission for Agricultural Costs & Prices (CACP)**:

MSP: Benefits, Challenges, and Solutions:



Student Notes:

Should the Minimum Support Price be legalized?

A legal guarantee for **MSP** would make it a **legal entitlement** for farmers, ensuring the government ensures procurement at or above MSP.

Why Farmers Demand Legal MSP

1. **Fair and Remunerative Prices**: Current MSP benefits **6% of farmers**, with many selling below MSP. A legal MSP would ensure prices **cover costs** and offer a profit margin, aligning with the **M.S. Swaminathan Commission's** recommendation.
2. **Economic Viability and Reduced Distress**: A legal MSP would end the **"produce and perish"** cycle, reducing **debt** and **farmer suicides**, while contributing to **rural economic growth**.
3. **Boosted Income and Investment**: Legal MSP would increase **income**, encouraging **investment** in agriculture and ensuring **food security**.
4. **Parliamentary Standing Committee**: The committee recommended **legally guaranteed MSP**, noting benefits outweigh challenges.

Challenges of Legalizing MSP

1. **Fiscal Burden**: Legal MSP would significantly increase **procurement costs** and create financial strain. Estimates range from **₹21,000 crore** to **₹2,29,000 crore**.
2. **Market Distortion**: **Overproduction** of certain crops may occur, making the government the **primary buyer**, discouraging private traders.
3. **Infrastructure Deficiencies**: India lacks the **storage** and **logistics** infrastructure for widespread MSP implementation.
4. **Implementation Complexity**: **Inconsistent mandi systems** and **informal transactions** complicate enforcement. Additionally, **WTO** concerns persist.
5. **Limited Crop Coverage**: **MSP covers only 23 crops**, which account for less than **30%** of total agricultural output.

Proposed Solutions

1. **Three-pronged Mechanism**:
   - **Expanded Procurement**: Include **millets**, **pulses**, and **oilseeds** in food security.
   - **Market Interventions**: Set **MSP as a floor** in APMC auctions, and strengthen **FPOs**.
   - **Assured Deficit Payment**: Compensate farmers if market prices fall below MSP.
2. **Legal Amendments**: Amend **State APMC Acts** or the **Essential Commodities Act** to ensure MSP.
3. **Strengthening Linkages**: Complement MSP with **crop planning**, **market intelligence**, and robust **post-harvest infrastructure**.
4. **Financial Support and Safety Nets**: Increase **PM-KISAN** payments to **₹12,000** and extend benefits to **tenant farmers** and **farm laborers**.
   - Implement a **loan waiver** and establish a **National Commission for Minimum Living Wages**.

6.8. The WTO and Indian Agriculture

WTO governs global trade rules and has significant implications for India's agricultural policies, particularly concerning subsidies and market access. It facilitates global trade through agreements, mediates trade disputes, and supports developing countries in integrating with global trade.

The Agreement on Agriculture (AoA)

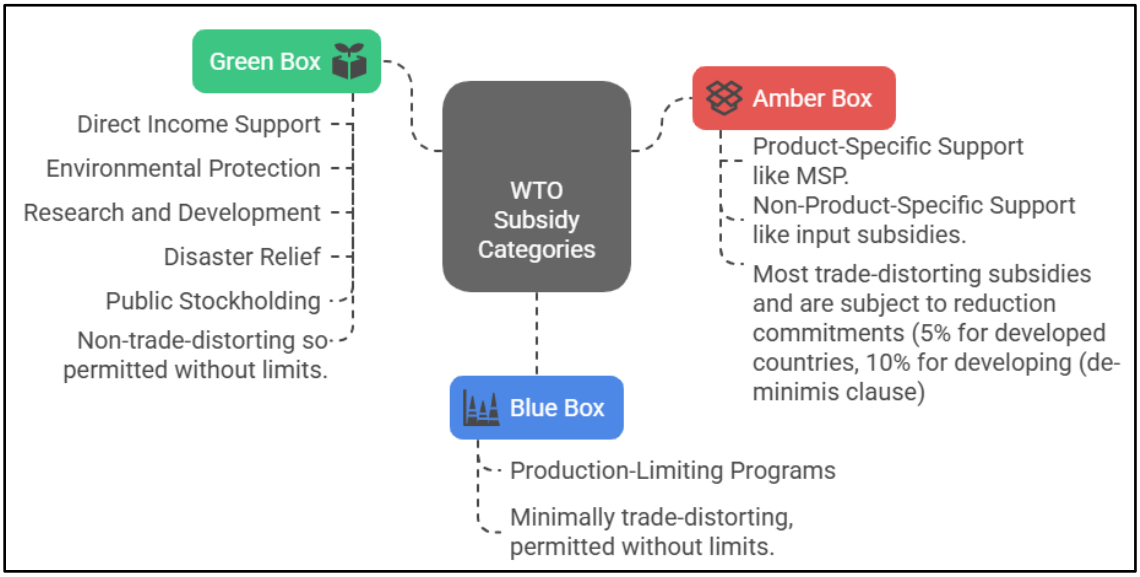
AoA is a **WTO agreement** aimed at reforming **agricultural trade** for a **fair**, **market-oriented system**, enhancing **stability** and **predictability** for **importing** and **exporting nations**. It covers

Student Notes:

a wide range of products, including basic **agricultural products**, **processed products**, **wines**, **spirits**, **tobacco**, and fibers like **cotton**.

The AoA is structured around three pillars:

1. **Market Access**: Involves the removal of **trade restrictions** like **tariffs**.
2. **Domestic Support**: Categorizes **subsidies** that distort trade and subjects them to **reduction commitments**.
3. **Export Competition**: Regulates **export subsidies**.



Issues:

Key concerns raised by USA at WTO against India

- **Non-Tariff barriers**: The US National Trade Estimate Report highlights **India's sanitary and phytosanitary barriers to dairy and poultry** imports.
  - For instance, India's requirement for dairy products from animals **not fed specific animal-derived feed,** or its hesitation to approve Genetically Modified (**GM) food and feed products** (e.g., despite GM cotton approval in **2002**, BT brinjal being shelved, and a split verdict on HT Mustard DMH-11), are criticized for lacking a clear scientific or health justification.
- **MSP and Subsidy Caps:** US alleges that India's MSP for major grains like wheat and rice leads to overproduction, limits imports, and creates **artificial export competitiveness**.

1. **WTO Subsidy Caps and MSP Contention**
   - **WTO Subsidy Limit**:
     - India’s agricultural subsidies capped at **10% of agricultural output**.
     - **MSP-linked procurement** falls under the **"Amber Box"** (trade-distorting).
   - **Farmers' Concerns**:
     - Farmers' organizations call for **India’s withdrawal from WTO**.
     - Issues include **disproportionate favor** to developed nations and **dumping** of subsidized imports.
     - **MSP value** paid to farmers: **₹2.48 lakh crore** in **FY24**.
2. **Public Stockholding for Food Security and the 'Peace Clause'**
   - **Food Grain Stocks**:
     - **Procured at MSP**, critical for **NFSA** and **PDS**.
   - **WTO Compatibility**:
     - **Stockholding** and **distribution** are **WTO-compatible** under the **"Green Box"**.

Student Notes:

- **Procurement at administered prices** faces caps.
- **Peace Clause**:
  - Provides **interim protection** for developing nations exceeding subsidy caps.
  - India seeks a **permanent solution** to amend the subsidy cap formula and include post-2013 programs.

3. **Disparities in Fisheries Subsidies**
   - **Global Disparity**:
     - India offers **$35 per fisher annually**.
     - Some European nations offer **$76,000 per fisher** annually.
   - **India's Advocacy**:
     - Calls for **per capita distribution** of subsidies.
     - Supports a **25-year moratorium** on subsidies for **distant water fishing nations** to address **overfishing**.

India's Vision for WTO Reform

India's relationship with the WTO involves a delicate balance between **protecting its developmental priorities and participating in global trade.**

- **Reviving Multilateralism:** Ensuring all member countries have a voice in decision-making.
- **Addressing New Trade Issues:** Developing frameworks for **digital trade, data governance, and sustainability.**
- **Strengthening Dispute Settlement Mechanism:** Advocating for a **functional** Appellate Body to ensure fair and predictable trade resolutions.
- **Agriculture-Specific Reforms:** Including special safeguard mechanisms, public stockholding for food security, and fair treatment of subsidies.

India has proactively employed a combination of trade policies, such as **increasing import duties on edible oils, removing export duties from rice and onion, and implementing agricultural reforms like e-NAM, PMFBY, AIF, NMSA, and PMKSY** to improve agricultural competitiveness. India also engages in FTAs to **promote and diversify** agricultural exports while protecting its agricultural interests.

6.9. Agricultural Marketing

Agricultural marketing **encompasses all activities, agencies, and policies** involved in the **procurement** of farm inputs by farmers and the **movement** of agricultural produce from farms to consumers. It begins with the **decision to produce** a saleable farm commodity and includes **assembling, grading, storage, transportation, and distribution.**

6.9.1. Process and Stages of Agricultural Marketing in India

The agricultural marketing process in India involves various interconnected stages:

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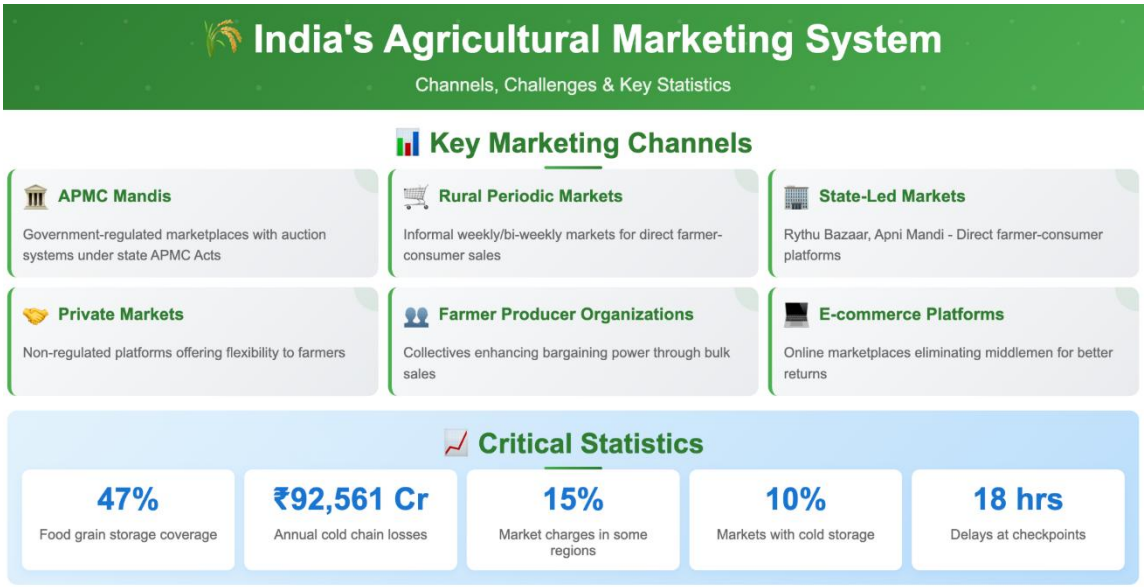
6.9.2. Key Marketing Channels and Related Challenges in India:



Agricultural Produce Market Committees (APMCs)

Agricultural Produce Market Committees (APMCs) are statutory market committees constituted by state governments to regulate trade in notified agricultural, horticultural, and livestock products.

Role of APMCs:

- **Ensuring Transparency:** APMCs aim to ensure transparency in pricing and transactions within the market area.
- **Market-Led Extension Services:** They provide market-led extension services to farmers.
- **Prompt Payment:** APMCs are intended to ensure farmers receive prompt payment for their produce.
- **Promoting Processing and Value Addition:** They encourage agricultural processing and value addition activities.
- **Information Dissemination:** APMCs publicize data on arrivals and rates of agricultural produce.
- **PPP Promotion:** They facilitate public-private partnerships in the management of agricultural markets.

Limitations of APMCs:

- **Monopoly and Cartelization:** APMC regulations create a **monopsony (single-buyer) situation** by mandating sales through licensed commission agents, discouraging private sector entry, and fostering cartelization.
- **High Market Charges:** High market fees and **non-transparent charges** (up to 15% in some states) increase costs for farmers and buyers.
- **Lack of Infrastructure:** Many APMCs lack basic infrastructure like **cold storage and grading** facilities, leading to post-harvest losses.
- **Dual Role Conflict:** APMCs act as both regulators and market operators, leading to conflicts of interest and undermining their regulatory function.
- **Limited Market Access:** Restrictions on private markets and direct sales limit farmers' alternative marketing channels.
- **Political Interference:** Positions within APMCs are often filled by politically influential individuals, leading to cronyism and resistance to reforms.

6.9.3. Government Reforms in Agricultural Marketing

Recognizing the limitations, the government has introduced several initiatives to improve agricultural marketing.

6.9.4. Contract Farming

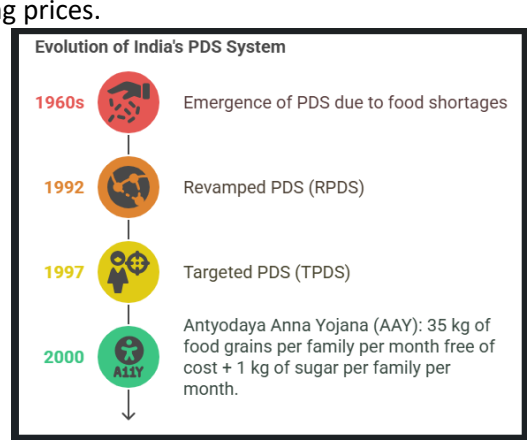
Contract farming involves **pre-harvest agreements** between buyers (food processing units, exporters) and producers (farmers) outlining conditions for production and marketing.

Student Notes:

6.10. Public Distribution System (PDS) & Food Security

The Public Distribution System (PDS) is a food security system in India, that aims to distribute basic **food and non-food commodities at subsidized prices to needy** sections of society.

- **Objectives:**
  - Provide essential consumer goods at cheap and subsidized prices.
  - Insulate consumers from the impact of rising prices.
  - Maintain the nutritional status of the population.
  - Indirectly check open market prices.
- **Functioning:** The responsibility is jointly shared by central and state governments.
  - **Central Government (FCI):** Undertakes procurement, storage, transportation, and bulk allocation of food grains to states.
  - **State Governments:** Responsible for identifying beneficiaries, issuing ration cards, and supervising fair price shops (FPS).



Student Notes:

6.10.1. Benefits and Challenges of PDS System

Benefits of India's PDS System

Ensuring Food Security & Wide Coverage
Guarantees food for a large population, with 75% rural & 50% urban eligible under NFSA.

Increased Access: 70% of households used PDS in 2022-23, up from 40% in 2011-12.

Financial Relief & Consumption Value
Subsidized food frees up household resources for other essential and nutritious items.

Impact on Poor: For the bottom 5%, 20% effectively move to the next consumption class.

Reduced Leakages Through Reforms
Post-NFSA 2013 reforms have dramatically cut leakages in states like Bihar, Odisha, and UP.

Nationwide Drop: Leakages fell from 41.7% (2011-12) to 22% (2022-23).

Crucial for Crisis Response
The PDS proved to be the backbone of relief efforts, providing essential food support during the COVID-19 lockdowns.

Challenges in India's PDS System

Exclusion Errors & Barriers
Biometric failures, Aadhaar mismatches, and documentation hurdles block access for genuine beneficiaries.

Impact: Over 100 million people potentially excluded due to delayed Census.

Corruption & Exploitation
FPS dealers provide less grain than entitled. Middlemen charge huge fees (over ₹3,000) for ration cards.

Application Delays & Rising Costs
Ration card applications remain pending for 4-18 months, violating the 30-day mandate.

True Cost (2021-22): $45.3B vs. $16.5B budgeted, including environmental impact.

Inefficient Storage & Management
Grains stored beyond shelf life are prone to pests and damage. 80% of facilities are non-mechanized.

Increased Leakage: In Tamil Nadu, leakage rose from 12% (2011) to 25% (2023).

Student Notes:

6.10.2. Suggestions:

Address Exclusion & Documentation
Expedite the delayed Census for accurate coverage. Eliminate demand for non-mandated documents to reduce barriers.

Modernize Fair Price Shops
Transform ~5.37 lakh ration shops into "Jan Poshan Kendras" offering banking, gas, and other common services.

Diversify Food Basket
Include nutritious items like pulses, oils, and especially millets. Enable states to source locally grown millets.

Potential Savings: Replacing 1kg rice with millets could save $1.37B annually.

Enhance Oversight & Accountability
Focus on systemic changes over tech-only solutions. Use tools like GPS tracking on trucks to reduce diversion.

National Food Security Act (NFSA), 2013

NFSA signifies a shift from a 'welfare to rights-based approach' to food security in India.

- **Salient Features:**
  - **Coverage:** Legally entitles **up to 75% of the rural population and 50% of the urban population** to receive subsidized food grains under the PDS. This covers approximately 82 crore individuals.
  - **Entitlements:** Priority households are entitled **to 5 kg per person per month**, while Antyodaya Anna Yojana (AAY) households (poorest of the poor) receive 35 kg per family per month.
  - **Subsidized Prices:** Food grains are available at **highly subsidized prices**: ₹3/kg for rice, ₹2/kg for wheat, and ₹1/kg for coarse grains.
  - **Life-Cycle Approach:** Special provisions for pregnant women and lactating mothers (nutritious meals, cash maternity benefits of not less than ₹6,000 for wage loss and nutrition) and children aged 6 months to 14 years (nutritious meals through ICDS and Mid-Day Meal Scheme).
  - **Monitoring and Grievance Redressal:** Established mechanisms for monitoring and addressing grievances.

The NFSA plays a major role in reducing hunger and improving nutrition among India's most vulnerable groups. Despite its implementation, India still faces significant hunger challenges, ranking 105th out of 127 countries in the Global Hunger Index 2024, with 14% of its population (189 million people) suffering from serious hunger.

6.11. Buffer Stocks

A buffer stock refers to a **reserve of a commodity used to offset price fluctuations and unforeseen emergencies**, generally maintained for essential commodities like food grains and pulses. The concept was first introduced during the **4th Five Year Plan (1969-74)** with a buffer

stock of 5 million tonnes of food grains. **In FY25, Wheat buffer stock was 13.55MT and rice buffer stock was 59MT**.

Student Notes:

6.11.1. Importance and Challenges of Buffer Stocks

IMPORTANCE

Stable Prices for Farmers
Prevents price drops, protects farmer income, and encourages investment in agriculture.

Consumer Protection
Prevents excessive prices and reduces food inflation by augmenting supply during shortages.

Food Security
Ensures a continuous flow of goods, preventing shortages and fulfilling national food goals.

Disaster Management
Enables states to meet needs during catastrophes like crop failure or natural disasters.

CHALLENGES

Excess Stock & Wastage
FCI often carries stocks exceeding norms, leading to storage losses from pests and moisture.

Data: Over 40,000 tonnes of grain rotted in FCI godowns (2014-20).

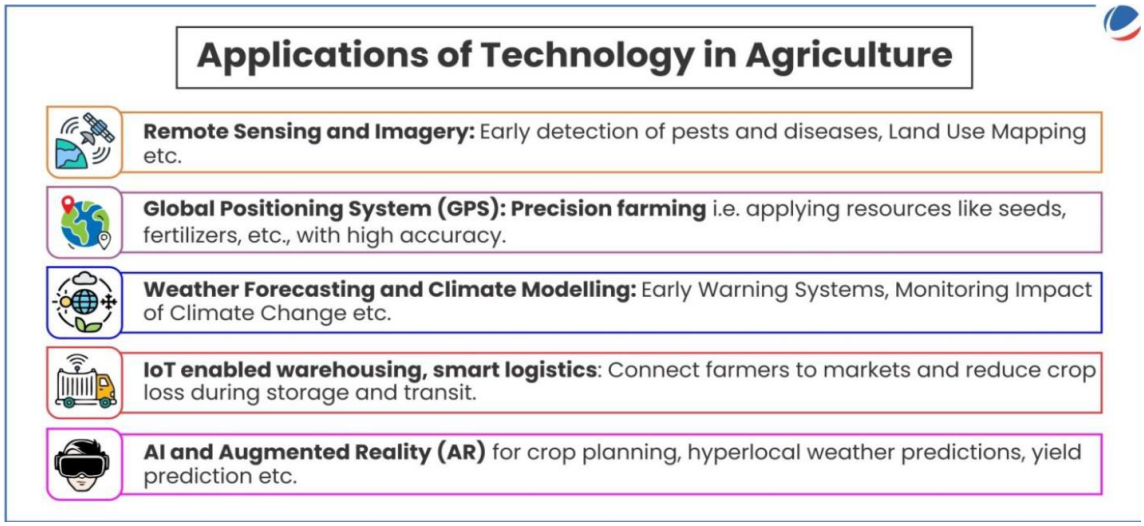
High Maintenance Cost
Substantial costs for logistics, storage, and administration.

Inefficient Management
Outdated warehouses and non-adherence to FIFO principles lead to corruption and waste.

Regional Imbalance & WTO Issues
Storage is concentrated in a few states, and the practice is viewed as trade-distorting by some countries.

6.12. E-Technology Aiding Farmers

E-technology (Information and Communication Technology - ICT) plays an increasingly vital role in modernizing India's agriculture sector, addressing challenges like low productivity, fragmented landholdings, and market asymmetry.



Student Notes:

Tech in Agriculture leads to:

Improved Decision Making

Provides timely info on inputs, crop health, weather, and disaster preparedness.

Tools: Kisan SMS Portal, Mausam & Meghdoot apps.

Enhanced Productivity & Efficiency

Precision farming (AI, IoT) and mechanization (drones) optimize resource use and reduce waste.

Market Access & Information

Connects farmers to buyers and provides real-time price discovery for better rates.

Platforms: e-NAM, Kisan Sabha App, AGMARKNET.

Financial Inclusion & Skill Building

Improves access to loans (KCC), insurance, and DBT. Online portals and call centres enhance skills.

India's Initiative for Agritech Adoption

- **Forecasting Agricultural Output using Space, Agro-meteorology, and Land-based Observations (FASAL)** to provide early forecasts of crop output.
- **KISAN (Crop Insurance using Space technology And geoiNformatics a**ims for improvement in yield estimation.
- **Agricultural Data Exchange (ADeX)**: India's first data exchange platform for farmer services.
  - Holds three primary datasets: Farmer identity, Geotagged farm location, Crops-sown data
- **Krishi Integrated Command and Control Centre (ICCC)**: A tech-driven solution to enable informed decision-making in agriculture using technologies like AI, Remote sensing, GIS.

Key Technologies in Aid of Farmers

1. Internet of Things

The **Internet of Things (IoT)** is significantly transforming the agricultural sector by enhancing efficiency, optimizing resource use, and improving yields, though its widespread adoption faces few challenges.

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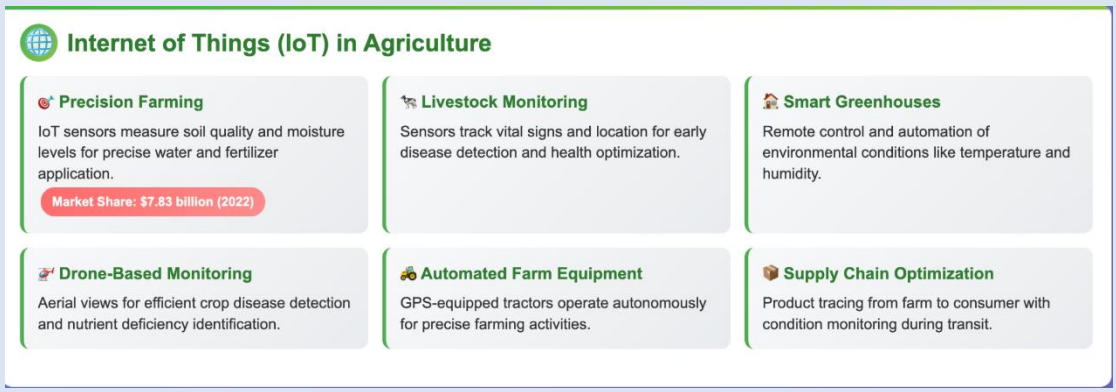
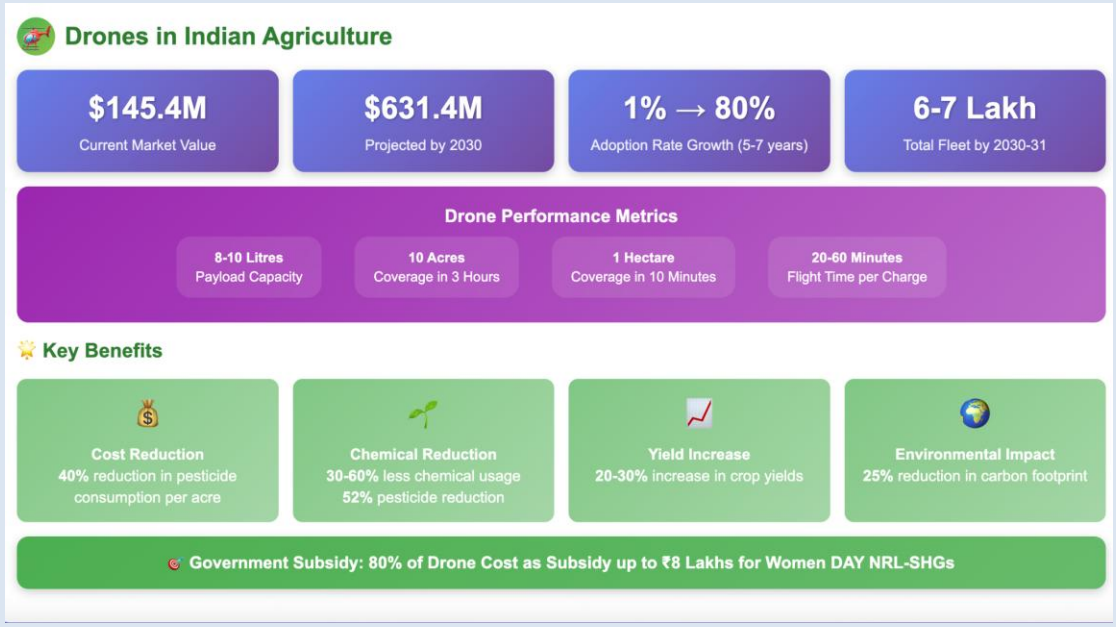
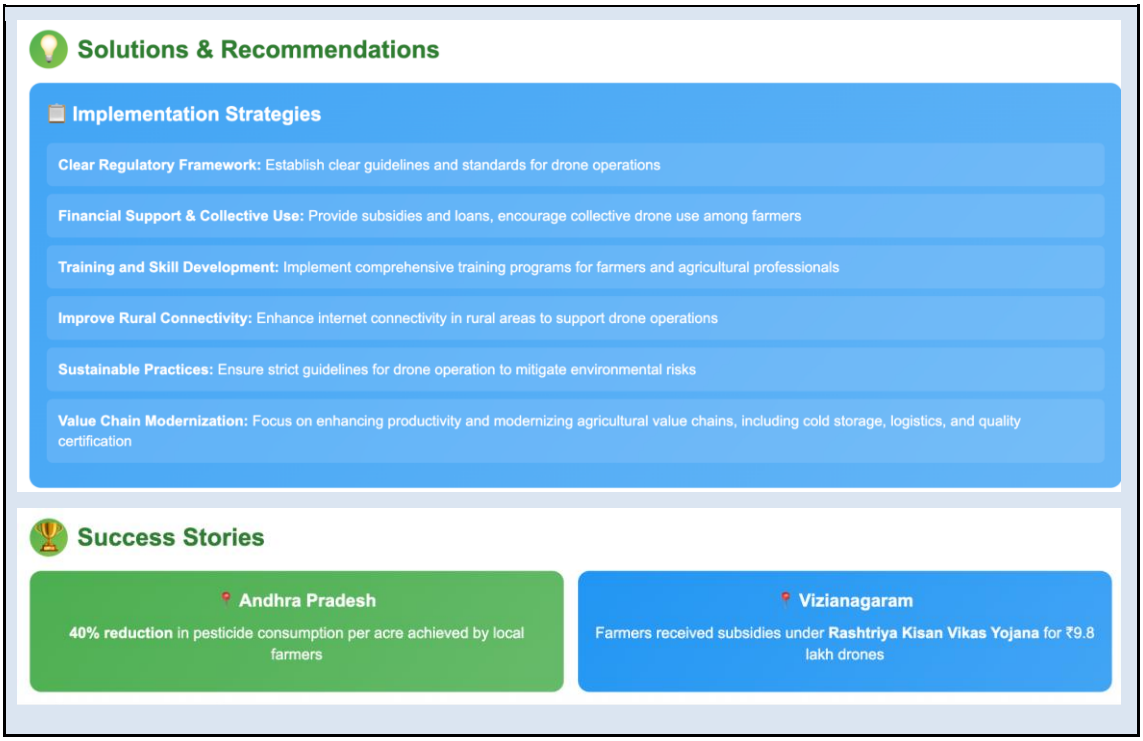


Challenges of IoT Adoption in Agriculture

- **Data Management:** The difficulty in handling and analyzing large data sets from IoT devices
- **Security Concerns:** The risk of cyber-attacks affecting data integrity and operations
- **Infrastructure Constraints:** Limited availability of robust internet connectivity and infrastructure in rural areas restricts effective real-time data transmission and IoT device functioning.
- **High Initial Investment:** Significant upfront costs required for purchasing, installing, and maintaining IoT devices create financial barriers for small and marginal farmers.

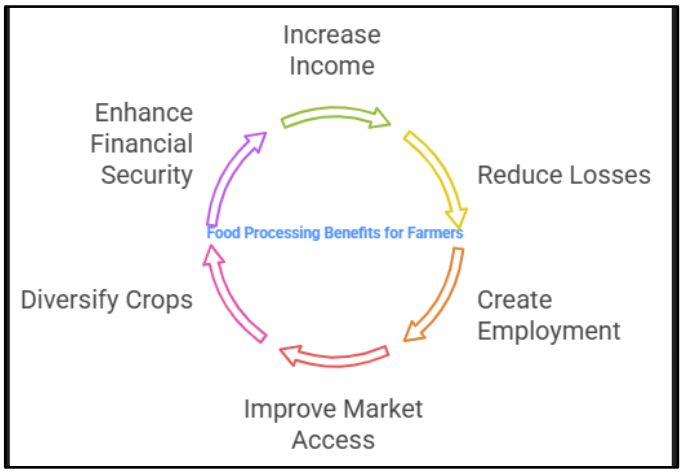
2. Drones in Indian Agriculture





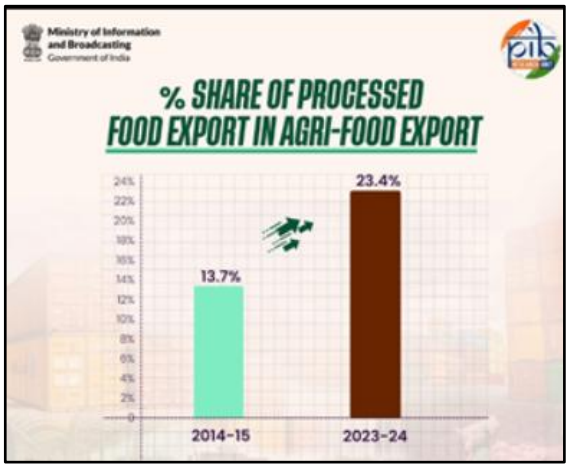
6.13. Food Processing Sector

The food processing industry (FPI) involves **transforming raw agricultural products into consumable food items, enhancing shelf life, safety, and quality**. It provides a vital linkage between agriculture and industry. India ranked **7th in the world** in agricultural and processed food exports in FY23.



Scope & Significance:

- **Economic Growth:** FPI is one of India's largest industries, valued at over USD 400 billion, expected to reach **USD 535 billion by FY26**. It contributes around **18% to agricultural GVA** and **1.5% to India's GDP.**
- **Reducing Food Wastage:** By utilizing surplus or imperfect produce, FPI helps reduce post-harvest losses, estimated at ₹90,000 crore annually in India. Globally, over one-third of food is wasted.
- **Employment Generation:** A labor-intensive sector, it provides direct and indirect employment opportunities, especially in rural areas. **In FY22, it employed 20.68 lakh persons**. Over **7 million** jobs are **supported directly and indirectly across the value chain** in India's food processing sector.



Student Notes:

- **Increasing Farmer Income:** Increased demand for processed food boosts demand for raw farm materials, leading to higher farmer incomes and value addition.
- **Food Security & Nutrition:** Enhances food safety, extends shelf life, and allows for fortification with vitamins and minerals, improving nutritional levels (e.g., fortifying rice with iron, folic acid, vitamin B12).
- **Export Potential:** India is the second-largest food producer globally, with diverse raw materials, giving it a comparative advantage in exports.

Upstream and Downstream Requirements

Opportunities:	Challenges:
• **Growing Domestic Demand:** India's large and growing population, rising middle class, increasing disposable income, and changing consumption patterns (e.g., shift to ready-to-eat foods) create significant demand. • **Policy Support:** Favorable government initiatives like PLI schemes, 100% FDI, and schemes for micro food processing enterprises aim to boost the sector. • **Technological Advancements:** AI, IoT, and big data offer immense potential for supply chain efficiency, quality control, predictive maintenance, and innovative recipes. • **Global Market Access:** India's position as a major producer and increasing demand for processed foods globally present significant export opportunities. **'Ready to Eat'** India has now become the **third-largest packaging market globally,**	• **Low Processing Levels:** Despite huge production, India processes **only about 10%** of its agri-output, compared to 23% in China, 70% in Brazil and 65% in the USA. While globally around 30% of agri produce is processed, the processing levels in India are still low at **2.7% for vegetables, 4.5% for fruits, 15.4% for fishery.** • **Lack of Efficient Supply Chain Infrastructure:** Inadequate cold chain facilities, storage, and processing capacity lead to high wastages and lower value addition. • **Informalization:** A high concentration of unorganized segments (75% across product categories) leads to inefficiencies and low quality control. The unorganized, unregistered enterprises employ 70% of the workers in the FP sector in the country. A scheme to encourage **formalization of Micro Food Processing Enterprises Scheme (PMFME**) was launched in 2020. • **Access to Credit & Finance:** FPI units, especially MSMEs, face difficulties accessing bank credit due to the seasonal and perishable nature of commodities and stringent lending criteria.**Quality and Safety Standards:**

surpassing Japan, with the industry exceeding $86 billion in value.

In 2023, India's packaged food sector reached a market size of **$2.8 billion**, with projections suggesting it would grow to **$6.4 billion by 2029**. This expansion highlights **shifting consumer preferences and the growing demand for convenient, ready-to-eat options.**

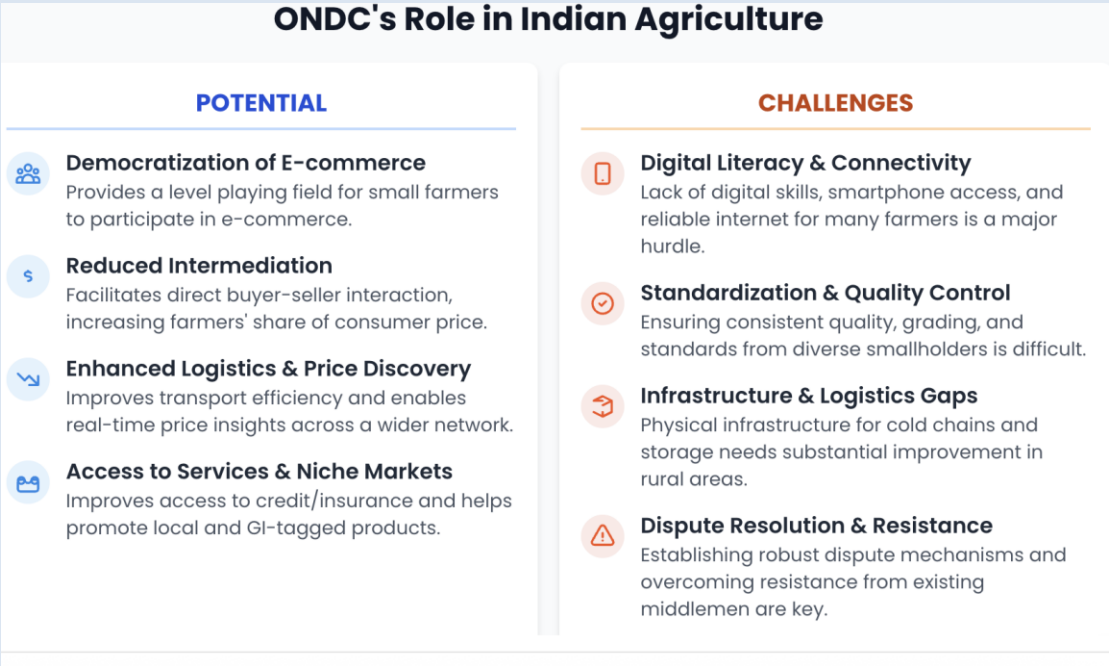
- Inadequate focus on quality and safety, including the unscientific use of chemicals like **pesticides (e.g., Tricyclazole in rice),** affects product quality and export competitiveness.
- **Regulatory Hurdles:** Multiple clearances and complex labor laws (for seasonal operations) create bureaucratic hurdles.
- **Limited Brand Strength:** Few Geographical Indication (GI) brands in the food sector limit global presence in premium markets.

India's food processing sector has immense potential to drive economic growth, farmer income, and nutritional security. Addressing infrastructural gaps, informality, regulatory hurdles, and quality standards is essential for global competitiveness.

The Potential of the Open Network for Digital Commerce (ONDC) to Revolutionize Agricultural e-commerce

ONDC crosses 200 million transaction mark

The Open Network for Digital Commerce (ONDC), launched by the Department for Promotion of Industry and Internal Trade (DPIIT), is a unique initiative aiming to **create a decentralized and interoperable e-commerce ecosystem.** It has significant potential to revolutionize agricultural e-commerce by addressing existing bottlenecks.



ONDC works on belief that an open network can drive large-scale transformation by giving equal opportunity to businesses of all sizes, breaking monopolies, and creating an ecosystem where innovation thrives.

6.14. Key Government Initiatives for Agri Sector

6.14.1. For Productivity and Sustainability

- **Irrigation and Water Use Efficiency:** The government is implementing the **Per Drop More Crop (PDMC)** initiative under the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to promote water efficiency through micro-irrigation.

Student Notes:

- **Soil Health:** The **PM-PRANAM** initiative incentivises states to adopt alternative fertilisers like Nano Urea to improve soil health. The use of '**Urea Gold' (urea combined with sulphur**) is also being promoted to enhance nutrient uptake.

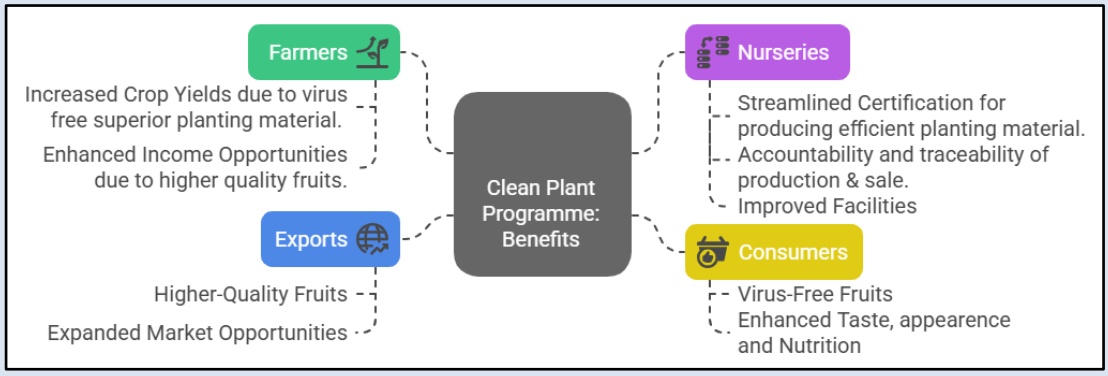
Farmers cultivating red gram crop advised to use drones for pest control

The standing crop this season has exhibited very good vegetative growth because of good rains last year,

- **Farm Mechanisation:** The **Sub-Mission on Agricultural Mechanisation (SMAM)** supports the establishment of **Custom Hiring Centres (CHCs)** and provides assistance to farmers for acquiring machinery. A scheme to provide **drones to 15,000 Women SHGs** for agricultural rental services has also been approved.
- **Crop Diversification & High-Value Crops:** Focus research on developing climate-resilient crop varieties and expanding cultivation of pulses in rice-fallow regions. Promote diversification towards high-value crops like fruits and vegetables.

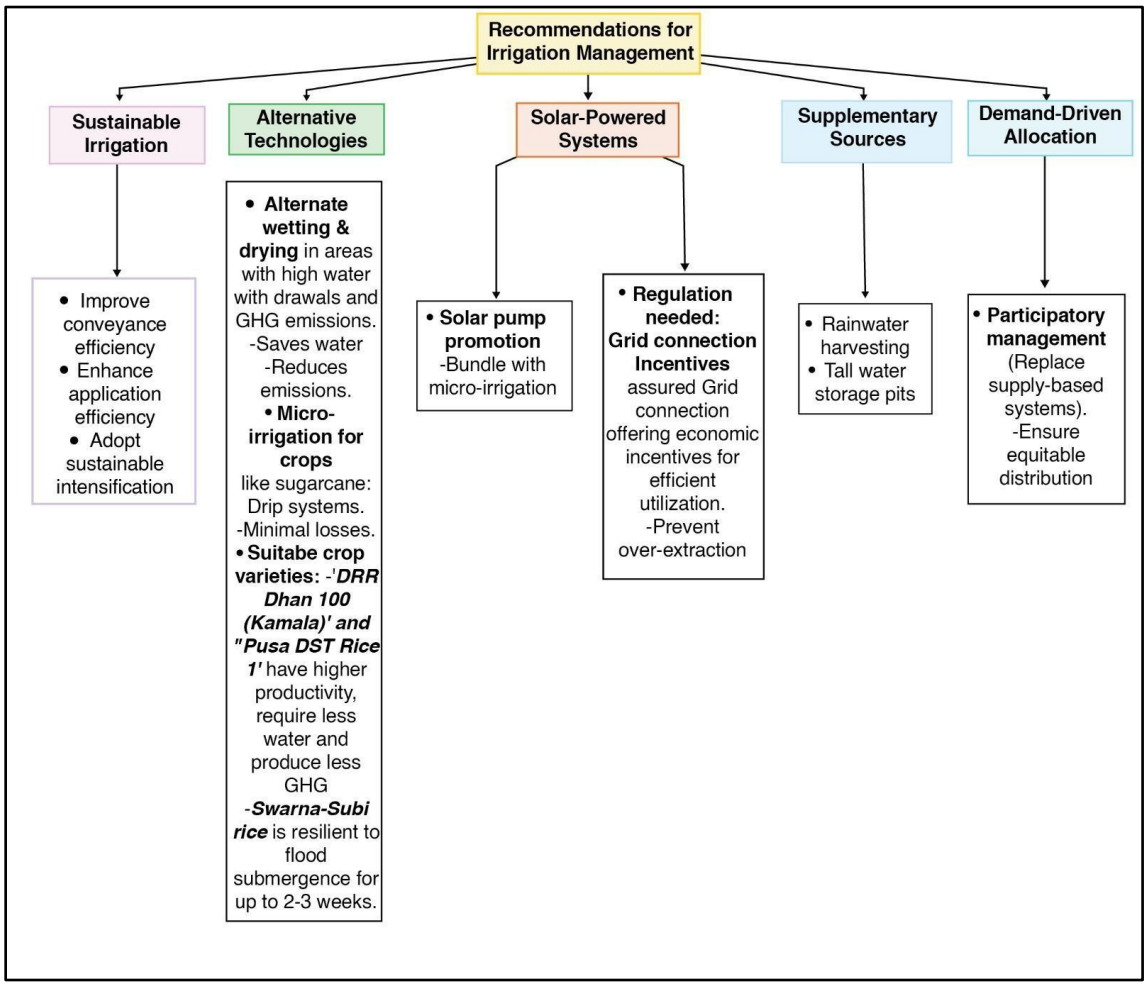
Clean Plant Program

- CPP is designed to address critical issues in horticulture by providing access to high-quality, virus-free planting material. It complements the ongoing Mission for Integrated Development of Horticulture (MIDH), a Centrally Sponsored Scheme aimed at the **holistic growth of the horticulture sector**.



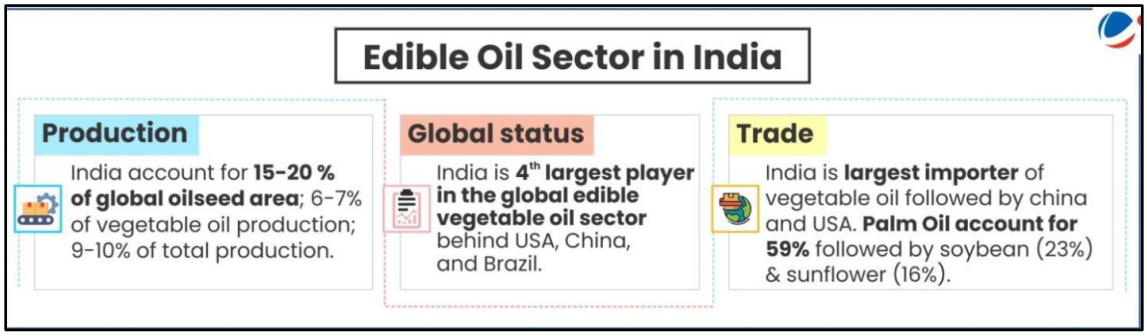
Student Notes:

6.14.2. For irrigation management and decarbonising agriculture:



6.14.3. To reduce import dependency:

Particularly for oilseeds and pulses.



National Mission on Edible Oils – Oilseeds (NMEO-OS) has following t**argets for 2030-31:**

- Increase **primary oilseed production** from **39 million tonnes (2022-23)** to **69.7 million tonnes**.
- Boost **domestic edible oil production** to **25.45 million tonnes**, meeting **~72% of projected domestic demand** (combined with NMEO-Oil Palm).
- Expand oilseed cultivation by **40 lakh hectares**, utilizing **rice & potato fallow lands**.

6.14.4. For Market and Income Support

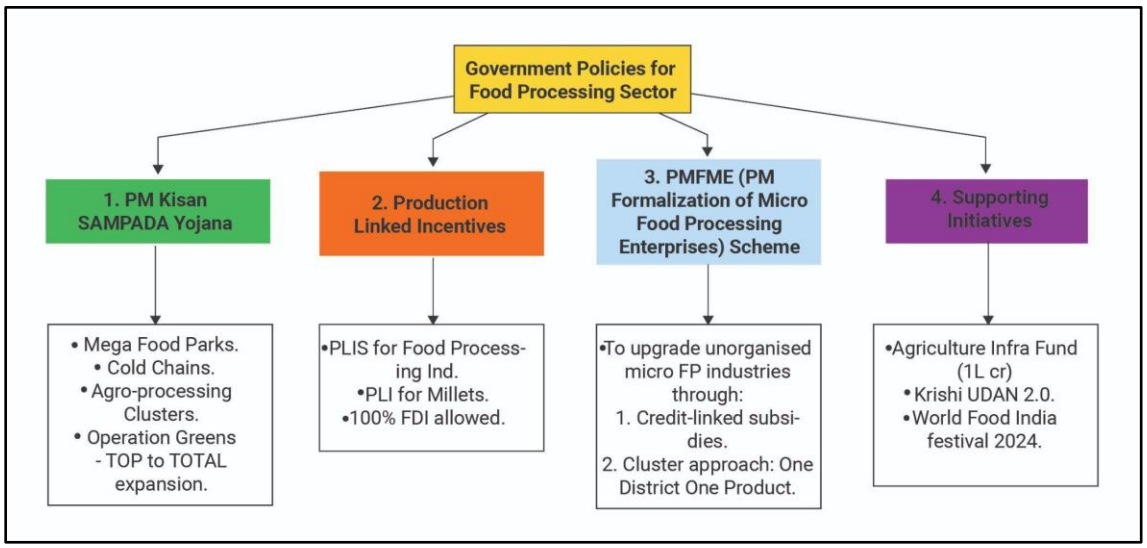
- **Price Support:** The government fixes the Minimum Support Price (MSP) at a level of at least 1.5 times the cost of production to act as a safety net for farmers.

Student Notes:

- **Credit and Insurance:** The **Kisan Credit Card (KCC)** scheme enables farmers to meet short-term capital needs. The **Pradhan Mantri Fasal Bima Yojana (PMFBY)**, the world's largest crop insurance program by enrolment, provides risk coverage against crop losses. The **Kisan Rin Portal (KRP)** was launched to digitise the process for interest subvention claims.
- **Marketing Infrastructure:** The **e-National Agriculture Market (e-NAM)** aims to improve price discovery by creating a unified national market. The **Agriculture Infrastructure Fund (AIF)** and the **Agriculture Marketing Infrastructure (AMI)** sub-scheme provide financing and subsidies for developing post-harvest management and storage infrastructure.
- **Income Support:** The **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** provides direct income support to farmer families.

6.14.5. For Food Processing and Allied Sectors

- **Food Processing:** The **Pradhan Mantri Kisan Sampada Yojana (PMKSY)** focuses on developing modern infrastructure and supply chains. The **Production Linked Incentive Scheme for Food Processing (PLISFPI)** aims to create globally competitive food processing leaders.



6.14.6. Allied Sector Development:

Initiatives like the **Rashtriya Gokul Mission** (for bovine breeds), **Livestock Health and Disease Control Program**, **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** (for fisheries), and the **National Fisheries Digital Platform (NFDP)** are in place to boost allied sectors.

Rashtriya Gokul Mission:

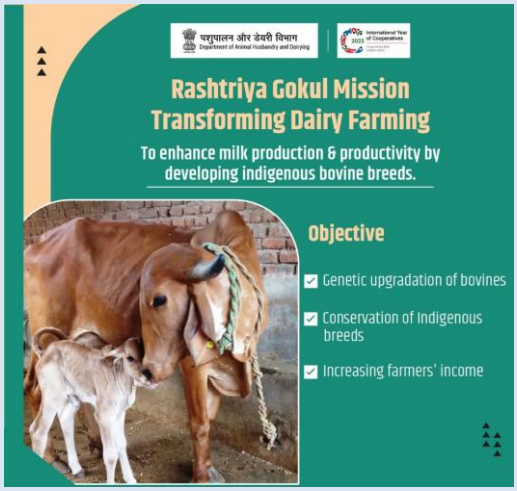
It aims at **development and conservation of indigenous bovine breeds** and **genetic upgradation** of the bovine population.

Specific Initiatives and Their Impact:

- **Sex-sorted semen production technology:** Produces female calves (up to 90% accuracy), enhancing dairy productivity.
- **Indigenous IVF media:** Affordable **in-vitro fertilization** technology promoting propagation of elite indigenous breeds.

Student Notes:

- **'Gau chip' for cattle & 'Mahish chip' for buffalo:** Enables precise genetic selection, aiding breed improvement.
- **National Milk Recording Programme:** Identifies superior animals within specific milk pockets for targeted breeding.
- **Traceability Platform:** Ensures **traceability of livestock products**, improving consumer trust and export potential.
- **National Gopal Ratna Awards:** Incentivizes excellence in livestock and dairy sectors; special category for **North Eastern Region (NER)** to promote regional development.



6.14.7. For Climate Adaptation & Organic farming

- The **National Mission on Sustainable Agriculture (NMSA)**, part of the National Action Plan on Climate Change, focuses on climate adaptation strategies like water efficiency, soil health management, and promoting climate-resilient crop varieties.


Cabinet approves irrigation scheme for 'modernising' water management

The key goal of the M-CADWM is to modernise the irrigation water supply network, ensuring that irrigation water reaches the designated farming clusters from existing canals or other water sources

  - 'Modernisation of Command Area Development and Water Management (**M-CADWM**)' as a sub-scheme of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) aims to **modernise the irrigation water supply network**, ensuring that irrigation water reaches the designated farming clusters from existing canals or other water sources.
- The government promotes organic farming through the **Paramparagat Krishi Vikas Yojana (PKVY)** and the **Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)**.

Natural Farming

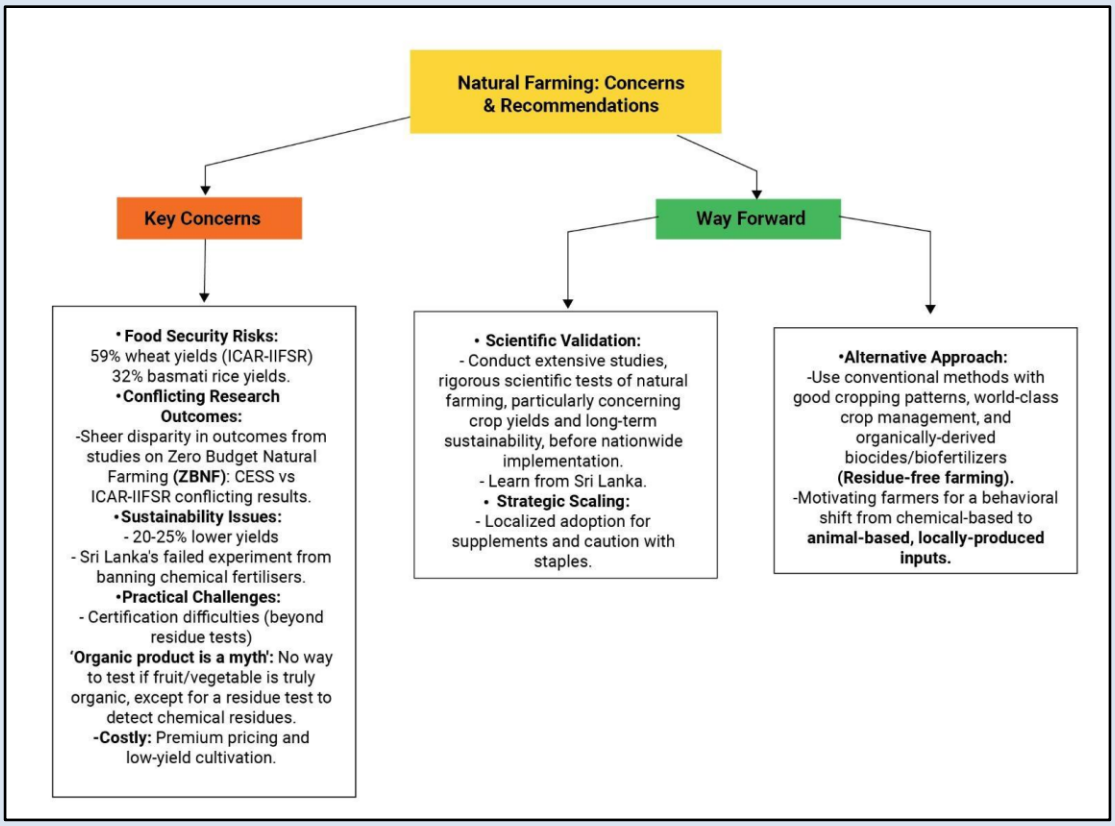
Natural farming is a **chemical-free approach to agriculture**. It emphasizes on-farm biomass recycling, biomass mulching, use of cow dung-urine formulations, and pest management through diversity and botanical concoctions. Grounded in **agro-ecology**, it integrates crops, trees, and livestock for optimum use of functional biodiversity.

National Mission on Natural Farming (NMNF):

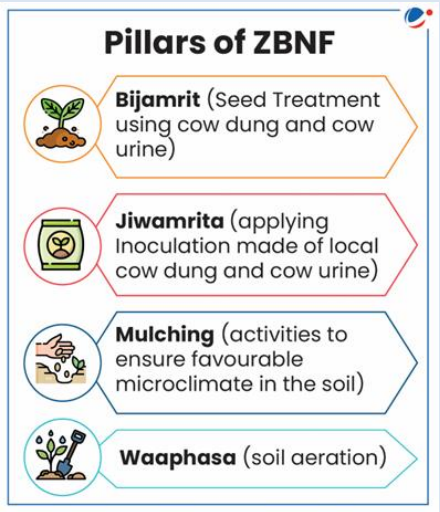
- Launched by the Union government in 2024 as a standalone **centrally-sponsored scheme** under the Ministry of Agriculture. It aims to motivate farmers to adopt chemical-free farming willingly based on its merits. An earlier scheme for natural farming was 'Bharatiya Prakritik Krishi Paddhati'.
- **Ambitious Implementation Targets: The NMNF has a total outlay of ₹2,481 crore, with ₹1,584 crore as the Centre's share.** The government intends to initiate **one crore farmers** into natural farming across **7.5 lakh hectares** within the next two years, implemented through **15,000 clusters** in Gram Panchayats. This includes establishing **10,000 need-based bio-input resource centres** and training farmers in Krishi Vigyan Kendras (KVKs), Agriculture Universities, and practising farmers' fields.

Student Notes:

Concerns & Recommendations:



'Zero Budget Natural Farming' (ZBNF)



ZBNF is a **chemical-free, traditional farming method** that aims to bring down the **cost of production to zero by eliminating the need for purchased inputs** like chemical fertilizers and pesticides. It relies on natural inputs like cow dung, cow urine, and plant residues.

- **Pillars of ZBNF: Jeevamrita** (applying inoculation made of local cow dung and cow urine), **Bijamrita** (seed treatment using cow dung and cow urine), **Mulching** (activities to ensure favorable microclimate in the soil), and **Waaphasa** (soil aeration).
- **Benefits:** Reduces input costs, improves soil health, conserves water, promotes biodiversity, and contributes to environmental sustainability. Studies suggest it can lead to higher crop yields compared to conventional farming.

The **Bhartiya Prakritik Krishi Paddati (BPKP),** a sub-scheme under PKVY, was launched in 2021 to promote natural farming, including ZBNF.

Student Notes:

7. INFRASTRUCTURE: ENERGY, PORTS, ROADS, AIRPORTS, RAILWAYS ETC. & INVESTMENT MODELS

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. What is the need for expanding the regional air connectivity in India? In this context, discuss the government's UDAN Scheme and its achievements. (2024, 15 Marks) 2. The adoption of electric vehicles is rapidly growing worldwide. How do electric vehicles contribute to reducing carbon emissions and what are the key benefits they offer compared to traditional combustion engine vehicles? (2023, 15 Marks) 3. Why is Public Private Partnership (PPP) required in Infrastructure projects? Examine the role of the PPP model in the redevelopment of Railway Stations in India. (2022, 10 Marks) 4. "Investment in infrastructure is essential for more rapid and inclusive economic growth." Discuss in the light of India's experience. (2021, 15 Marks) 5. "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)." Comment on the progress made in India in this regard. (2018, 10 marks) 6. Examine the development of airports in India through joint ventures under Public – private Partnership (PPP) model. What are the challenges faced by the authorities in this regard? (2017, 10 marks) 7. To what factors can the recent dramatic fall in equipment costs and tariff of solar energy be attributed? What implications does the trend have for the thermal power producers and the related industry? (2015, 10 marks)	This high-impact chapter focuses on the physical arteries of the economy and the models used to build them. The questions require a blend of sector-specific knowledge and a strong understanding of how large-scale projects are financed. The concept of **Public-Private Partnership (PPP)** is central to this chapter. The examiner frequently tests your understanding of its rationale, various models, and the complex reasons for its mixed success in India. **Q.** Adoption of the **PPP model** for infrastructure development of the country has not been free of criticism. Critically discuss **pros and cons** of the model. (2013, 10 marks) **Q.** Why is **Public Private Partnership (PPP)** required in Infrastructure projects? Examine the role of the PPP model in the redevelopment of Railway Stations in India. (2022, 10 Marks) You are also expected to have sector-specific knowledge and be aware of major government schemes and contemporary trends. • **Aviation** and regional connectivity. **Q.** What is the need for expanding the **regional air connectivity** in India? In this context, discuss the government's **UDAN Scheme** and its achievements. (2024, 15 Marks) • **Energy**, with a special focus on the transition to **renewable sources**. **Q.** To what factors can the recent dramatic fall in equipment costs and tariff of **solar energy** be attributed? What implications does the trend have for the thermal power producers and the related industry? (2015, 10 marks) Crucially, you must be able to link infrastructure development to the larger goal of economic growth. **Q.** "**Investment in infrastructure is essential for more rapid and inclusive economic growth.**"

Student Notes:

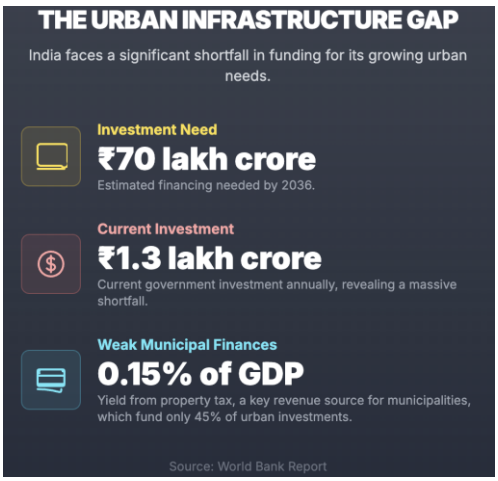
8. Explain how Private Public Partnership arrangements, in long gestation infrastructure projects, can transfer unsustainable liabilities to the future. What arrangements need to be put in place to ensure that successive generations' capacities are not compromised? (2014, 12.5 marks) 9. National Urban Transport Policy emphasises on 'moving people' instead of 'moving vehicles'. Discuss critically the success of the various strategies of the Government in this regard. (2014, 12.5 marks) 10. Write a note on India's green energy corridor to alleviate the problem of conventional energy. (2013, 10 marks) 11. Adoption of the PPP model for infrastructure development of the country has not been free of criticism. Critically discuss pros and cons of the model. (2013, 10 marks)	Discuss in the light of India's experience. (2021, 15 Marks) **How to Answer Questions in this Theme:** • For questions on **PPP in general**, provide a balanced view. Start with the "Why PPP?" (the **pros**, like leveraging private capital and efficiency), then delve into the "Why the criticism?" (the **cons**, like risk allocation issues, stalled projects), and conclude with suggestions for reform, citing the **Kelkar Committee** recommendations. • When asked about a **specific sector** (like airports or energy), structure your answer by first discussing the **need for development/modernization**. Then, explain the role of a specific investment model (like PPP) or government scheme (like UDAN) and critically evaluate its performance with real-world examples. • Always connect the dots. Explain *how* good infrastructure leads to reduced logistics costs, improved competitiveness, job creation, and ultimately, inclusive growth.

Infrastructure: The Backbone of the Economy

High-quality infrastructure is a critical enabler of economic growth, **improving competitiveness, reducing logistics costs, enhancing the quality of life, and** achieving the goal of rapid and inclusive growth. However, India faces many **critical infrastructural deficits**.

7.1. The Role of Infrastructure in Economic Development

High-quality infrastructure is the bedrock of a modern economy. It acts as a critical enabler of economic growth, improves competitiveness, enhances the quality of life, and is essential for achieving the goal of rapid and inclusive development.



7.1.1. Physical vs. Social Infrastructure

Physical Infrastructure

The hard, tangible networks essential for an economy's functioning.

Transport: Roads, railways, ports, airports.

Energy: Power plants, transmission networks.

Communication: Telecom networks, data centers.

Social Infrastructure

Facilities that enhance human capital and quality of life.

Healthcare: Hospitals, primary health centers.

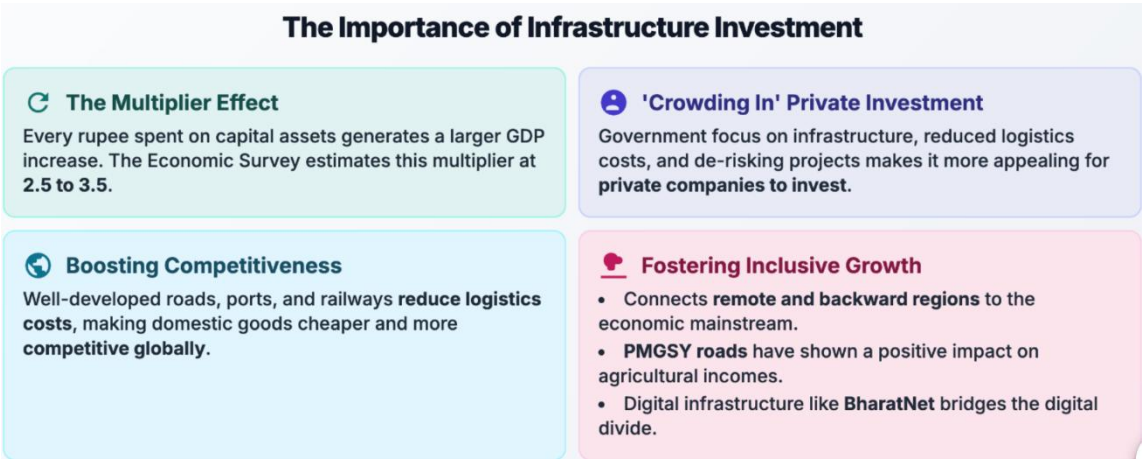
Education: Schools, colleges, universities.

Other Services: Sanitation, drinking water supply.

Student Notes:

Both physical and social infrastructure are complementary and essential for holistic development. While physical infrastructure drives economic activity, social infrastructure builds the human capital necessary to sustain that growth.

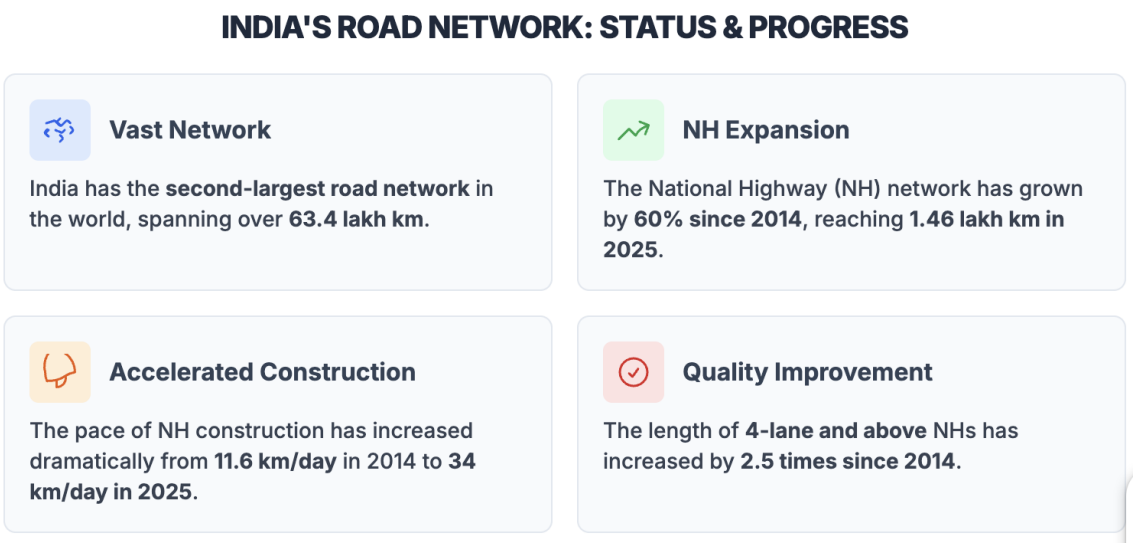
7.1.2. The Importance of investment in Infrastructure



7.2. Sector-wise Analysis of Infrastructure in India

A detailed examination of key infrastructure sectors reveals the progress made, the persistent challenges, and the strategic initiatives being undertaken to build a modern, efficient, and resilient infrastructure backbone for the Indian economy.

7.2.1. Roads and Highways

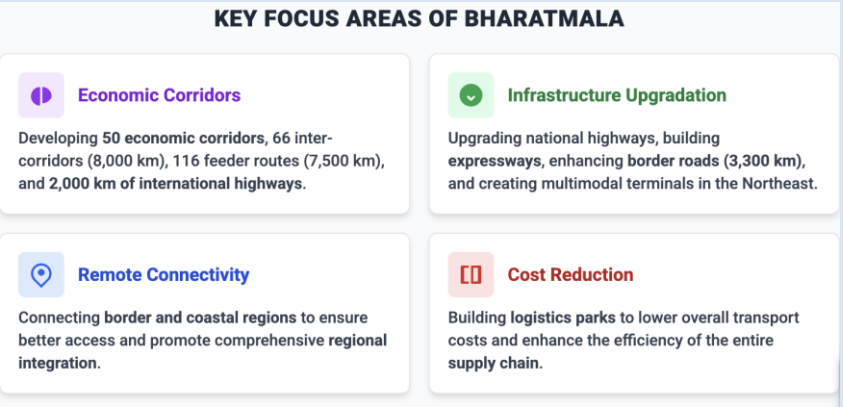


International comparisons			
Metric	**India**	**USA**	**China**
Total Road Network (km)	**~6.4 million**	**~6.6 million**	**~5.2 million**
Expressway/Highway Network (km)	**~160,000**	**~108,000**	**~160,000**
Road Density (km/sq. km)	**1.62**	**0.68**	**0.49**
Quality Assessment	**Low quality, 75% of highways are 2-lane, under-maintained**	**Mature, extensive interstate system**	**Modern, high-quality, rapid expansion**

Student Notes:

- **Key Government Initiatives:**

1. **Bharatmala Pariyojana:** A flagship program, started in 2017, to develop **34,800 km** of NHs, focusing on **Economic Corridors** and improving freight efficiency. Over **20,000 km** has been constructed. Expected completion by **2027-28** due to financial constraints and slow implementation.



   - **Notable projects:** Delhi-Mumbai Expressway (1,350 km), Amritsar-Jamnagar Expressway (470 km in Rajasthan), Ganga Expressway, Gorakhpur-Shamli Expressway.

2. **National High-Speed Road Corridor Projects:** The **National High-Speed Corridor Projects** aim to enhance **connectivity**, reduce **travel time**, and improve **logistics efficiency** across India. Key corridors include **Agra-Gwalior**, **Kharagpur-Moregram**, and **Raipur-Ranchi,** etc.

3. **Char Dham Mahamarg Vikas Pariyojana:** Road connectivity to key pilgrimage sites in Uttarakhand; 76% completed by late 2024.

4. **Key Initiatives for Logistics Efficiency in Road Connectivity:**

   - **Multi-Modal Logistics Parks (MMLP)**: To create seamless inter-modal freight movement. **6 MMLPs** awarded in **Chennai, Indore, Nagpur, Jalna, Jogighopa**, and **Bangalore**.
   - **National Logistics Policy (NLP):** Launched to complement Gati Shakti, the NLP focuses on **streamlining processes, promoting digitalization, and creating a more efficient logistics ecosystem.**
   - **National Highway Maintenance Policy**:
     - Maintenance through **Performance-Based Maintenance Contracts (PBMC)** for 5-7 years and **Short-Term Maintenance Contracts (STMC)** for 1-2 years.
     - **Long-term contracts** (20 years) via **Toll Operate and Transfer** and **Investment Trust** models.
   - **Vehicle Scrapping Policy**:
     - **82 Registered Vehicle Scrapping Facilities (RVSFs)** across **19 States/UTs**.
     - Scrapped **1.62 lakh vehicles**; **65 RVSFs** under construction.
   - **Ropeways Projects Development**:
     - **Fifteen projects** underway, including projects in **Varanasi, Dhosi Hill, Bijli Mahadev**, and **Ujjain**.

Important Themes in Roads and Highways

1. **Corridor-Based Approach in Highway Development:**

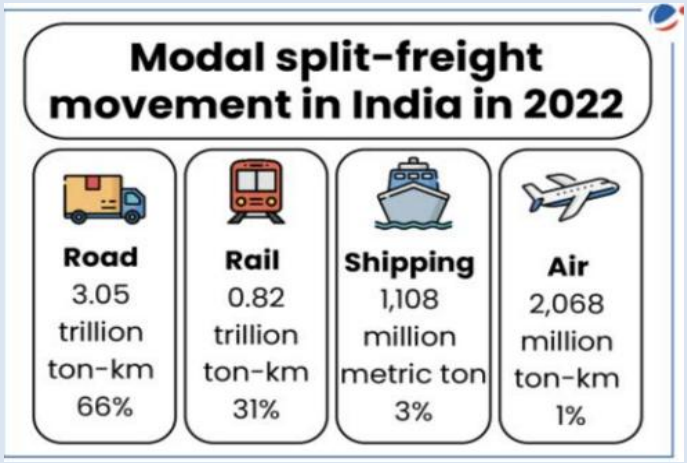
   What is the Corridor-Based Approach?

   - Corridor-based highway development focuses on building and upgrading **highways as integrated, continuous corridors** rather than isolated stretches or packages.

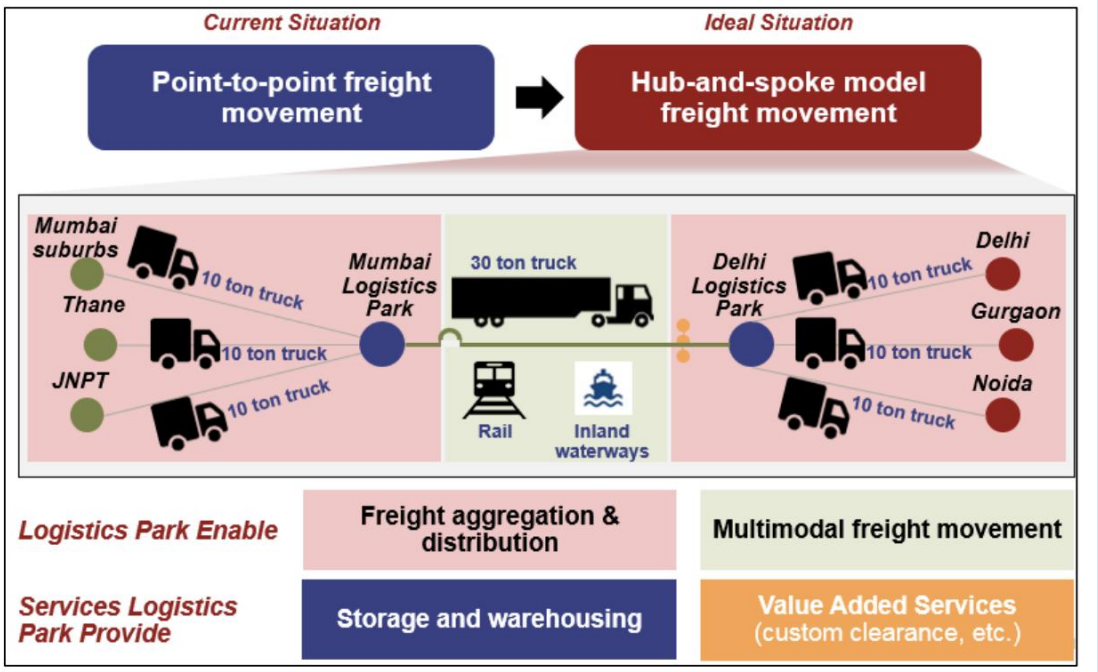
Student Notes:

- Before the 2000s, India's highway development focused on **individual projects**, addressing immediate connectivity needs. Post-2000s, the **corridor-based approach** emerged eg., **Golden Quadrilateral** .
- **The approach aims for:**
  - **Consistent design** standards and **user experience** across long routes.
  - Enhanced **logistics efficiency** and reduced travel time.
  - Better connectivity between economic centers, ports, and underserved regions.

2. Multi-Modal Logistics Parks (MMLPs)



A **Multi-Modal Logistics Park (MMLP)** is a transportation hub that integrates various modes of transportation, including **rail**, **road**, **sea**, and **air**, along with essential logistics services such as **warehousing**, **storage**, **distribution**, and **value-added services**. Developed under a **'Hub & Spoke' model**, MMLPs aim to streamline **freight transport** through multiple modes like highways, railways, and inland waterways.



Key Features

- **State-of-the-art Facilities**: MMLPs are equipped with **large-scale warehousing** for various commodities, offering custom clearance, truck parking, maintenance, and cold storage.
- **Comprehensive Infrastructure**: Facilities include warehouses, railway siding, custom clearance house, yard facilities, workshops, petrol pumps, administrative buildings, boarding/lodging, eating joints, and water treatment plants.

- **Technology-Driven Freight Management**: MMLPs focus on implementing a **state-of-the-art freight management system**, incorporating automated handling and value-added services like packaging, repackaging, and labelling.

Benefits

- **Reduced Transportation Costs**: Integration of multiple transport modes cuts down logistics costs.
- **Faster Delivery Times**: Multi-modal integration ensures quicker movement of goods.
- **Improved Inventory Management**: Efficient storage and handling facilities enhance stock management.
  Increased Flexibility in Supply Chain Operations: The park provides flexible solutions for varying logistics needs.

Government Initiatives: The government has approved **35 locations** across India for the development of **Multi-Modal Logistics Parks (MMLPs)**, aiming to improve the efficiency and integration of India's logistics network.

Key Challenges and Suggestions in the Road Sector:

Challenges	Suggestions
Land Acquisition & Delays: Legal and political hurdles often delay projects.	**Increase Private Participation**: Use **PPP models** like **BOT**, **HAM**, and **TOT** to attract investment.
Funding Gaps: NHAI's **debt** and stressed assets lead to **higher capital costs**.	**Boost Investment**: Ensure continuous **investment** in infrastructure and reduce financing risks.
Quality & Maintenance Deficit: The **L1 system** results in poor **construction quality**. **75% of highways** are **two-lane**, and **40% of roads** are **dirt roads**.	**Enforce Quality Standards**: Conduct **safety audits**, use **advanced materials**, and apply the **4E's** (Education, Engineering, Enforcement, Emergency Care).
Last-Mile Connectivity & Congestion: Gaps in **connectivity** and **urban congestion** affect efficiency.	**Integrate Multi-Modal Transport**: Enhance **transport systems** and upgrade existing infrastructure.
Environmental Delays & Impact: **Environmental clearance** and **deforestation** issues cause delays.	**Use Digital Tools**: Implement **drones**, **geospatial mapping**, and **smart road solutions** for faster project completion.
	Strengthen Maintenance: Allocate funds for **regular upkeep** and establish local **quality audits** to ensure durability.

Student Notes:

7.2.2. Railways

Indian Railways: Current Status & Progress

BG Network Electrification

Approximately **98%** of the Broad Gauge network is now **electrified**, enhancing efficiency and sustainability.

Passenger Transport

Indian Railways serves as the lifeline of the nation, transporting around **3 crore passengers daily**.

Vande Bharat Trains

136 Vande Bharat Express trains were operational as of Feb 2025, transforming passenger experience on key routes with modern amenities.

Metro Rail Length

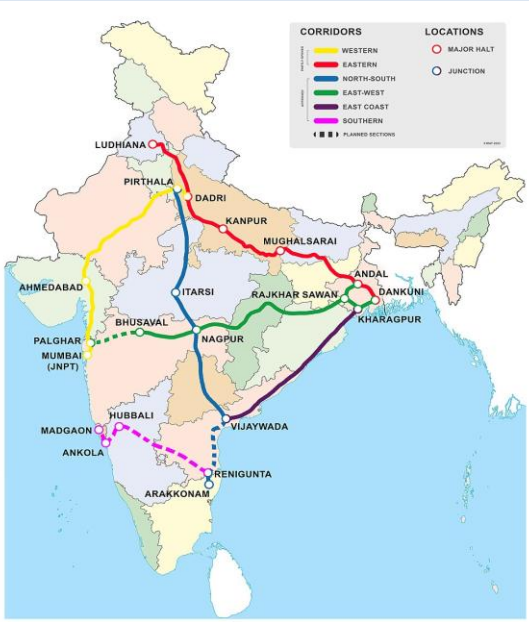
Urban mobility is rapidly expanding, with **1013 km of metro rail** operational by 2025 across various cities.

- **International comparisons:**

Metric	India	USA	China
Total Route Length (km)	**~68,000**	**~225,000 (freight-dominated)**	**~150,000**
Electrified Route (%)	**~98% (Broad Guage)**	**Very Low (primarily diesel-electric)**	**~72%**
High-Speed Rail (HSR) Length (km)	**Minimal (Vande Bharat semi-HSR)**	**Minimal (Acela Express)**	**~50,000 (by 2025)**
Primary Focus	**Passenger (volume), Mixed Freight**	**Freight (heavy haul)**	**High-Speed Passenger, Heavy Freight**

- **Key Government Initiatives:**

1. **Dedicated Freight Corridors (DFCs):** Over **2,700 km** of DFCs have been commissioned to segregate freight and passenger traffic, which will increase the average speed of freight trains from **25 kmph to 75 kmph**.
   - As of 2024, the **Eastern Dedicated Freight Corridor** (EDFC) is fully operational, while the **Western Dedicated Freight Corridor** (WDFC) is 85% operational. Additionally, other corridors like the **East-West** and **North-South** corridors are in development with planned completion by 2024.

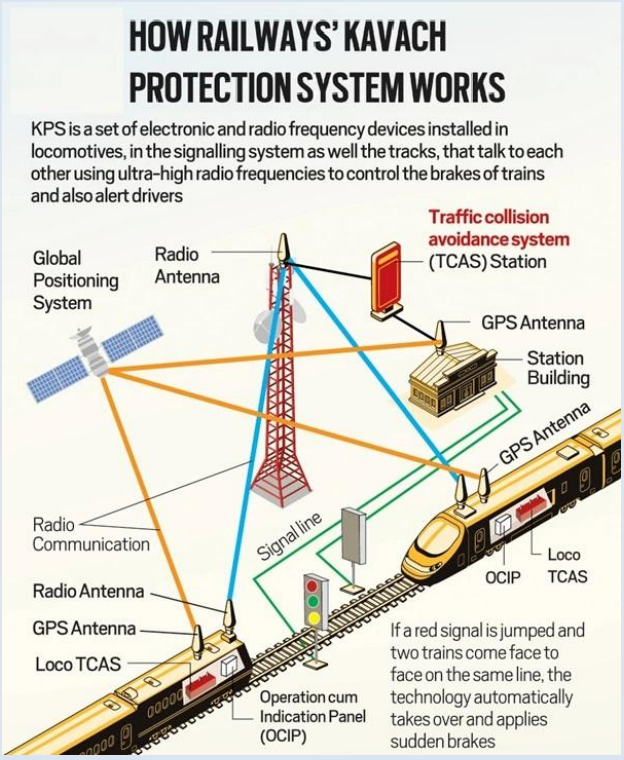


DEDICATED FREIGHT CORRIDORS OF INDIA

Student Notes:

2. **Mumbai-Ahmedabad High-Speed Rail Project**: Sanctioned in **2015**, this **508 km** project, supported by **Japan**, has a revised cost of **₹1.08 lakh crore**. As of **October 2024**, it has achieved **47.17%** physical progress.

3. **Key Initiatives to Improve Signalling Systems in Indian Railways**
   - **Elimination of Mechanical Signalling**: Replacing outdated **mechanical signalling** with **Electrical/Electronic Interlocking (EI)** systems, automating signals and points to enhance **safety** and **efficiency**. Many stations have upgraded to **EI**, freeing significant areas from mechanical systems.
   - **Kavach**: **Kavach**, an **Automatic Train Protection (ATP)** system, automatically applies brakes if a train nears a danger signal or if the driver fails to respond, preventing **collisions**. Continuous upgrades ensure better performance and safety.



   - **Automatic Block Signalling (ABS)**: **ABS** manages train movement on high-density routes, increasing capacity and reducing human error. Expanding installation enhances **safety** and **throughput**.
   - **Signal Design Automation Tool for EI**: This tool automates the design of **route control charts** for interlocking systems, improving **efficiency** and reducing errors. Upgraded for better support in system design.

Railway Safety: Key Initiatives & Challenges

Causes of Railway Accidents

Derailment: Poor track & signal maintenance.	**Human Error:** 75% of derailments due to staff failure.	**Signal Failure:** Highlighted by the Balasore collision.
Fire Accidents: Caused by negligence & short circuits.	**HR Shortage:** ~20,000 safety-critical vacancies.	

Key Safety Initiatives

KAVACH System: Automatic Train Protection (ATP) deployed on **1400+ route km**.
Rashtriya Rail Sanraksha Kosh (RRSK): A **₹1 lakh crore** fund for safety infrastructure.
Infrastructure Upgradation: Replacing mechanical signals with **Electrical/Electronic Interlocking**.
Technology: GPS-based Fog Safety Devices and **SIMS** for accident reporting.
Safety Measures: Elimination of **Unmanned Level Crossings** on Broad Gauge routes.

Way Forward & Recommendations

Independent Oversight: Establish a **Railway Safety Authority** (Kakodkar Committee).
Outcome-Based Framework: Measure impact of RRSK funds (CAG Report).
AI-Enabled Monitoring: Use AI to detect safety risks and notify management.
Define Track Safety Tolerances: Based on speed and best practices (Khanna Committee).
Adopt Best Practices: Implement proven models like Mumbai's ATP system nationwide.

Student Notes:

Challenges and Suggestions for Railway Sector

Challenges	Suggestions
Network Congestion: Over **50%** of the high-density network is utilized beyond **100% capacity**, leading to delays.	**Expand Route Length**: Add new tracks and routes to serve **unconnected regions** and reduce congestion.
Low Freight Share: Railways hold only **27%** of the total **freight movement**, with roads dominating.	**Encourage PPPs**: Promote **public-private partnerships** for **freight and passenger services**, station redevelopment, and logistics infrastructure.
Financial Health: A high **Operating Ratio (98%)** leaves minimal surplus for **modernization**.	**Adopt AI & Big Data**: Use **AI and big data** for **predictive maintenance**, and modernize production units for greater **efficiency**.
Governance Issues: The **Bibek Debroy Committee** stressed the need for an **independent regulator** and greater **decentralization**.	**Appoint an Independent Regulator**: Ensure **transparency** and **competitiveness** in **tariffs**, **safety**, and **service quality**.

7.2.3. Aviation

Current Status & Progress:

Airports	Operational Airports (incl. heliports/water aerodromes): 160	Total Cargo Handled (FY25): 3.7 million tonnes	International Cargo Handled (FY25): 2.32 million tonnes

International comparisons

Metric	India	USA	China
Number of Airports	**~160 (operational)**	**>5,000 (public use)**	**~250 (civilian)**
Domestic Market Rank	**3rd Largest**	**1st Largest**	**2nd Largest**
Per Capita Air Travel	**0.13 seats/capita**	**High**	**0.49 seats/capita**
Airport Investment (% of GDP)	**Not specified**	**Low**	**0.2% (Leads ranking)**

Key Government Initiatives in the Aviation Sector:

1. **UDAN (Ude Desh ka Aam Nagrik) Scheme:** A regional connectivity scheme that has operationalized over **600 new routes** and **88 airports**, making air travel more accessible.
2. **Airport Privatization:** Major airports are being developed under the **PPP model** to attract private investment and improve efficiency.
3. **Digital Initiatives**: Implementation of **Digi Yatra** facial recognition system at major airports for seamless passenger experience.
4. **Regional Connectivity Scheme (RCS)**: Enhancing air connectivity to **remote areas** through subsidies and support for airlines operating to underserved regions.

Student Notes:

5. **National Civil Aviation Policy (NCAP)**: Focused on **sustainable growth** in the aviation sector, promoting **affordable air travel** and increasing the number of airports in India.

Challenges and Suggestions for Aviation Sector

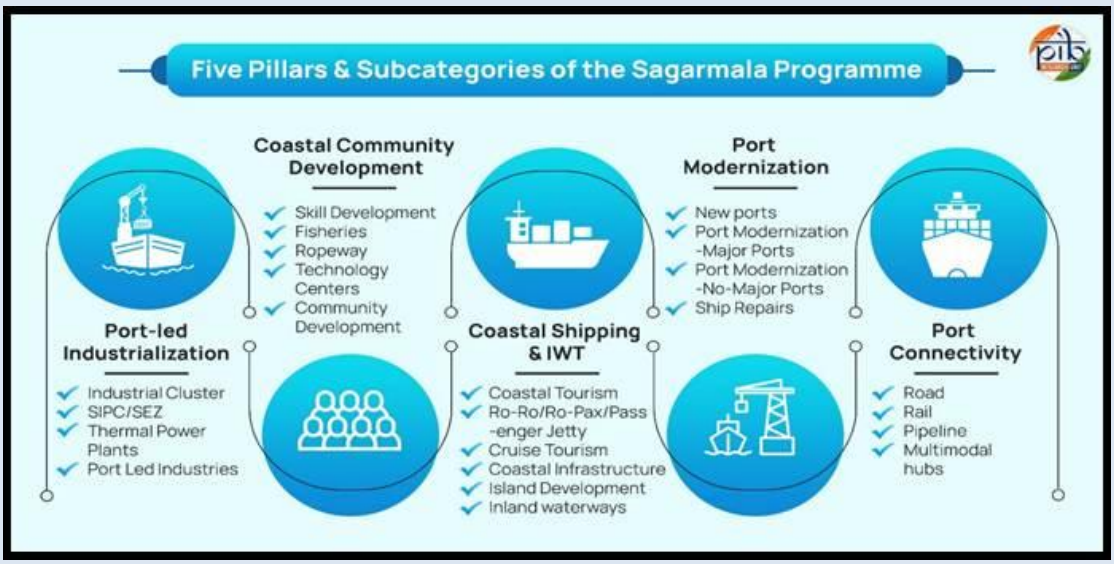
Challenges	Suggestions
Acute Infrastructure Bottlenecks at Major Airports: Airports in **Delhi** and **Mumbai** are operating beyond capacity, causing **congestion**, flight delays, and safety concerns due to **encroachment** of airspace.	**Expand Airport Capacity**: Focus on increasing capacity at key hubs through **Joint Ventures (JVs)** and **PPP models**.
Underdeveloped MRO Ecosystem: **Punitive taxation** and complex regulations make it cost-effective for airlines to send aircraft abroad for maintenance, resulting in a **foreign exchange outflow** and longer **turnaround times**.	**Develop MRO Ecosystem**: Establish **local maintenance, repair, and overhaul (MRO)** capabilities and streamline the regulatory environment.
Critical Shortage of Skilled Human Resources: **High demand** for **trained pilots**, **ATCOs**, and **maintenance engineers** leads to **human error** and **crew fatigue**, impacting safety.	**Increase Training and Recruitment**: **Train and hire more pilots, ATCOs**, and **maintenance engineers** to meet growing demand.
Precarious Financial Viability of Airlines: **High ATF taxes** (45-50%) and issues with **Pratt & Whitney engines** have affected airline **financial stability**.	**Rationalize ATF Taxes**: **Reduce aviation turbine fuel (ATF) taxes** to align with global standards and improve profitability.

7.2.4. Ports and Waterways

- **Current Status & Progress:**
  - India has a long coastline of **7,500 km** and **12 major ports**.
  - The average turnaround time at major ports has improved significantly, from **4.2 days in 2014 to 2.2 days in 2023**.
- **Key Initiatives:**

1. **Sagarmala Programme:** The **Sagarmala Programme** focuses on **port-led development**, enhancing **infrastructure**, **coastal connectivity**, and **logistics efficiency**. With ₹3,714 crore allocated to 130 projects, it leverages India's **7,500 km coastline** and **14,500 km navigable waterways** to foster **trade and industrial growth**.

Student Notes:



2. **Vadhavan Mega Port:** The **Vadhavan Mega Port**, with an investment of over **₹76,000 crore**, will feature **nine container terminals** and multiple berths, enhancing **cargo handling capacity** and improving India's **global trade connectivity**.

3. **Tuticorin International Container Terminal:** The **Tuticorin Terminal**, inaugurated in **September 2024**, will handle **6 lakh TEUs** annually and accommodate **vessels up to 10,000 TEUs**, strengthening **India's ability** to manage **larger ships** and boosting **container throughput**.

4. **Chabahar Port and Sittwe Port: Chabahar Port** in Iran, linked to **Mumbai via INSTC**, and **Sittwe Port** in Myanmar provide strategic alternatives to traditional shipping routes. These ports reduce **transport costs** and **transit time**, improving **connectivity** to **Eurasia** and **India's North-East**.

5. **Maritime India Vision (MIV) 2030: MIV 2030** is a comprehensive blueprint with over **150 initiatives** to make India a **global maritime leader**. It covers **ports**, **shipyards**, and **inland waterways**, aiming to drive **sustainable growth** and **global competitiveness**.

6. **Green Tug Transition Program (GTTP):** The **Green Tug Transition Program (GTTP)** aims to replace **fuel-based harbour tugs** with **eco-friendly, sustainable fuel-powered tugs** by **2040**, reducing the **carbon footprint** of major ports and aligning with **global environmental standards**.

7. **Inland Waterways Development:** The **Inland Waterways Authority of India (IWAI)** is developing **26 new national waterways**, offering a **cost-effective, sustainable transport option** to ease **road and rail congestion** and improve **regional connectivity**.

Challenges and Suggestions for Port Sector

Challenges	Suggestions
Inadequate Last-Mile and Hinterland Connectivity: Poor **road** and **rail connectivity** lead to delays and inefficiencies in cargo evacuation, with long queues outside ports.	**Develop Deep-Water Trans-shipment Port**: Establish a domestic **trans-shipment hub** (e.g., **Galathea Bay**, Nicobar Islands) to capture traffic and reduce logistics costs.

Student Notes:

Sub-optimal Capacity Utilization and Process Inefficiencies: **49.1%** average capacity utilization at major ports due to procedural inefficiencies like truck entry, security checks, and inter-terminal transfers.	**Standardize Procedures**: Create a **seamless national maritime network** by **standardizing operational procedures** and **digital platforms** across ports.
Absence of a Major Indian Trans-shipment Hub: **75%** of India's trans-shipped cargo moves through foreign ports, resulting in **USD 200-220 million** loss annually.	**Create Trans-shipment Hub**: Develop an **Indian trans-shipment hub** to capture global cargo traffic and reduce dependency on foreign ports.
Complex and Fragmented Regulatory Environment: Multiple agencies and overlapping jurisdictions lead to delays in approvals and hinder efficient planning.	**Unified Transport Ministry**: Implement the **NTDPC's recommendation** to create a **single, unified transport ministry** for better integration of road, rail, and maritime sectors.
Technological Lag in Automation and Digitization: Gaps in **automation**, **AI**, and **big data** usage reduce productivity and competitiveness.	**Embrace Automation and Digitization**: Deploy advanced **automation** for container handling and create a **fully integrated, paperless digital ecosystem**.

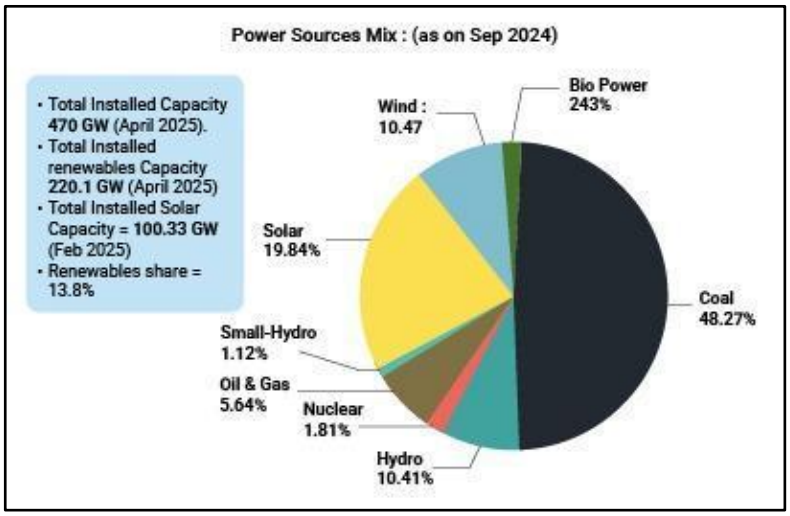
7.2.5. Energy Sector

Energy is the backbone of manufacturing, services, and agriculture. As India urbanizes and expands its infrastructure, energy demand would rise.

Current Status & Progress:

Energy	Total Installed Capacity: 457 GW (Nov 2024)	Renewable Energy Share (incl. Hydro): 46.3% of installed capacity.	AT&C Losses (FY23): 15.37%

- These capacity additions have drastically reduced the nation's energy shortages from 4.2% in FY 2013-14 to a mere **0.1% in FY 2024-25**, while **per capita electricity consumption** has surged by nearly 46% over the decade (**1,395 kWh in 2023-24**).



- **The Green Energy Transition:**
  - India has set an ambitious target of achieving **500 GW** of non-fossil fuel energy capacity by 2030.
  - The **Green Energy Corridor** project is being implemented to facilitate the evacuation of power from renewable energy-rich states.

Student Notes:

International comparison

Metric	India	USA	China
Primary Energy Consumption (2023)	**39 exajoules (EJ)**	**94 EJ**	**171 EJ**
Share of Coal in Electricity Generation	**~75%**	**~16%**	**~60%**
Share of Renewables in Electricity Generation (incl. Hydro)	**~23%**	**~22%**	**~31%**
Installed Renewable Capacity	**~204 GW in 2024**	**~428 GW**	**~1,828 GW**
Per Capita Energy Consumption	**1,395 kWh in 2023-24** **(27.3 GJ per person in 2023)**	**277 GJ/capita**	**120 GJ/capita**

Challenges and Recommendations for India's Energy Sector

Challenges	Recommendations
Financial Distress of DISCOMs: Poor financial health of state-owned **Distribution Companies (DISCOMs)** due to high **AT&C losses** (15.37% in FY23), subsidized tariffs, and inefficient operations.	**Improve Financial and Regulatory Environment**: Shift towards a **market-based pricing regime** for electricity and explore financing mechanisms like **green bonds** and **InvITs** for renewable projects.
Grid Integration and Stability: Integrating **500 GW of non-fossil fuel capacity** by 2030, challenging due to the **intermittency** of solar and wind power, risking grid instability.	**Grid Modernization and Energy Storage**: Invest in **grid modernization**, **forecasting systems**, and scale up **energy storage** solutions like **Battery Energy Storage Systems (BESS)** and **pumped hydro storage**.
Regulatory and Land Hurdles for Renewables: **Land acquisition regulations** and **unilateral renegotiation** of PPAs hamper renewable energy projects and erode investor confidence.	**Accelerated Transition to Renewables**: Aim for **500 GW of non-fossil fuel capacity by 2030**, strengthen initiatives like the **International Solar Alliance**, and expand biofuels and **green hydrogen** production.
Over-Dependence on Coal: Coal accounts for **75%** of electricity generation, and transitioning away while meeting growing demand is challenging.	**Aggressive Expansion of Domestic Production**: Encourage **domestic exploration** through reforms like **reduction in 'No-Go' areas** and partnerships like **ONGC-bp** to boost oil and gas output.
High Import Dependence and Geopolitical Risks: India's reliance on **imports** for oil, gas, and critical minerals exposes it to **global price volatility** and **geopolitical risks**.	**Strategic Diversification of Suppliers**: Secure **long-term LNG contracts** with nations like the **US, Australia, and Qatar**, and deepen ties with countries like **Russia** for discounted oil.
Domestic Production Limitations: **National Oil Companies (NOCs)** face challenges in increasing output due to aging wells and lack of investment.	**Build Robust Infrastructure and Strategic Reserves**: Strengthen **strategic crude oil reserves** (9-10 days of imports) and expand **gas pipeline networks** (33,000 km by 2030).

Student Notes:

Maintaining Energy Affordability: The government's substantial fiscal burden to shield citizens from global price volatility through **subsidies** and tax cuts.	**Rationalize ATF Taxes**: Reduce **Aviation Turbine Fuel (ATF)** taxes to bring operating costs in line with global benchmarks.
Delayed Green Transition Pressure: Slow development of **domestic carbon regulations** hinders investment in **green technologies** compared to global counterparts.	**Promote Green Technologies**: Increase investment in **green technologies** and create stronger domestic carbon regulations to ensure long-term sustainability.

The government has instituted many **de-bottlenecking and facilitatory mechanisms (to promote infrastructure development in country**) like the National Infrastructure Pipeline, National Monetisation Pipeline and PM-Gati Sakti that have made progress. We shall discuss them in detail in later section.

7.2.6. Other Key Sectors of Infrastructure

1. Digital Infrastructure

- **Current Status & Progress**: The **India Stack** (Aadhaar, UPI, DigiLocker) has created a **world-class Digital Public Infrastructure (DPI)**. India has over **120 crore telecom subscribers** and **95 crore internet subscribers**, with **5G services** rolled out across the country.
- **Key Initiative**: **BharatNet** – A project aimed at providing **high-speed broadband** connectivity to **2.5 lakh Gram Panchayats**.
- **Challenges**:
  - **Digital Divide**: A significant gap in **internet access** and quality between **urban** and **rural areas**.
  - **Last-Mile Connectivity**: Ensuring reliable **last-mile connectivity** under **BharatNet** remains a major challenge.

2. Urban Infrastructure

- **Key Initiatives**:
  - **Smart Cities Mission**: Developing **100 cities** with **core infrastructure** and a **decent quality of life**.
  - **Urban Mobility**: Expanding **metro rail systems**, with **over 1,000 km** of metro lines either operational or under construction in **29 cities**.
- **Challenges**:
  - **Sustainable Financing**: Identifying **sustainable financing** models for **Urban Local Bodies (ULBs)** remains a key challenge.
  - **Integrated Planning**: **Lack of integrated planning** has led to issues like **poor last-mile connectivity** for metro systems.

3. Rural Infrastructure

- **Key Initiatives**:
  - **Jal Jeevan Mission (JJM)**: Aiming to provide a **functional household tap connection** to every **rural household by 2024**. Over **79%** of rural households have been covered so far.
  - **Pradhan Mantri Gram Sadak Yojana (PMGSY)**: A successful program that has provided **all-weather road connectivity** to over **99%** of targeted habitations.
- **Impact**: These initiatives have had a transformative effect on **rural quality of life**, **health outcomes**, and **economic opportunities**.

Student Notes:

7.3. Important Themes Related To Infrastructure

7.3.1. PM Gati Shakti National Master Plan (NMP)

It is an approach for **growth accelerating trustworthy infrastructure** through synchronized, holistic, integrated, and comprehensive planning based on knowledge, technology and innovation.

The approach is driven by **7 engines** - Railways, Roads, Ports, Waterways, Airports, Mass Transport, and Logistics Infrastructure.

Targets

- The national highway network aims to reach **200,000 km of national highways.**
- Plan include **200 new airports, heliports, and water aerodromes** to support aviation.
- Rail cargo capacity to grow to **1,600 tons within FY25.**
- Power grid to extend reach via **454,200 circuit km of lines.**
- Increase renewable capacity to **225 GW by FY25 and complete around 17,000 km of gas pipelines.**

Characteristics

On boarding Whole of the Government on the Single platform: PMGS has integrated 44 Central Ministries and 36 States/UTs with more than 1600 data layers.

Social Sector Impact: PMGS social sector expansion has enabled data-driven planning for schools, hospitals, and anganwadis. **E.g.,** PMGS portal was used to link PM Shri Schools with local industries for district-specific skill training.

PM GatiShakti State Master Plans (SMPs): All 36 States/UTs have developed the PMGS portals, aligned with the PM GatiShakti National Master Plan platform.

Trade Facilitation: PMGS has been instrumental in addressing critical infrastructure gaps, reducing logistics costs, etc. E.g., Planning over 8,891 km of roads using NMP.

Driving Sustainable, Data-Driven Development: PMGS employs GIS tools to ensure efficient infrastructure development. E.g., A 13 GW renewable energy project from Leh (Ladakh) to Kaithal (Haryana) achieved optimal alignment of the 'Green Energy Corridor' for inter-state transmission.

Challenges and Recommendations

Challenges	Recommendations
Interoperability and Non-Digitization of Government Data: Lack of standardization and universal protocols hinders data integration.	**Simplify Land Acquisition and Approvals**: Streamline land acquisition and project approval processes for faster project completion.

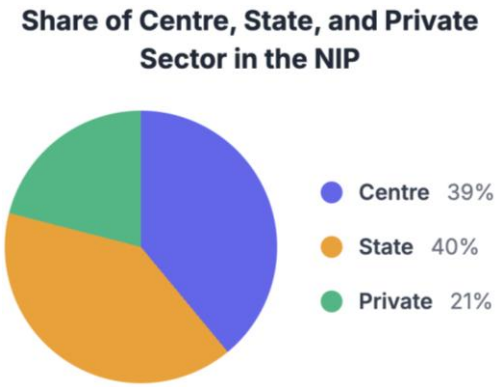
Student Notes:

Data Security Concerns: Hesitancy in sharing **infrastructure data** due to security concerns.	**Open Gati Shakti Platform to Private Sector**: Allow **private sector** access to **non-sensitive data** for collaboration and transparency.
Limited Data Sharing with Private Sector: Hinders **optimal decision-making** for major infrastructure projects under the **National Monetisation Pipeline (NMP)**.	**Leverage GIS and Remote Sensing**: Focus on **redeveloping degraded or polluted areas** for infrastructure instead of acquiring new land.
Land Acquisition Issues: **Land acquisition** delays many development projects, acting as a major roadblock to progress.	**Decentralized Planning with District-Level Expansion**: Use the **PM Gati Shakti District Master Plan portal** to ensure **inclusive growth** and regional planning.
Legal and Environmental Compliance Issues: **Legal challenges** and **environmental standards non-compliance** delay project execution.	**Address Legal and Environmental Challenges**: Ensure projects comply with **environmental standards** and reduce **legal hurdles** in development.

7.3.2. National Infrastructure Pipeline

The government launched the National Infrastructure Pipeline (NIP) with a forward-looking approach and with infrastructure investment of **around ₹111 lakh crore during FY20-25** to provide high quality infrastructure across the country.

To complement NIP, the NMP focuses on **monetizing existing infrastructure assets** to free up capital for further development.



Key benefits of NIP

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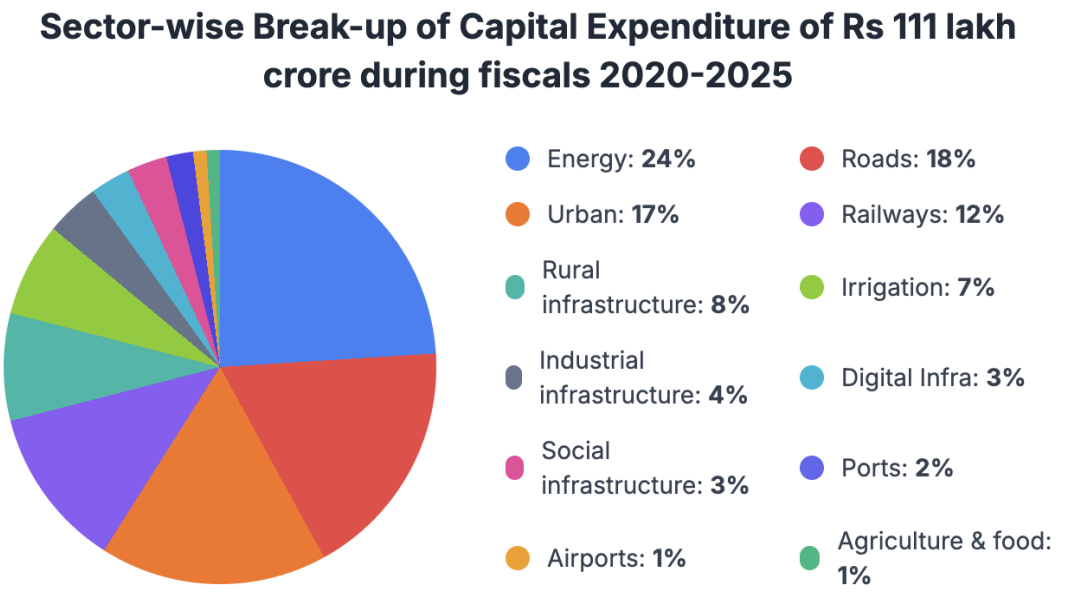


Achievements of NIP

As the NIP concluded in March 2025, a review shows mixed results.

- Planned investments rose from ₹111 trillion to ₹168.93 trillion.
- Completed investments as of March 2025 are ₹31.1 trillion, achieving 28% of the original target.
- If ongoing projects worth ₹83.54 trillion are included, the achievement stands at 103%.

National Monetisation Pipeline (NMP)

Due to the need for private financing, the NMP was launched in 2021 **to complement the NIP by monetising state-owned assets.**

- The target was to **generate ₹6 trillion** by offloading brownfield assets to the private sector.
- As per the Economic Survey 2024-25, ₹3.86 trillion has been raised, with roads, power, coal, and mining as major contributors.
- The government aims to mobilize an additional ₹1.91 trillion in FY25, with a new five-year roadmap releasing in August 2025.

7.3.3 National Logistics Policy (NLP) 2022

The **logistics cost** in India accounted for **13-14%** of **GDP**, which hindered the country's aspiration to become a **manufacturing hub**. To address this, the **National Logistics Policy 2022** aims to reduce logistics costs to **8-9% of GDP**, aligning with global standards.

Focus areas in the **National Logistics Policy** include:

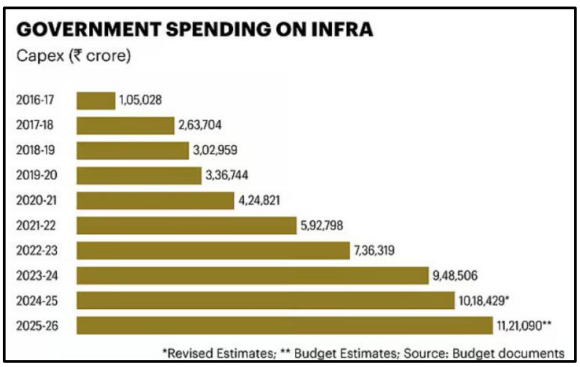
- **Sectoral Plan for Efficient Logistics (SPEL)** for major sectors like **Coal**, **Cement**, **Fertilizer**, **Steel**, **Pharma**, etc.
- Examining existing **supply chain networks** and promoting **multi-modal transport**, **digitalization**, and **automation**.
- **Unified Logistics Interface Platform (ULIP)**: A unified portal that allows exporters to track consignments and access digital services like **benchmarking**, **container tracking**, and **performance analytics**.
- **E-logistics Services (E-logs) Portal**: Set up to quickly resolve **grievances** related to **government agencies**.

Achievements:

- **Improvement in Logistics Ranking**: As per the **World Bank's Logistics Performance Index (LPI)** 2023, India moved up to **22nd rank** in the **International Shipments** category and **38th rank** overall in the **Logistics Performance Index** score.
- **Shift towards Rail Freight**: The **Coal Logistics Plan** proposes a shift towards a **railway-based system** in **First Mile Connectivity** projects. This approach is expected to:
  - Minimize **air pollution**, alleviate **traffic congestion**, and reduce **carbon emissions** by approximately **100,000 tonnes per annum**.
  - Achieve a **10% saving** in the **average turnaround time of wagons** nationwide.

7.4. Investment Models

Infrastructure development requires massive capital, which can be mobilized through three primary models:



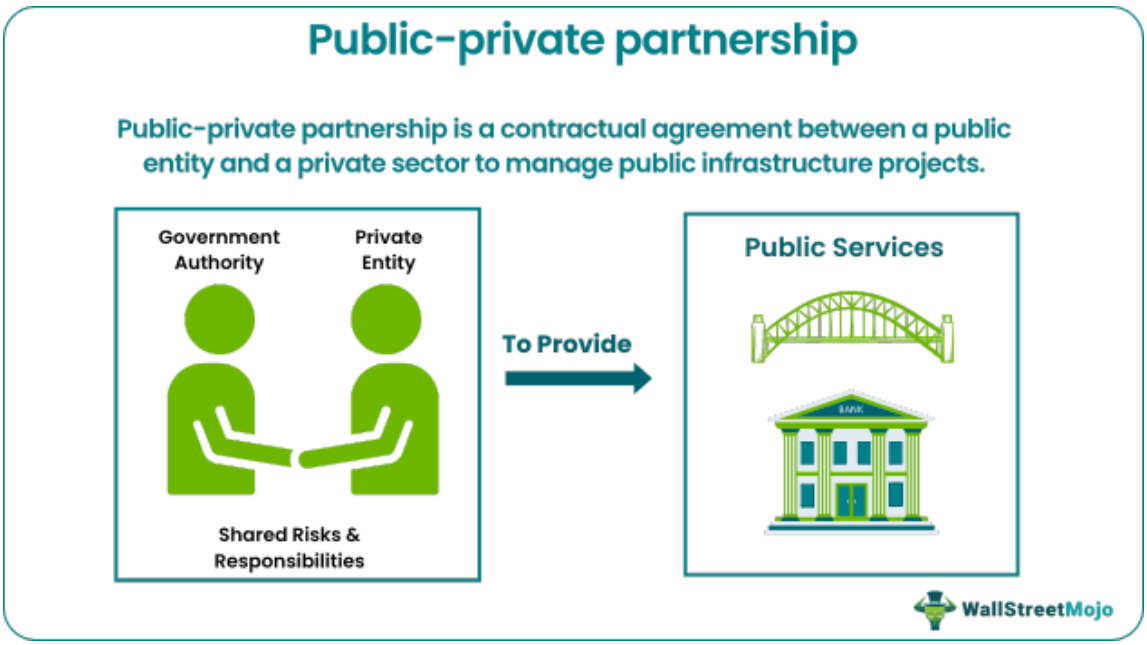
- **Public Funding:** Fully funded by the government through budgetary resources.
- **Private Investment:** Fully funded and developed by private entities.
- **Public-Private Partnership (PPP):** A collaborative model where the government and private sector share risks, responsibilities, and rewards to deliver a project.

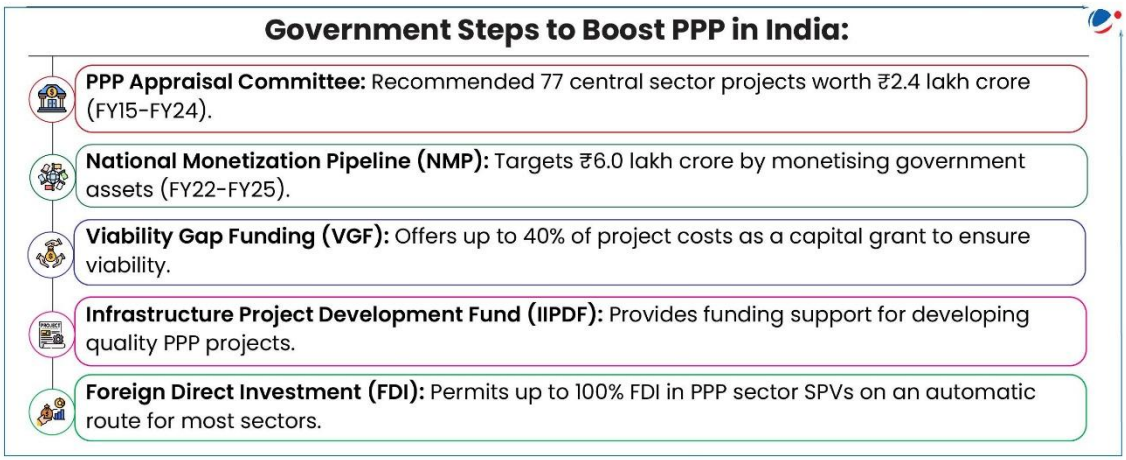
Student Notes:

7.4.1. Public-Private Partnership (PPP)

PPP is a collaboration between **governments** and **private companies** to provide **public services** or **infrastructure**.

The **Private Investment Unit** in the **Department of Economic Affairs** is responsible for **policy-level matters** concerning **PPPs**, including **Policies**, **Schemes**, **programs**, **Model Concession Agreements**, and **Capacity Building** in India.





7.4.2. Models of PPP

Models of Public-Private Partnership (PPP)

BOT (Build-Operate-Transfer)

Private partner **designs, builds, operates**, and then **transfers** the facility back to the public sector. The private partner finances the project and collects revenue from users. Ex: NHAI highway projects.

BOO (Build-Own-Operate)

The private party **builds, owns, and operates** the facility permanently. The public sector agrees to 'purchase' the goods and services produced by the project on mutually agreed terms.

BOOT (Build-Own-Operate-Transfer)

A variant of BOT where the private partner **builds, owns, and operates** the facility for a specified period, after which ownership is **transferred** to the government. Used for highways and ports.

BOLT (Build-Own-Lease-Transfer)

A private entity **builds and owns** a facility, then **leases** it to the public sector. At the end of the lease period, ownership is **transferred** back to the government.

DBFO (Design-Build-Finance-Operate)

The private party takes on the entire responsibility for **design, construction, finance, and operation** of the project for the full concession period.

LDO (Lease-Develop-Operate)

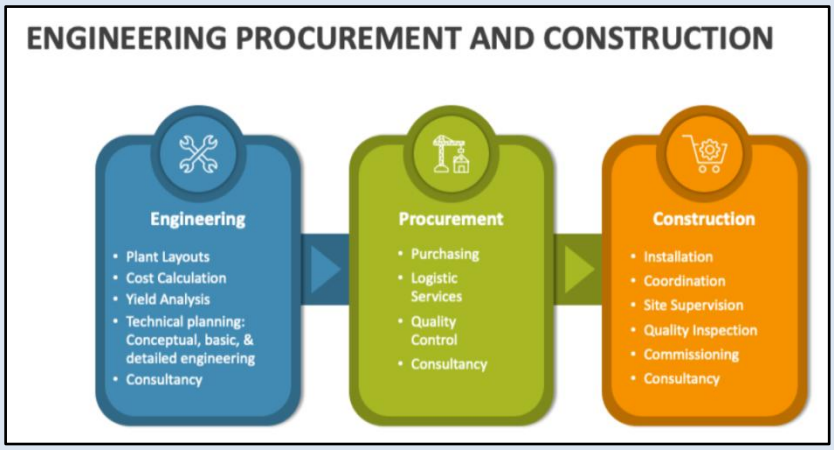
The government retains ownership of the facility. A private promoter **leases, develops, and operates** it, making payments through a lease agreement. Mostly used for airport facilities.

Figure 1.1 Examples of PPP Contract Types

7.4.3. Analysis of Major PPP Models in India

1. The Engineering, Procurement, and Construction (EPC) Model

In response to the challenges of the PPP model, the government has increasingly turned to the EPC model, particularly for highway projects.



Under the EPC model, the **government bears the entire cost of the project**. The private contractor is responsible for the engineering, procurement of materials, and construction of the project within a **specified timeline and cost.**

Student Notes:

Difference from PPP:

The primary difference lies in the financial risk. In an EPC contract, the financial burden is entirely on the government, whereas in a PPP, the private entity shares a significant portion of the financial risk. The private player in an EPC model has a **more limited role focused on construction, with a fixed profit margin**.

Advantages:

- **Reduced Risk for Private Players:** The government handles land acquisition and regulatory clearances, significantly **de-risking the project for the private contractor**. This encourages more private builders to participate.
- **Faster Project Execution:** With the government taking on upfront responsibilities, the construction timeline can be shorter.
- **Clear Accountability:** With a single contractor responsible for the entire construction, it is easier to hold them accountable for project delivery.

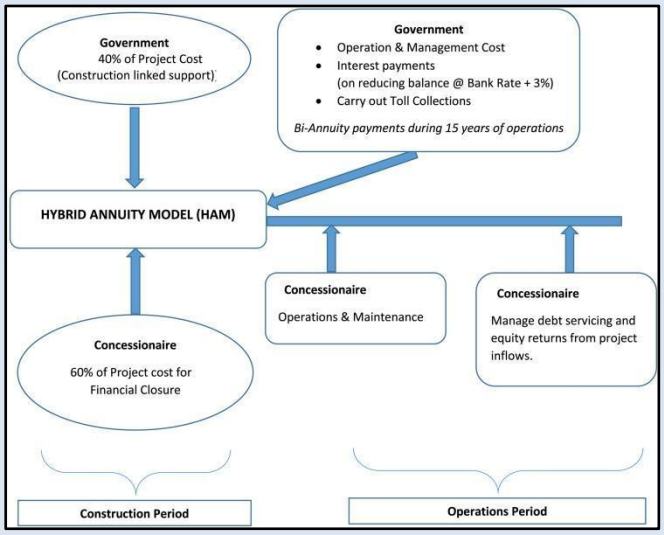
Challenges:

- **Significant Financial Burden on the Government:** The entire project cost is borne by the public exchequer, which **can strain government finances**, especially during periods of high fiscal deficit.
- **Lack of Incentive for Cost Reduction:** As the contractor receives a pre-decided amount, there is **little incentive to reduce the project cost**.
- **Limited Private Sector Innovation in Operations:** The private sector's role is confined to construction, limiting their ability to bring in operational efficiencies.
- **Potential for Delays in Government Clearances:** While the responsibility lies with the government, **any delays in providing land or clearances** can still impact the project timeline.
- **Unsustainable in the Long Run:** Due to the high fiscal burden, exclusive reliance on the EPC model is not a sustainable long-term strategy for infrastructure development.

2. The Hybrid Annuity Model (HAM)

To balance the risks and leverage the strengths of both the PPP and EPC models, the government introduced the Hybrid Annuity Model (HAM).

HAM is a **mix of the EPC and BOT models**. The government commits to **funding 40% of the project cost** during the construction phase in five equal installments. The remaining **60% is arranged by the private developer.** The developer's investment is recovered through **fixed annuity payments from the government over the concession period.**



How it differs from PPP

Unlike a pure BOT model where the developer bears the entire financial and traffic risk, in HAM, the government provides significant financial support upfront and assumes the revenue collection responsibility, thus insulating the developer from traffic risk.

Student Notes:

Advantages:

- **Balanced Risk Sharing:** It provides a **more sensible sharing of risks** between the government and the private developer, making it easier to secure financing for the remaining amount.
- **Assured Returns for Developers:** The fixed annuity payments provide a **steady and predictable revenue stream**, making projects more attractive to investors.
- **Government Assumes Revenue Risk:** The **government is responsible for toll collection**, shielding the developer from uncertainties in traffic flow. By de-risking the project and providing financial support, HAM has helped revive private sector interest in road projects that were stalled.

Challenges:

- **Skewed Bidding:** The model has seen larger, **more established players being more aggressive** in their bids compared to smaller companies.
- **Delays in Financial Closure:** Developers have still faced challenges in achieving financial closure for their portion of the funding. Any delay in the government's annuity payments can strain the developer's finances.
- **Land Acquisition Delays:** Despite the government's commitment, **delays in land acquisition and regulatory clearances** continue to be a challenge for some HAM projects.
- **Government's Annuity Payment Obligations:** The fixed annuity payments create a **long-term financial liability for the government.**

3. The Swiss Challenge Model

The Swiss Challenge model is a procurement process where **a public authority that has received an unsolicited bid for a project publishes the bid and invites third parties to match or better it**. The original proponent is then often given **the "right of first refusal"** to match the best counter-proposal.

Relevance for the Indian Economy

This model can be particularly relevant for projects that require **innovative and unique solutions**.

- **Promotes Innovation and Competition:** It encourages private players to come up with creative project proposals and **fosters competition** to achieve the best value.
- **Transparency:** The open bidding process promotes **transparency and accountability** in project awards.
- **Faster Project Initiation:** It can potentially **speed up the process of initiating projects** based on unsolicited but valuable proposals.

However, concerns have been raised about the **potential for information asymmetry** favoring the original proponent and the risk of fostering crony capitalism if not implemented with a strong legal and regulatory framework. Therefore, its application in India has been suggested for **smaller, less complex projects where creativity is a key determinant of success**.

4. Viability Gap Funding

Viability Gap Funding (VGF) is a **specialized financial instrument** designed to support infrastructure projects developed **under Public-Private Partnerships (PPPs)** that are economically justified but not financially viable on their own (E.g., social sectors etc.). It acts as a catalyst to attract private sector (lower the entry barriers) capital and efficiency into the crucial task of nation-building.

E.g., Viability gap funding for **off-shore wind farms** was one of the several green measures announced in the **interim budget FY25** to signal policy stability.

Student Notes:

Advantages:

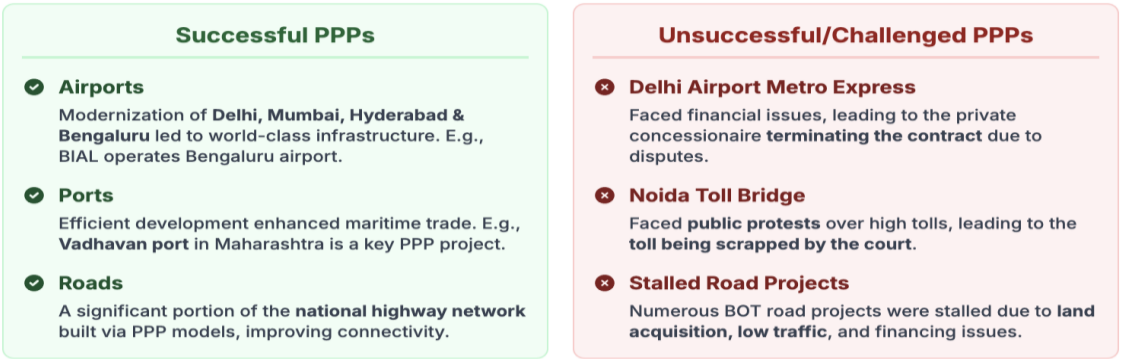
- **Bridging the Viability Gap:** The primary role of VGF is to provide a **one-time capital grant** from the government to a PPP project to **bridge the gap** between the project's cost and its expected revenue, thereby making it financially attractive for private developers.
- **De-risking Private Investment:** By providing upfront government support, the VGF scheme significantly **de-risks the project** for the private investor. It **reduces the initial capital requirement** and enhances the project's financial returns, making it easier for the developer to **secure debt** financing from banks and financial institutions.
- **Enabling Social Infrastructure Development:** VGF scheme now extends support to social infrastructure projects like **wastewater treatment, solid waste management, and, through pilot projects, health and education infrastructure**, which have high economic benefits but **long gestation periods.**
- **Unlocking Brownfield Asset Potential:** The scheme's utility has also been extended to support the **monetization of brownfield assets**. It can provide financial support to government entities for projects involving the operation and maintenance of existing infrastructure, thereby unlocking their value.

Challenges:

- **Robustness of Project Appraisal:** The success of VGF hinges on the **accurate appraisal of a project's economic justification and financial viability**. Flawed appraisals can lead to the funding of undeserving projects or an overestimation of the required grant, leading to an inefficient use of public funds.
- **Contingent Fiscal Liabilities:** While VGF is a one-time grant, it is part of a larger PPP framework that often involves other government commitments and guarantees. These can create **significant contingent liabilities for the government**, which can strain public finances in the future if projects fail.
- **Risk of Moral Hazard:** There is a potential risk of **moral hazard where private developers may deliberately understate a project's expected revenues or overstate its costs** to secure a larger viability gap fund, thereby privatizing profits while socializing risks.
- **Broader PPP Ecosystem Challenges:** Issues such as delays in land acquisition, regulatory clearances, and a weak contract enforcement and dispute resolution mechanism continue to plague PPP projects, limiting the impact of financial instruments like VGF.
- **Limited Capacity of Implementing Agencies:** The capacity of government departments and urban local bodies to structure, procures, and manage complex PPP projects remains a significant challenge. This can lead to poorly designed projects that fail to attract private interest, even with the availability of VGF.

Strengthening institutional capacity, ensuring balanced risk allocation, and creating a stable and transparent regulatory environment will be key to unlocking the full potential of Public-Private Partnerships in India.

Successful and Unsuccessful/Challenged PPP Projects in India:



Student Notes:

International Comparisons:

- **United States:** The US has a **more mature and legally robust framework** for PPPs. The US market is also **more decentralized**, with individual states having their own PPP legislation and programs.
- **China:** China has witnessed a massive rollout of infrastructure projects using PPPs, often involving **state-linked enterprises (SOEs) as the "private" partners**. The Chinese model is characterized by **strong state direction and support**, leading to rapid project execution.

7.4.4. Challenges of PPPs in India

Despite their potential, PPPs in India have faced several hurdles:

7.4.5. Recommendations

The **Vijay Kelkar Committee** was set up **to review and revitalize the PPP model** in India. Its key recommendations included:

Public-Private Partnerships (PPPs) have emerged as a critical mechanism for infrastructure development in India, leveraging private sector efficiency and resources to meet the country's growing demands. However, the journey of PPPs has been marked by both significant successes and formidable challenges, leading to the evolution of various implementation models.

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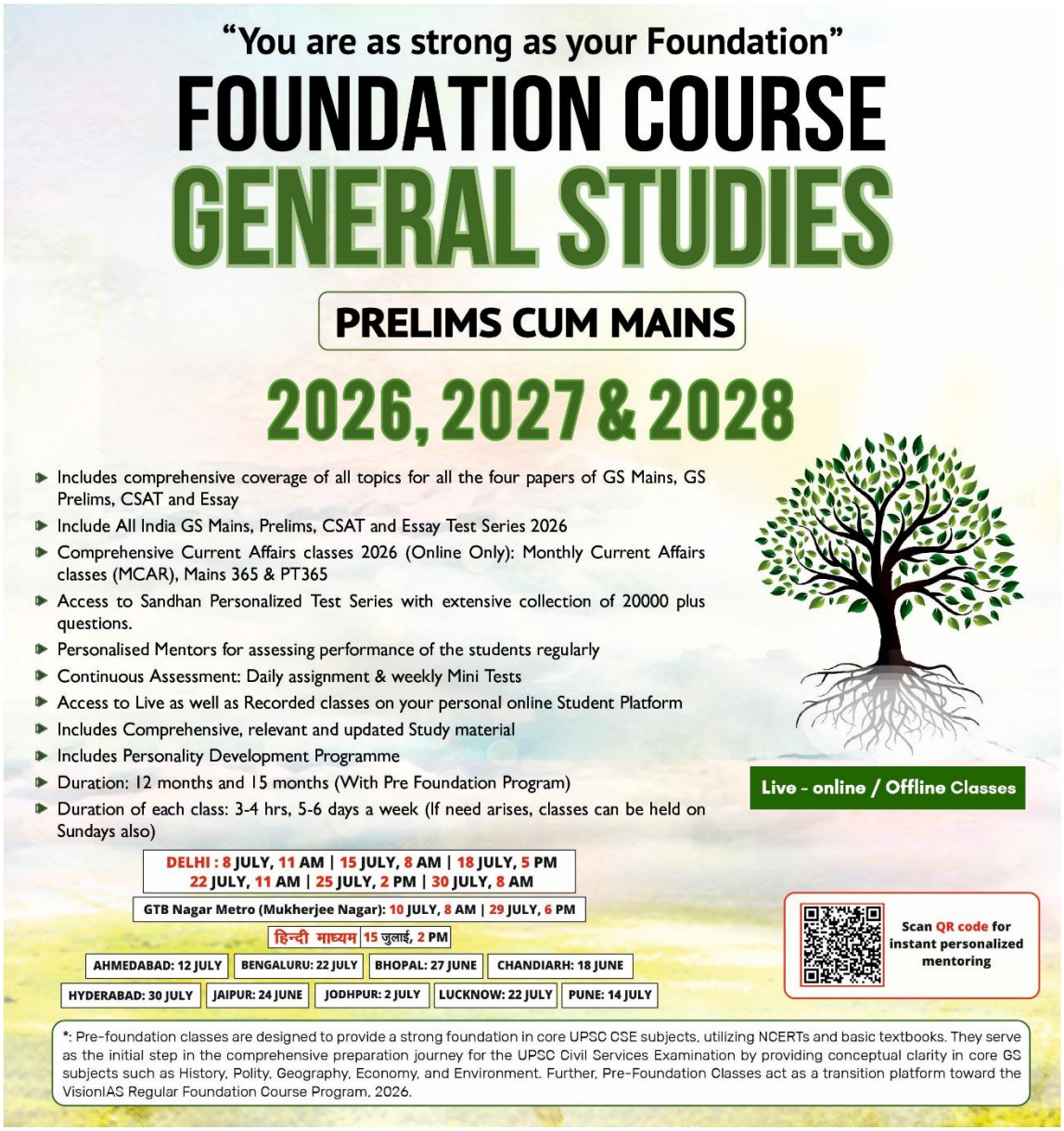


Student Notes:

8. POVERTY, UNEMPLOYMENT & ISSUES RELATED TO INCLUSIVE GROWTH

Thematic Analysis of PYQs

Theme Wise PYQs	Thematic Analysis
1. Examine the pattern and trend of public expenditure on social services in the post-reforms period in India. To what extent this has been in consonance with achieving the objective of inclusive growth? (2024, 10 Marks) **2.** Most of the unemployment in India is structural in nature. Examine the methodology adopted to compute unemployment in the country and suggest improvements. (2023, 15 Marks) **3.** Distinguish between 'care economy' and 'monetized economy'. How can the care economy be brought into monetized economy through women empowerment? (2023, 15 Marks) **4.** Is inclusive growth possible in a market economy? State the significance of financial inclusion in achieving economic growth in India. (2022, 10 Marks) **5.** The increase in life expectancy in the country has led to newer health challenges in the community. What are those challenges and what steps need to be taken to meet them? (2022, 10 Marks) **6.** Explain intra-generational and inter-generational issues of equity from the perspective of inclusive growth and sustainable growth. (2020, 10 Marks) **7.** It is argued that the strategy of inclusive growth is intended to meet the objectives of inclusiveness and sustainability together. Comment on this statement. (2019, 15 Marks) **8.** What are the salient features of inclusive growth? Has India been experiencing such a growth process? Analyse and suggest measures for inclusive growth. (2017, 15 marks) **9.** How globalization has led to the reduction of employment in the formal sector of the Indian economy? Is increased informalization detrimental to the development of the country? (2016, 12.5 marks) **10.** Pradhan Mantri Jan-Dhan Yojana (PMJDY) is necessary for bringing unbanked to the institutional finance fold. Do you agree with this for financial inclusion of the poorer section of	This is a critical and highly analytical theme dealing with the ultimate goals of economic policy: **improving human well-being, ensuring equity, and creating jobs**. The questions are less about numbers and more about the qualitative outcomes of growth. The examiner is deeply interested in the **pattern of growth**, not just its pace. Core concepts like **"jobless growth"** and the **structural nature of unemployment** in India are recurring themes. **Q.** The nature of economic growth in India in recent times is often described as **jobless growth**. Do you agree with this view? Give arguments in favour of your answer. (2015, 10 marks) **Q.** Most of the **unemployment in India is structural in nature**. Examine the methodology adopted to compute unemployment in the country and suggest improvements. (2023, 15 Marks) Questions frequently ask you to define **"inclusive growth"** and critically evaluate whether India is actually achieving it. This requires a nuanced understanding of its various dimensions. **Q.** Is **inclusive growth possible in a market economy**? State the significance of financial inclusion in achieving economic growth in India. (2022, 10 Marks) **Q.** What are the salient features of **inclusive growth**? Has India been experiencing such a growth process? Analyse and suggest measures for inclusive growth. (2017, 15 marks) The theme also branches into specific, contemporary issues that reflect a

Student Notes:

the Indian society? Give arguments to justify your option. (2016, 12.5 marks)

11. Comment on the challenges for inclusive growth which include careless and useless manpower in the Indian context. Suggest measures to be taken for facing these challenges. (2016, 12.5 marks)
12. The nature of economic growth in India in recent times is often described as jobless growth. Do you agree with this view? Give arguments in favour of your answer. (2015, 10 marks)
13. "While we flaunt India's demographic dividend, we ignore the dropping rates of employability." What are we missing while doing so? Where will the jobs that India desperately needs come from? Explain. (2014, 12.5 marks)
14. Capitalism has guided the world economy to unprecedented prosperity. However, it often encourages short-sightedness and contributes to wide disparities between the rich and the poor. In this light, would it be correct to believe and adopt capitalism for bringing inclusive growth in India? Discuss. (2014, 12.5 marks)
15. With a consideration towards the strategy of inclusive growth, the new Companies Bill, 2013 has indirectly made CSR a mandatory obligation. Discuss the challenges expected in its implementation in right earnest. Also discuss other provisions in the Bill and their implications. (2013, 10 marks)

sophisticated understanding of socio-economic development.

Q. Distinguish between **'care economy'** and **'monetized economy'**. How can the care economy be brought into monetized economy through women empowerment? (2023, 15 Marks)

How to Answer Questions in this Theme:

- Your approach must be **human-centric**, focusing on how economic policies impact people's lives.
- When tackling **inclusive growth**, first define the concept clearly. Then, evaluate India's performance by presenting a **balanced view**—discuss successes (e.g., significant poverty reduction) alongside failures (e.g., rising inequality).
- For **unemployment**, go beyond the headline numbers. **Diagnose the structural causes** (e.g., low manufacturing job growth, skill gaps) and offer **multi-pronged solutions** that are practical and targeted at these root causes.
- For conceptual questions like the 'care economy', first provide a crisp definition and then build your answer by explaining its relevance and policy implications for a country like India.

8.1. Inclusive Growth

India's celebrated status as the **world's fourth-largest economy with a $3.9 trillion GDP** masks a harsh reality of extreme inequality and widespread deprivation.

- While the **top 1% controls over 40% of national wealth,** the average Indian survives on less than Rs 5,600 per month when elite wealth is excluded.
- India ranks dismally on human development indicators—**134th on HDI and 111th on Global Hunger Index**—revealing that GDP numbers do not translate to genuine prosperity for ordinary citizens.
- Moving forward, India needs dedicated efforts to ensure that its economic achievements create meaningful opportunities and **inclusive growth.**

8.1.1. What is Inclusive Growth?

According to the **OECD**, **inclusive growth** is economic growth that "creates opportunity for all segments of the population and distributes the dividends of increased prosperity fairly across society."

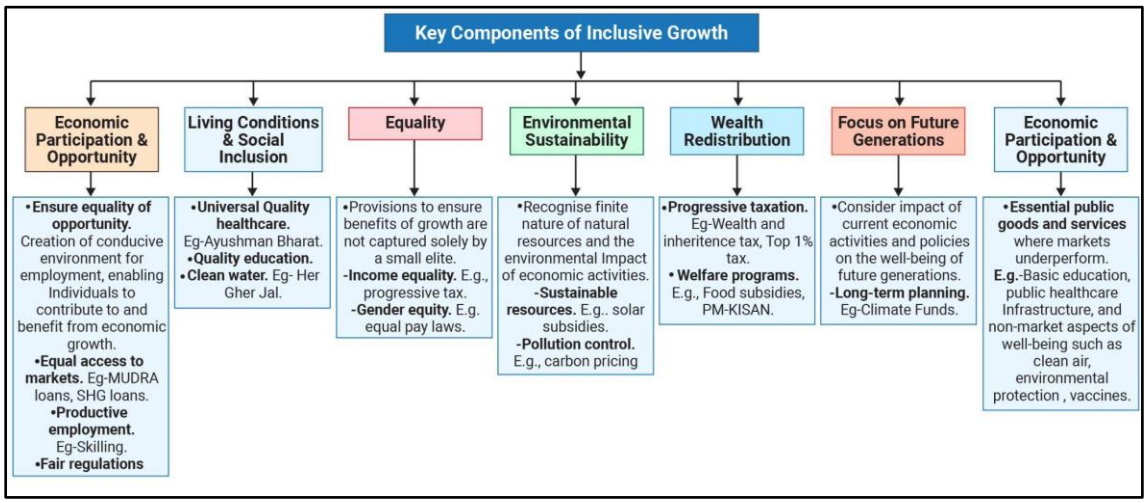
- It emphasizes **rapid**, **broad-based economic advancement**, moving beyond just **GDP growth** to focus on the **pattern** and **distribution** of growth.

Student Notes:

- Inclusive growth embodies the principle that **wealth creation**, **economic freedom**, and **equal opportunity** can coexist, promoting **long-term economic growth** and **well-being**.

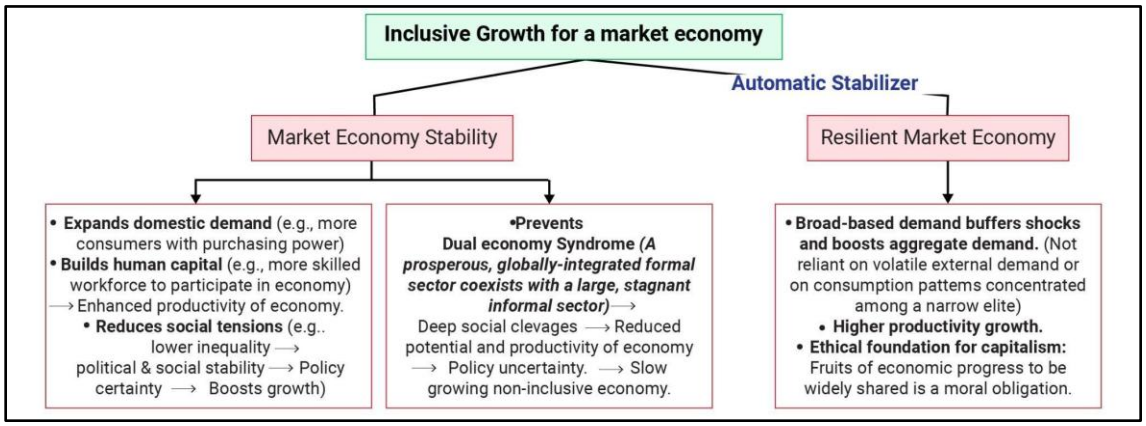
Key components

Inclusive growth is a multifaceted objective, comprising several interconnected components that collectively contribute to **broad-based societal advancement.** Few important ones are:



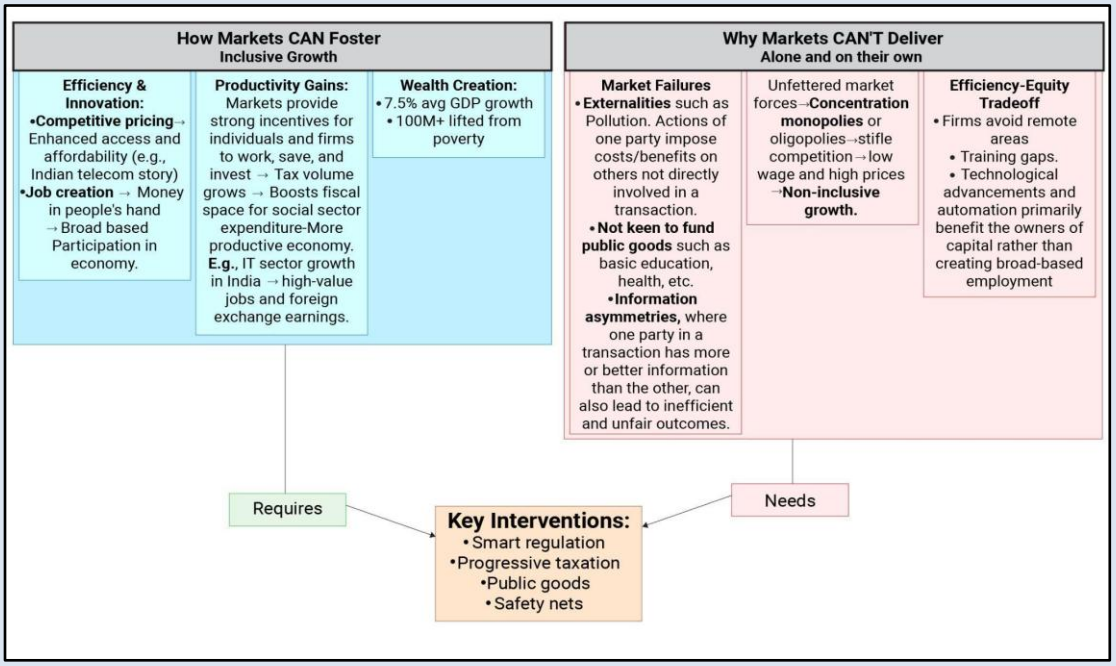
8.1.2. Inclusive Growth and Market Economy

Inclusive growth is vital for sustainable functioning of market economies. It necessitates not only sound economic policies but also robust governance and strong, impartial institutions.



Can Market Economies Inherently Achieve Inclusive Growth?

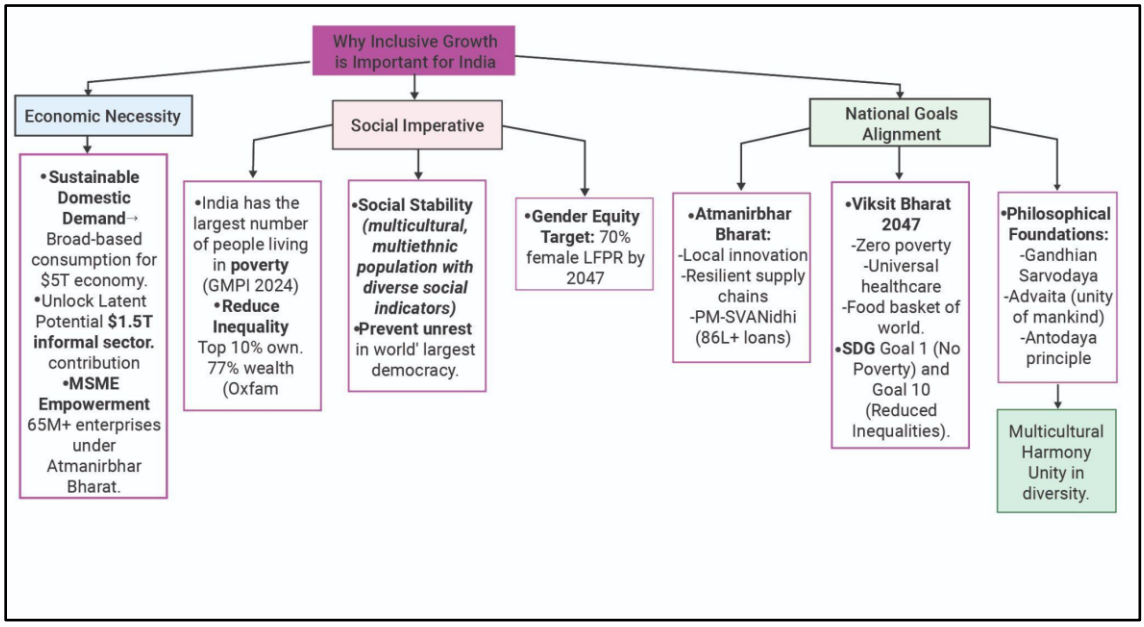
Market economies are generally recognized for their **capacity to generate inclusive economic growth**. At the same time, **substantial evidences** exist suggesting that markets, **on their own, often fail** to ensure inclusive growth.



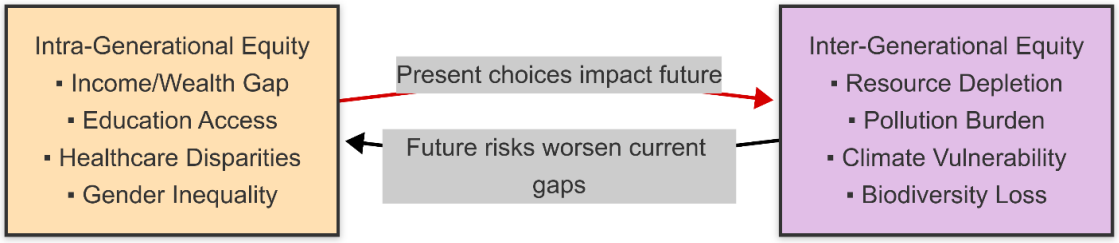
Thus, inclusive growth is possible within a market economy, but it is **not an automatic or inherent outcome.** Achieving inclusive growth typically requires a proactive and well-designed facilitating **role for the government**. This involves addressing market failures through appropriate regulation, ensuring genuine equality of opportunity by investing in human capital (education, health, skills), providing robust social safety nets, and promoting fair competition.

8.1.3. Why Inclusive growth is important for India

Inclusive growth is vital for India due to India's high **intra-generational inequities** in income, wealth, education, healthcare, and gender disparities that hinder human capital and economic mobility, risking social unrest.



Inclusive growth not only reduces existing disparities but also **fosters inter-generational equity**, encouraging sustainable choices for future generations.

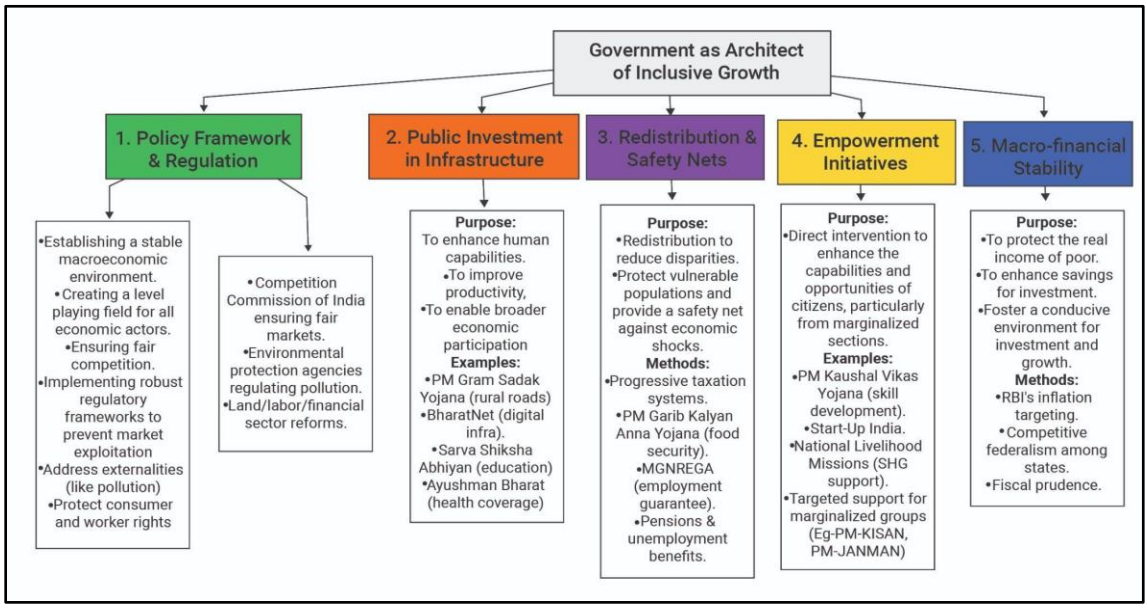


8.1.4. Stakeholders & their roles in Fostering Inclusive Growth

Achieving inclusive growth is a complex endeavor that requires concerted and coordinated efforts from a multitude of stakeholders, each playing a distinct yet complementary role.

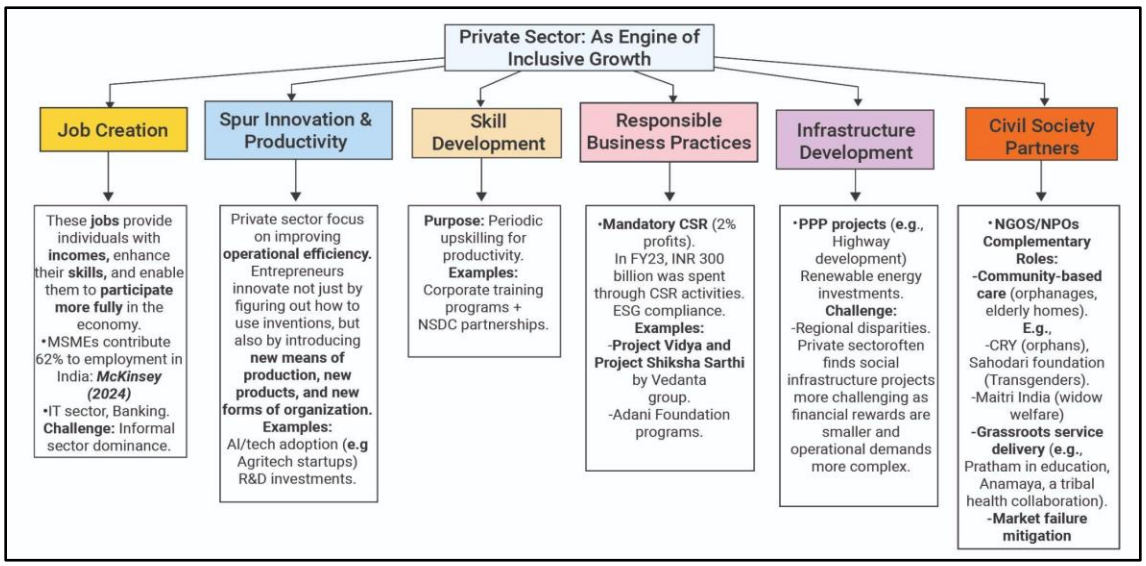
A. Role of the Government

The government acts as the primary architect for the inclusive growth.



B. Role of the Private Sector

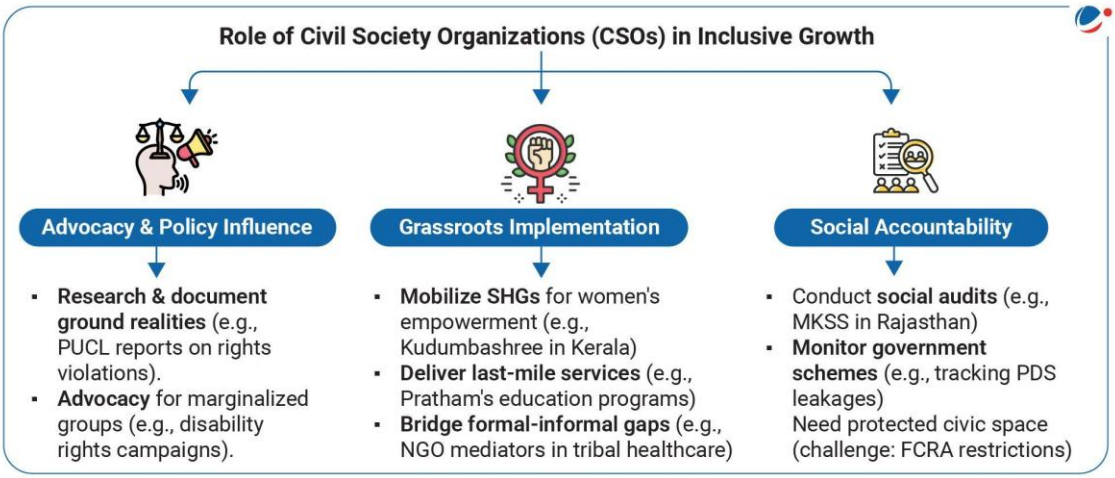
The private sector is the primary engine of economic growth and job creation in most market economies, and its active participation is indispensable for achieving inclusive growth. Its key contributions include:



Student Notes:

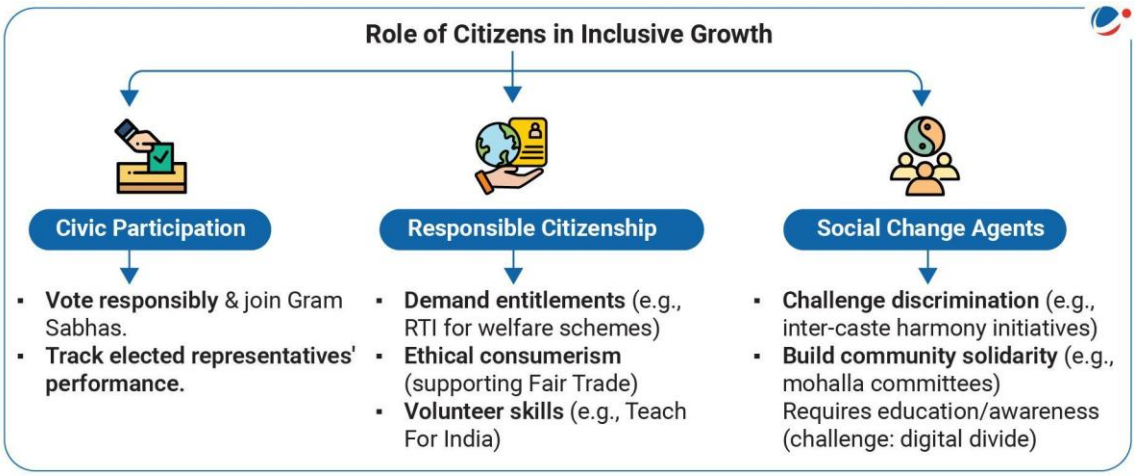
C. Role of Civil Society Organizations (CSOs)

CSOs including non-governmental organizations (NGOs), community-based organizations, advocacy groups, and think tanks, play important role in promoting inclusive growth.



D. Role of Citizens

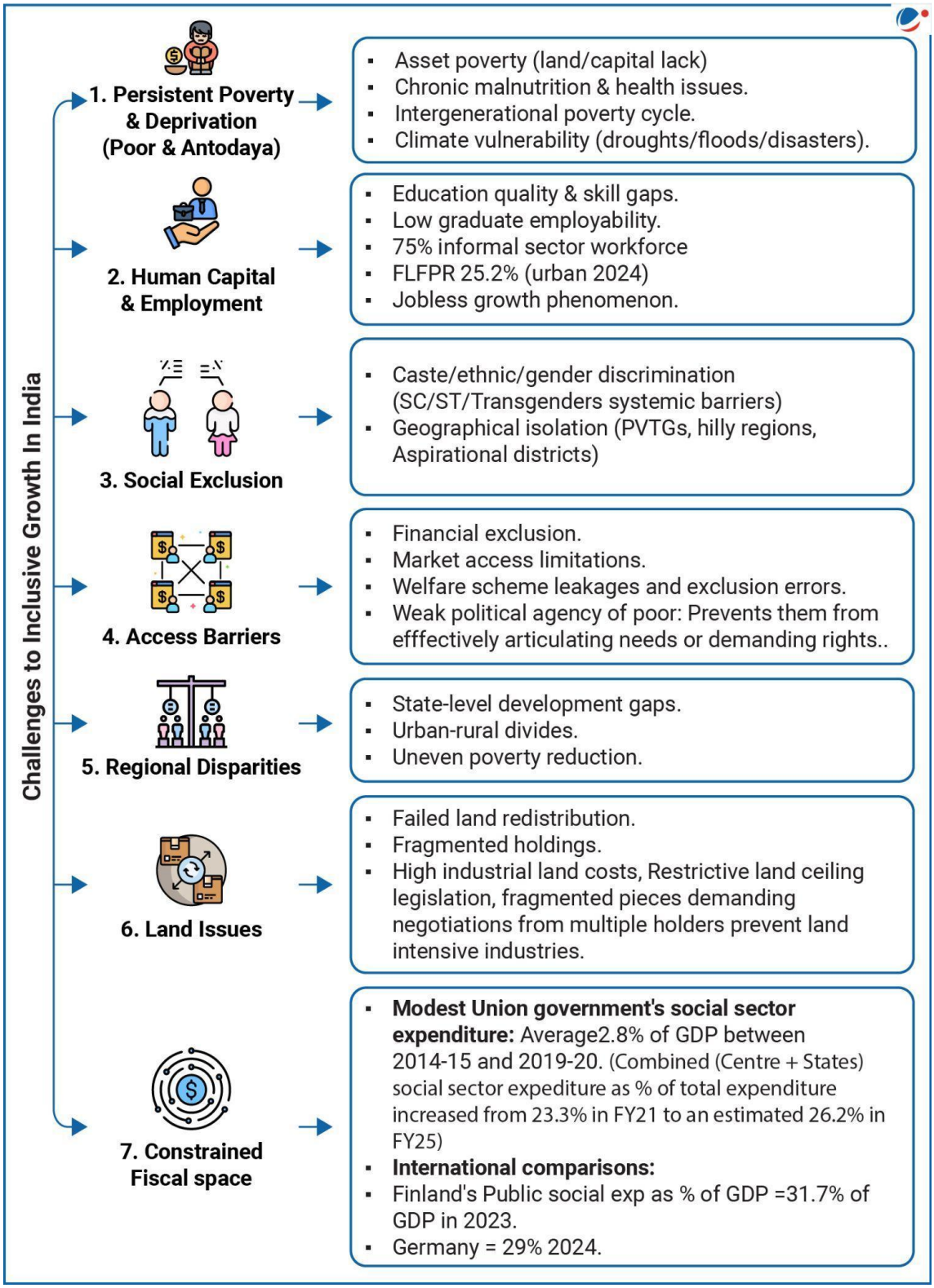
Individual citizens are not merely passive recipients of inclusive growth but active agents in its realization. Their roles include:



Student Notes:

8.1.5. Key Challenges to Inclusive growth in India

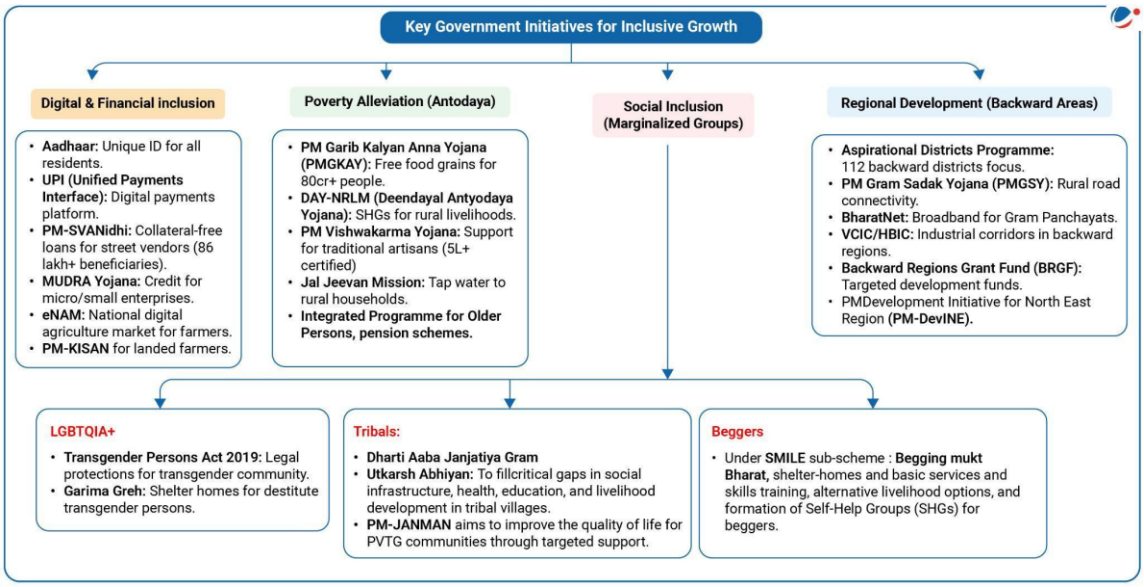
While India has certainly been experiencing *elements* of inclusive growth, particularly evident in the significant reduction of absolute poverty and improved access to certain basic services, the growth process has not been *comprehensively or consistently* inclusive.



Student Notes:

8.1.6. Government initiatives to promote Inclusive Growth

A significant proportion of governmental programs are directed towards promoting inclusive growth. Particular schemes tailored for this purpose are:



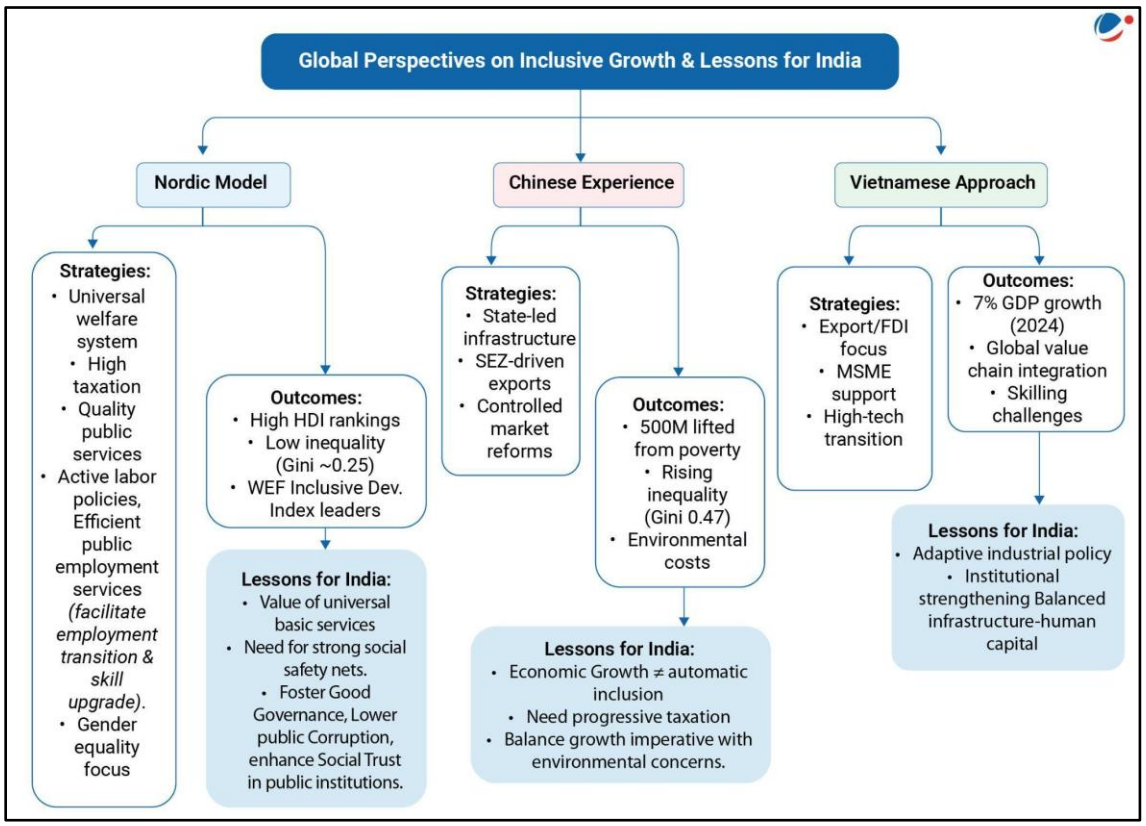
Social Sector Expenditure Trend

- **Quantum of expenditure**: There has been a discernible rising trend in the government's expenditure on social services as a percentage of its total expenditure. This share increased from **23.3%** in **FY21** to an estimated **26.2%** in **FY 2024-25** (Economic Survey 2024-25). The combined social services expenditure by **Centre** and **States** grew at a **15% CAGR** between **FY21** and **FY25 (BE)**.
- **Pattern of expenditure**: There has been an increased focus on **Direct Benefit Transfers (DBT)** and schemes targeting specific deprivations, such as **food security** through **PMGKAY**.
- **Concerns**: Challenges persist regarding the overall **adequacy** of this spending when benchmarked against national needs and international standards. Ensuring the **quality** of outcomes, improving **efficiency** in spending, and addressing **inter-state disparities** are key for the **'Sabka Vikas'** imperative.

8.1.7. International efforts for Inclusive growth & lessons for India

Several nations have successfully **integrated marginalized communities into their economic growth story** through targeted policy interventions.

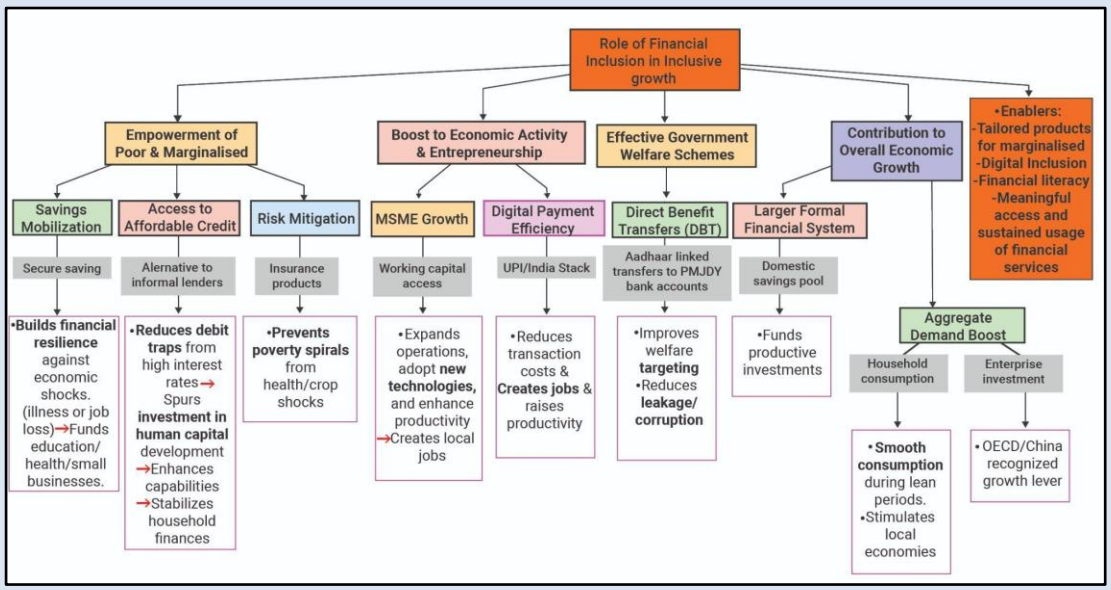
By examining global best practices—such as legislative frameworks, and specific empowerment initiatives—India can adapt few **evidence-based strategies t**o strengthen its own inclusive development paradigm.



8.1.8. Key Issues and Debates Regarding Inclusive Growth in India

1. Significance of Financial Inclusion for Inclusive Growth in India

Financial Inclusion refers to the process of **ensuring access to appropriate, affordable, and timely financial products and services for all s**egments of the population.



For true financial inclusion, efforts must also focus on financial education and the development of appropriate and accessible financial products for various segments of population.

Student Notes:

2. Universal Basic Income for Inclusive Growth

Universal Basic Income is a **periodic cash payment unconditionally delivered to all** irrespective of their contribution to the economy. It **characterizes** the basic income in five divisions:

- **Periodic** (being paid at regular intervals, not lump sum)
- **Cash payment** (not in kind or vouchers, leaving it on the recipient to spend it as they like).
- **Individual** (not to households or families),
- **Universal** (for all), and
- **Unconditional** (irrespective of income or prospects of job)

Favor	Against
Poverty and vulnerability reduction Poverty and vulnerability will be reduced.	**Conspicuous spending** Households, especially male members, may spend this additional income on wasteful activities.
Choice **A UBI treats beneficiaries as agents** and entrusts citizens with the responsibility of using welfare spending as they see best; this may not be the case with in-kind transfers.	**Moral hazard (reduction in labour supply)** A minimum guaranteed income might make people lazy and opt out of the labour market.
Better targeting of poor As all individuals are targeted, **exclusion error** (poor being left out) is zero though inclusion error (rich gaining access to the scheme) is 60 percent.	**Gender disparity induced by cash** Within a household men are likely to exercise control over spending of the UBI. This may not always be the case with other in-kind transfers.
Insurance against shocks This income floor will provide a safety net against health, income and other shocks.	**Implementation** Given the current status of financial access among the poor, a UBI may put too much stress on the banking system.
Improvement in financial inclusion Payment transfers will encourage greater usage of bank accounts.	**Fiscal cost given political economy of exit** Once introduced, it may become difficult for the government to wind up a UBI in case of failure.
Psychological benefits A guaranteed income will reduce the pressures of finding a basic living on a daily basis	**Political economy of universality ideas for self-exclusion** Opposition may arise from the provision of the transfer to rich individuals as it might seem to trump the idea of equity and state welfare for the poor.
Administrative efficiency A UBI in place of a plethora of separate government schemes will reduce the administrative burden on the state.	**Exposure to market risks (cash vs. food)** Unlike food subsidies that are not subject to fluctuating market prices, a cash transfer's **purchasing power may severely be curtailed** by market fluctuations.

The implementation of Universal Basic Income (UBI) in India remains a contested issue within policy discourse, with divergent perspectives on its efficacy in advancing inclusive growth.

Universal Basic Income vs Targeted Transfer Scheme

Targeted Schemes:

Evidence from **Indonesia** and **Peru** shows that **targeted schemes** often deliver more substantial welfare improvements than **universal programs**. These schemes can transfer more resources to the poor but suffer from **exclusion errors**, excluding some of the poorest households.

Improving Targeting Methods:

- **Community-Based Targeting**: Involves a **participatory process** where communities decide who is most in need. This leads to better **transparency** and **inclusion**. Strengthening **local bodies** and using **social auditing tools** can institutionalize it.
- **Use of Technology**: **Cash transfers** through the **JAM trinity** (Jan Dhan, Aadhar, Mobile) can improve **targeting**, increase **operational efficiency**, and reduce costs, freeing up resources for **capital spending**.

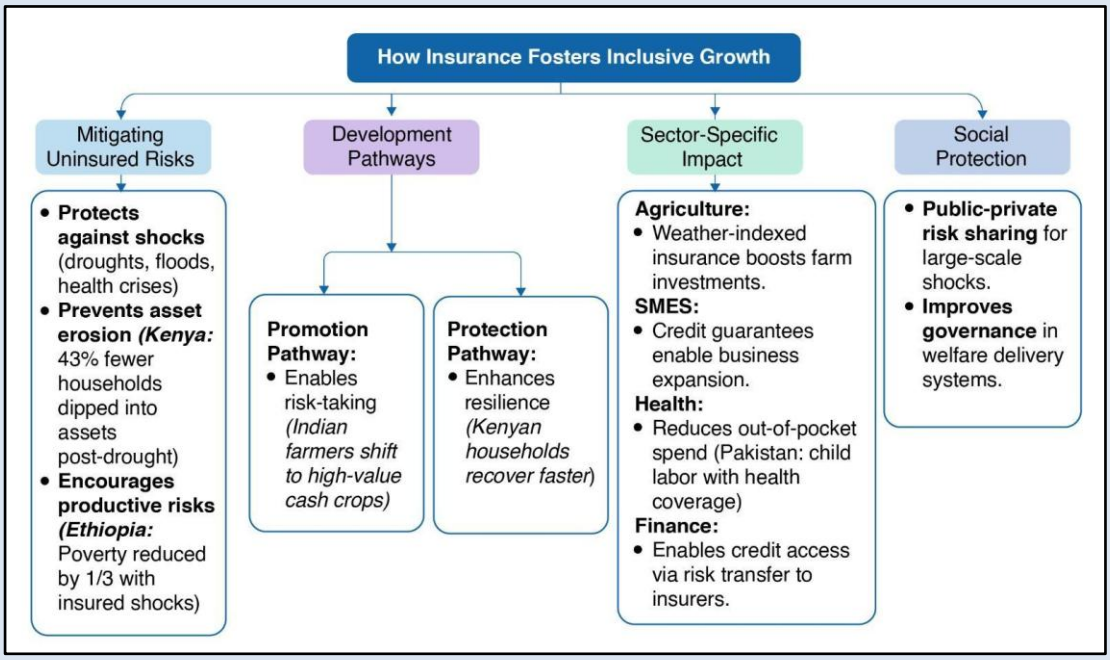
Regardless of moving towards a **Universal Basic Income (UBI)** or continuing with **targeted programs**, **improving targeting** can enhance the impact of **welfare programs**.

3. Insurance-Based Welfare Model for Inclusive Growth

In developing countries, **risk** disproportionately affects the **poor** and **vulnerable**. The **insurance model of welfare** uses government-backed social protection schemes (e.g., **Ayushman Bharat**, **PMGKAY**) to provide **financial stability**, **healthcare**, and **food security**.

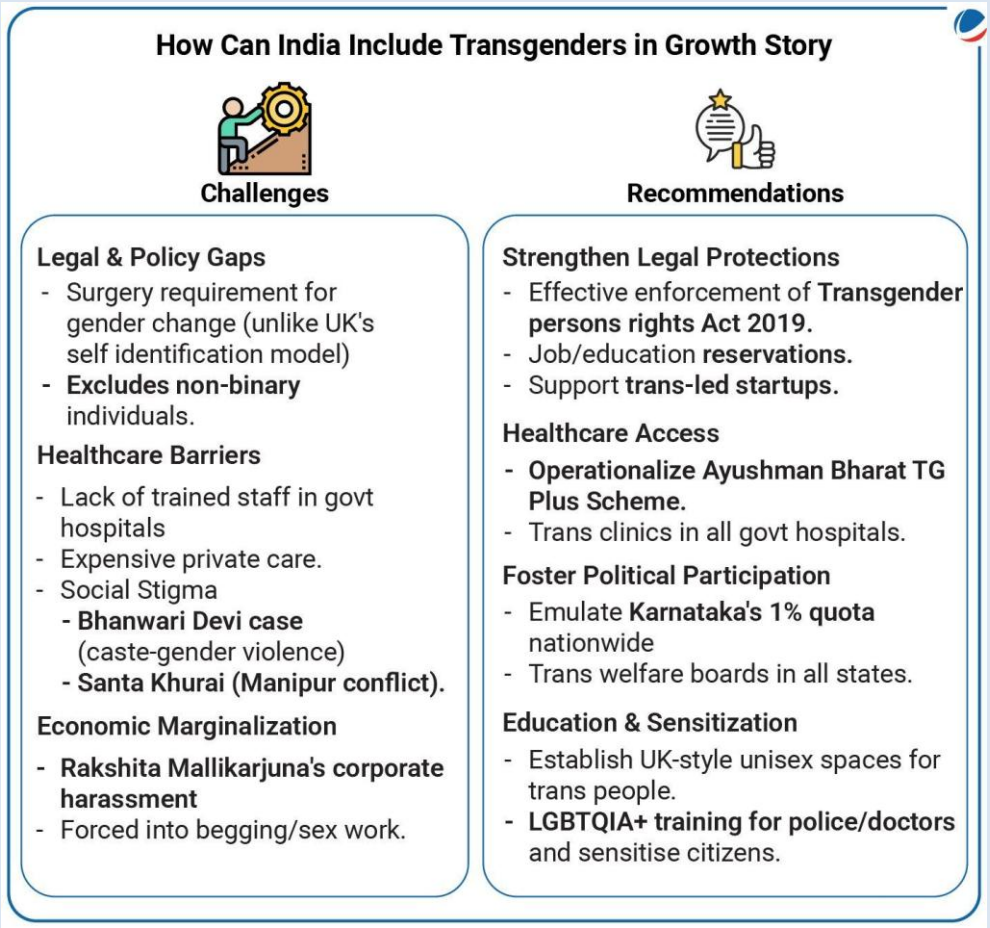
Student Notes:

It empowers households to mitigate risks, seize opportunities, and secure livelihoods, while promoting **data-driven policymaking** through initiatives like the **eShram portal**.



4. Transgenders & Inclusive Growth: Issues and suggestions

The **2011 Census** in India recorded around **4.87 lakh individuals** who identified as transgender ('other'). This number is estimated to be a significant undercount. TGs face unique challenges in India:



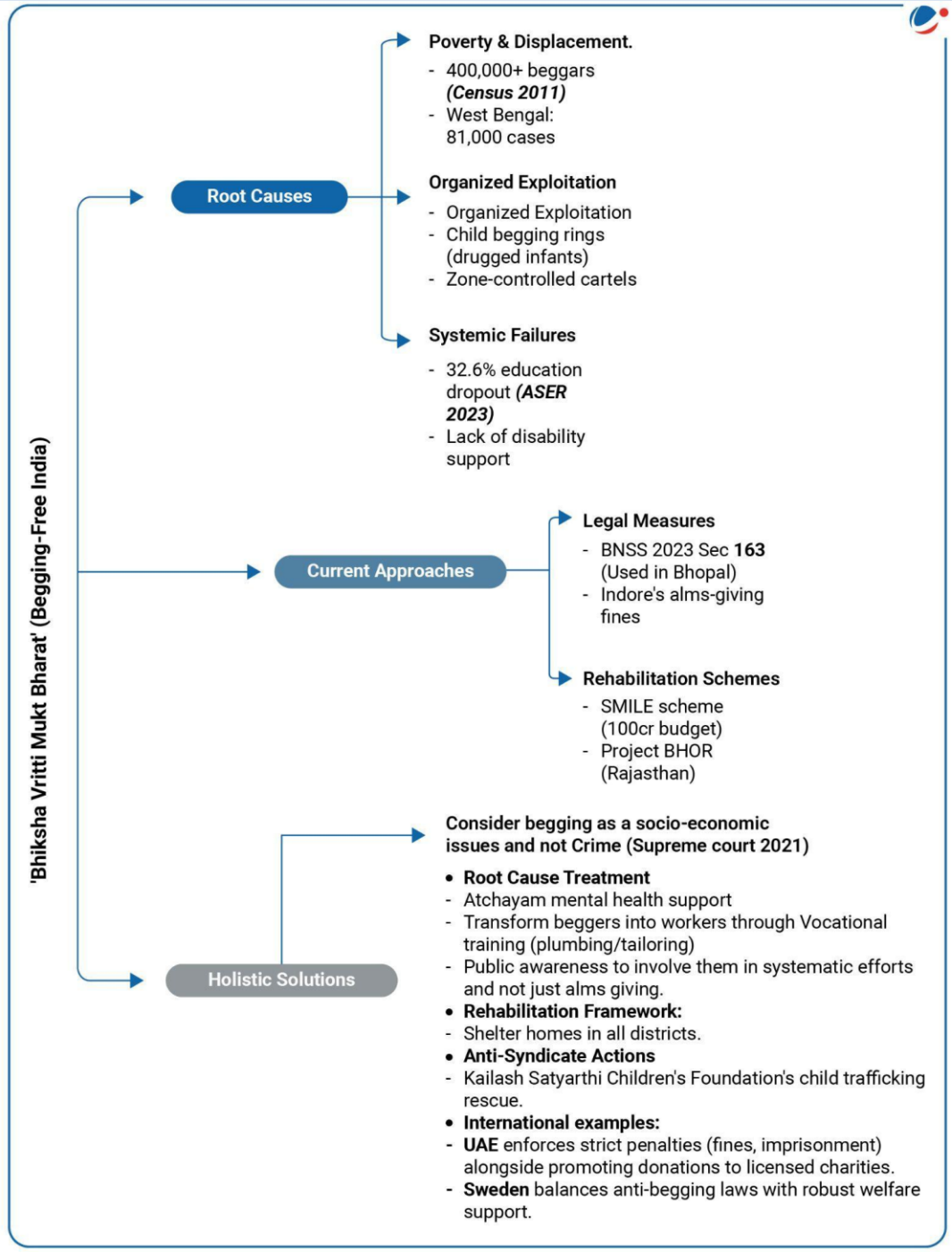
Student Notes:

5. 'Begging free India' for Inclusive growth

Criminalising beggars in India: A colonial legacy

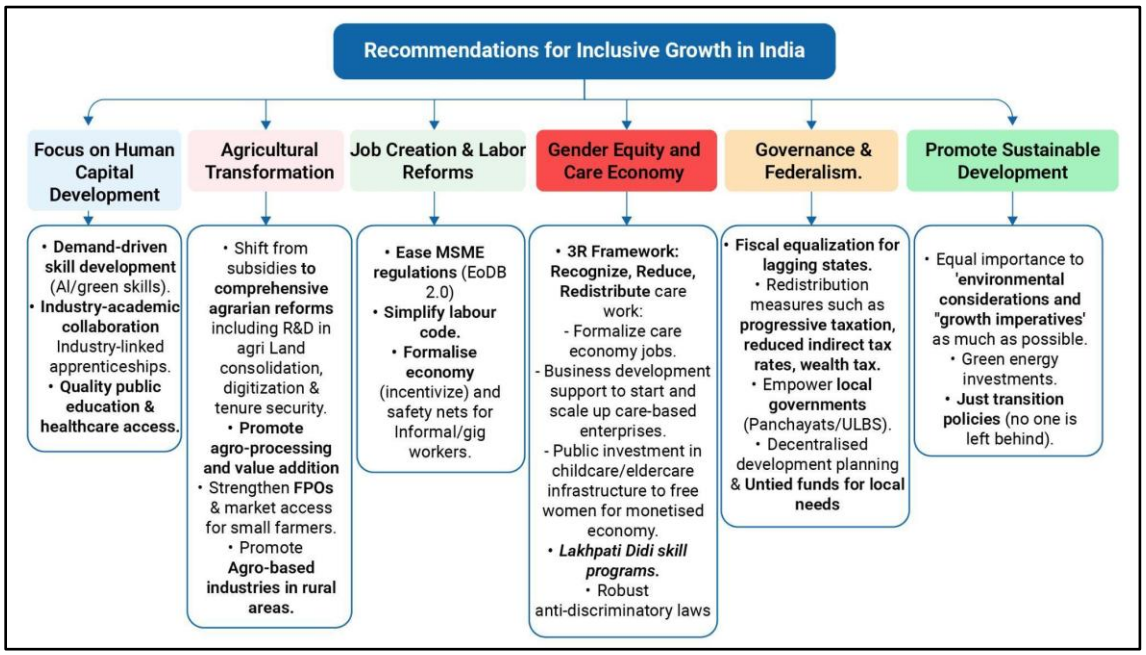
The SMILE scheme not only presents an opportunity to address urban poverty constructively but also to rethink the legal and juridical construction of 'beggars' and 'vagrants'. Otherwise, its reliance on outdated definitions and punitive frameworks raises concerns about its efficacy and fairness

- Beggary in India, while a visible manifestation of poverty, also conceals complex issues, challenging the nation's vision of inclusive development.
- The concept of 'Antodaya,' the "upliftment of the last person," and Advaita philosophy, forms the ethical imperative for India to create a **beggar-free society and rehabilitate its most marginalized**.



Student Notes:

8.1.9. Recommendations to foster inclusive growth



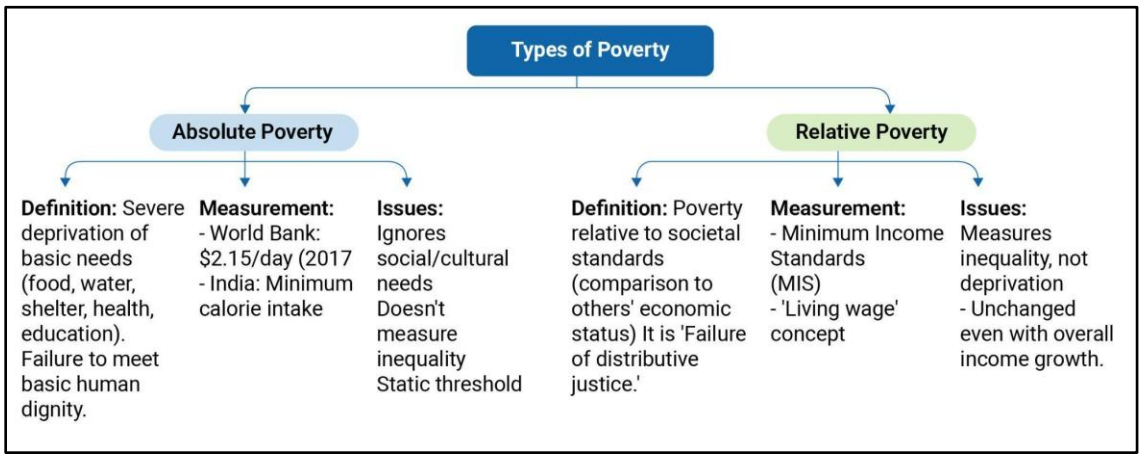
8.2. Poverty

"*Poverty is the worst form of violence*"—Mahatma Gandhi.

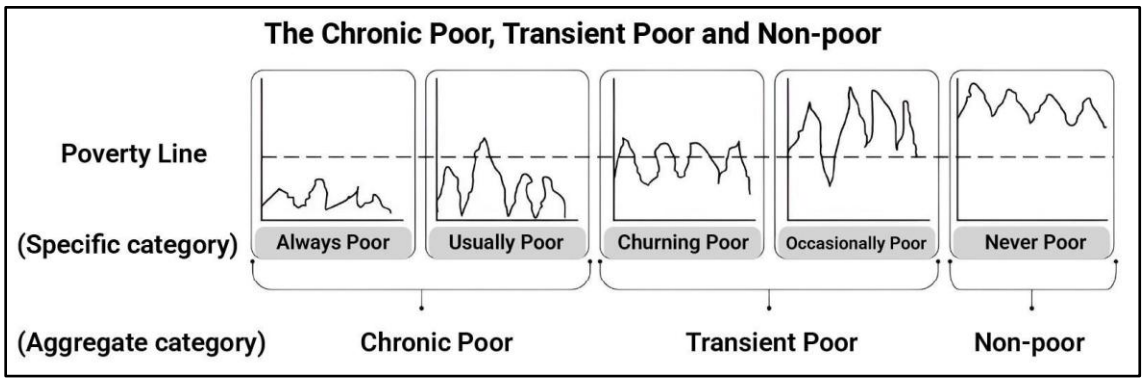
Poverty is when a person or a family **cannot afford the basics for a decent life**. According to the **Human Development Report (1997)**, poverty is not just about not having money but it is about **not having choices and opportunities to live a decent life**. Eradication of poverty, therefore, is accepted now as **a basic human right** and a moral commitment, both at the national and the global levels.

8.2.1. Types of Poverty

Poverty is defined in either relative or absolute terms.

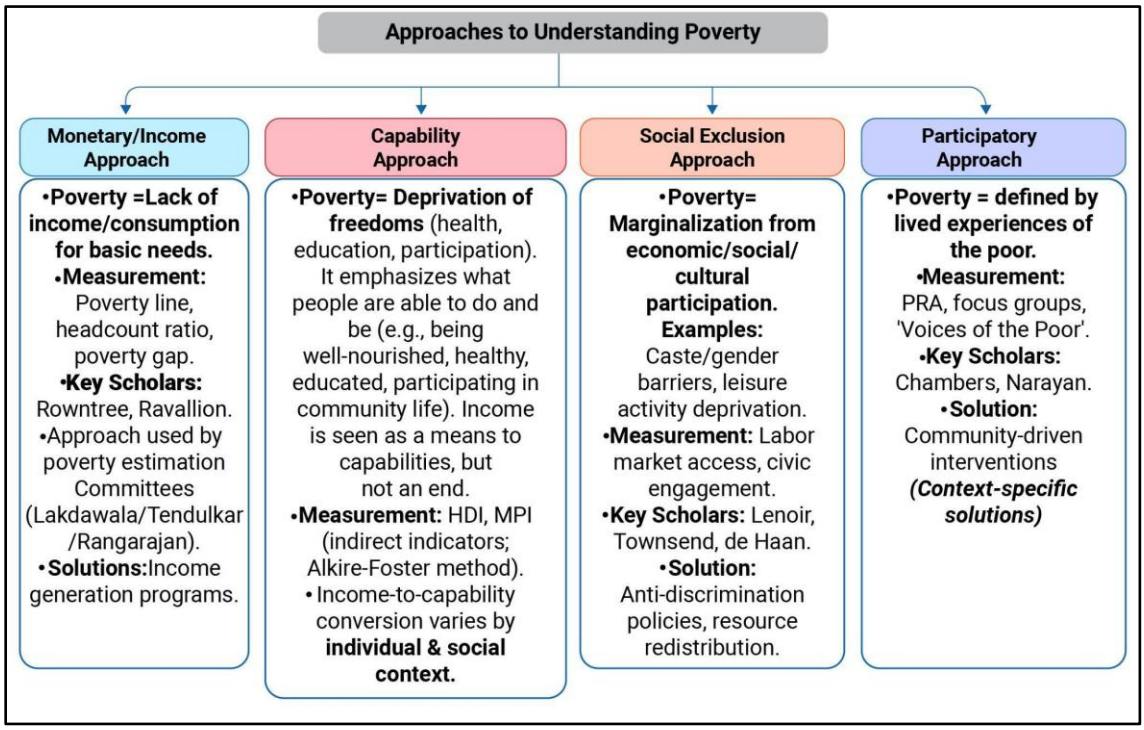


Alternatively, poor people are also categorized as:

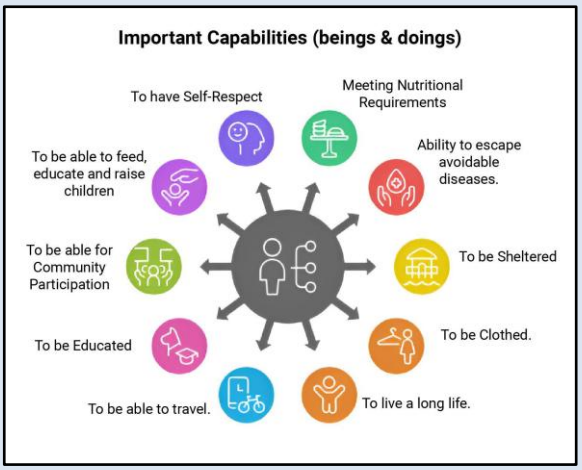


8.2.2. Approaches to understanding poverty

Several approaches have been developed to conceptualize and measure poverty, each with its own emphasis.



Amartya Sen's Capability Approach



- According to Sen, being poor does not mean living below an imaginary poverty line, such as an income of two dollars a day or less.
- It means **having an income level that does not allow an individual to cover certain basic necessities**, taking into account the circumstances and social requirements of the environment.
- According to capability approach, multidimensional well-being should be understood in terms of **peoples' capabilities to achieve valuable functioning** (beings and doings), emphasizing their **freedom to choose and achieve well-being**.

Student Notes:

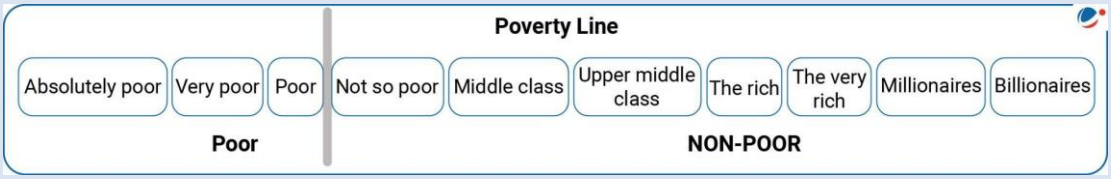
Student Notes:

8.2.3. Poverty Measurement in India

Measuring poverty is crucial for effective policymaking, targeted resource allocation, and tracking progress towards improving overall human well-being and development.

Poverty Line

The poverty line is a **monetary threshold that separates** the poor from the non-poor based on minimum consumption needs, such as calorie intake. In India, the poverty line is estimated using **Monthly Per Capita Expenditure (MPCE),** with Rs 816 per month for rural and Rs 1,000 for urban areas (2011-12).

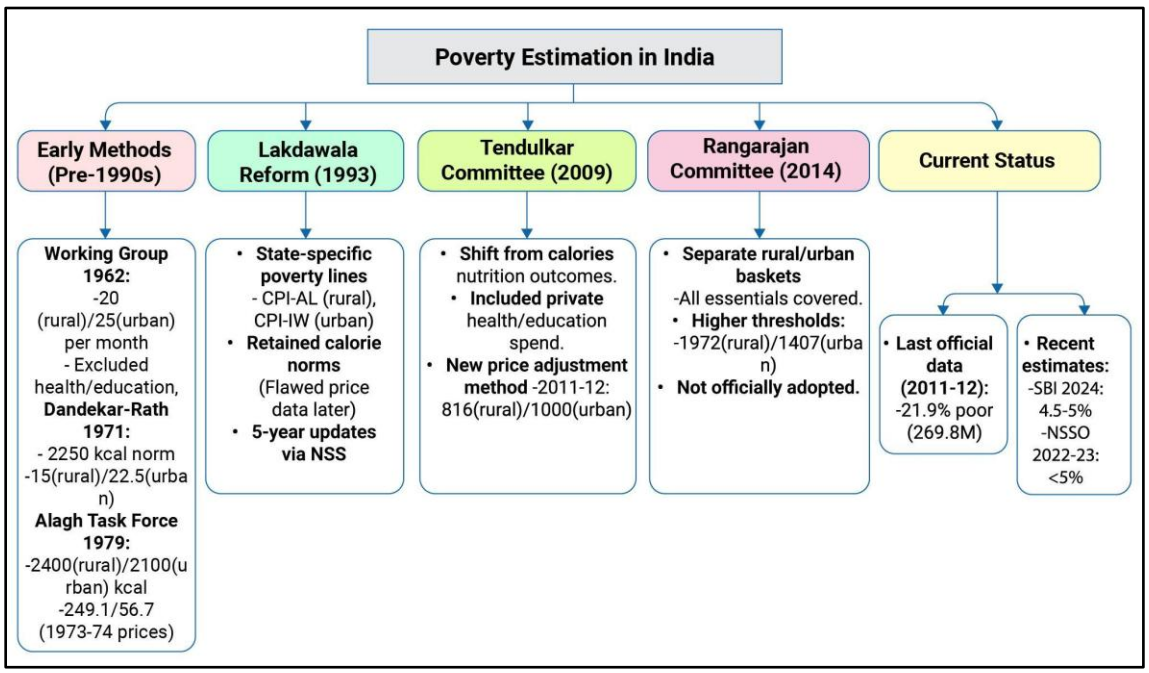


The **Head Count Ratio (HCR)** measures the **percentage of people living below the poverty line**, indicating the **prevalence** of poverty. For example, an HCR of 10% means 10% of the population is classified as poor.

However, measuring poverty using a fixed line and expenditure data has challenges, such as capturing the multidimensional nature of poverty and changes over time.

Poverty Estimation Committees

Various expert groups have estimated the number of people living in poverty in India. **These include:**



New methodology of poverty estimation in India

In 2021, the Government of India developed a **Multidimensional Poverty Index (MPI)** to measure poverty based on overlapping deprivations in 3 key dimensions i.e. **health, education, and standard of living.** Aligned with the global MPI by UNDP and OPHI, it includes **12 indicators—10 from the global model and 2 additional** national indicators: Maternal Health and Bank Accounts.

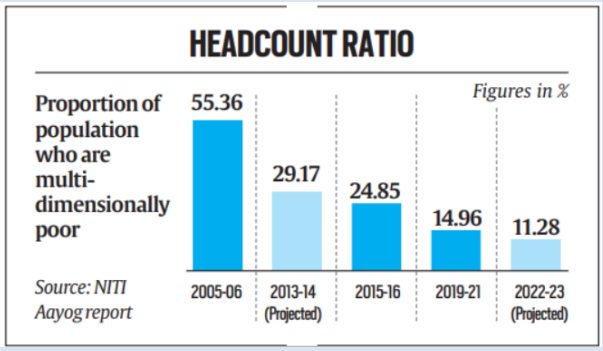
Student Notes:

This shift from traditional **consumption-based poverty estimation** (using National Sample Survey Office - NSSO data) to using the **Multidimensional Poverty Index (MPI)** was based on recognition that **consumption may not reflect actual income** due to borrowing or saving behaviour. Thus an index to measure **'overlapping deprivations'** was desired.

- MPI can be used to create a **comprehensive picture of people living in poverty, and permits comparisons both across countries and world regions,** and within countries by ethnic group, urban/rural area, subnational region, and age group, as well as other key household and community characteristics.
- The MPI uses data from **National Family Health Surveys (NFHS) rounds 2005–06, 2015–16, and 2019–21** to measure poverty.

Estimate of Poverty in India

- According to **World Bank's Poverty and Equity Brief (2025), in rural** India, extreme poverty fell from 18.4% in 2011-12 to **2.8 % in 2022-23.** In **Urban c**entres, extreme poverty reduced from 10.7% to **1.1%.** The gap between rural and urban poverty shrunk from 7.7 percentage points to **1.7 percentage points**.
- India's poverty rate at the **3.65 dollars per day line** fell from 61.8% in 2011-12 to 28.1% in 2022-23, lifting 378 million people out of poverty. **Rural poverty** declined to **32.5%,** while **urban** poverty dropped to **17.2%.**
- **According to a NITI Aayog discussion paper (2024), poverty incidence** declined sharply from 29.2% in 2013 to **11.3% in 2023,** implying roughly 248 million people were lifted out of poverty in this period.
- According to the **Global Multidimensional Poverty Index 2024,** India harbours the **highest number of poor** people in the world at **234 million**. According to the **2024 Global Hunger Index**, India has a score of 27.3, indicating a **serious level of hunger**. With a Human Development Index (**HDI) value of 0.685 in 2023**, India is placed in the **medium** human development category.

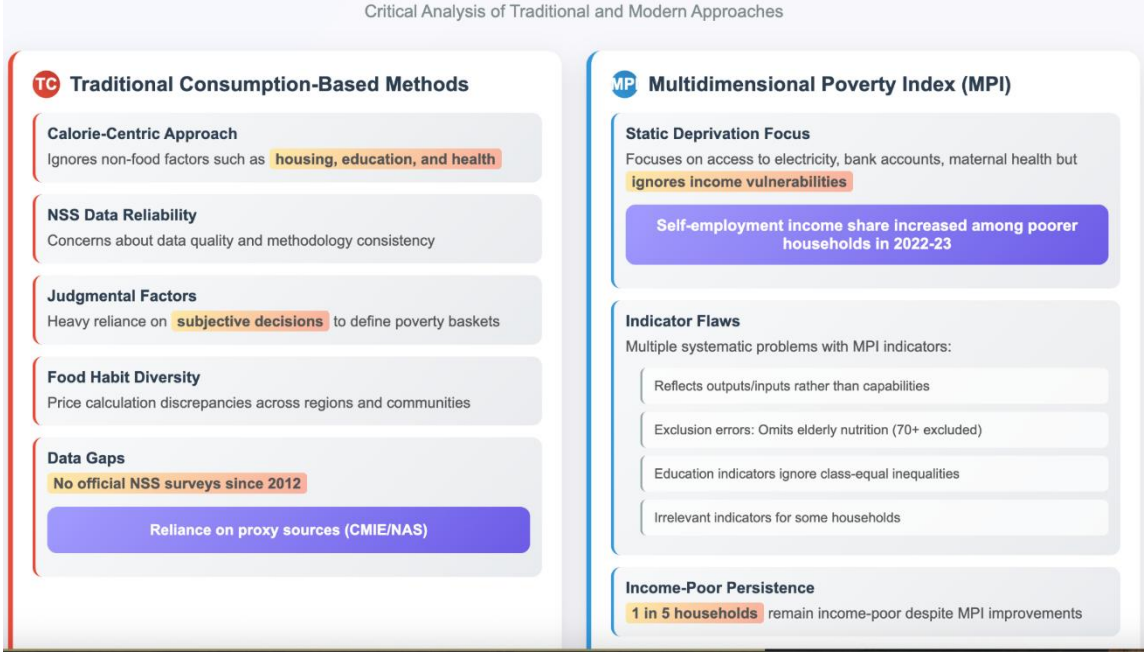


Challenges in measuring poverty

The difficulties in measuring poverty arise from its **diverse forms**, the **intangible dimensions**, resource-intensive survey methods, and the potential for governmental influence on defining and portraying poverty statistics.

- **Many Faces of Poverty*:*** Poverty comes in various forms – absolute, relative, extreme, acute, income, and multidimensional. However, the definition of these forms may differ across countries, making it **challenging to establish a universal measure**.
- **Invisible Dimensions**: Elements like uncertainty, vulnerability, and fear are integral aspects of poverty but prove elusive in measurements. The emotional toll on individuals, such as worrying about the next meal or affording necessities, remain **challenging to quantify** through traditional income-focused metrics.
- **Survey Struggles**: Measuring poverty often relies on household surveys, yet conducting these surveys demands substantial resources. While survey techniques have improved, resource constraints in some countries may compromise the quality of results.
- **Government's Influence**: Governments, aiming to showcase efforts in poverty reduction, may adjust national poverty lines. This manipulation of definition can alter poverty statistics without necessarily improving the conditions of those experiencing poverty.

Poverty estimates by various methods have faced criticisms on various grounds:



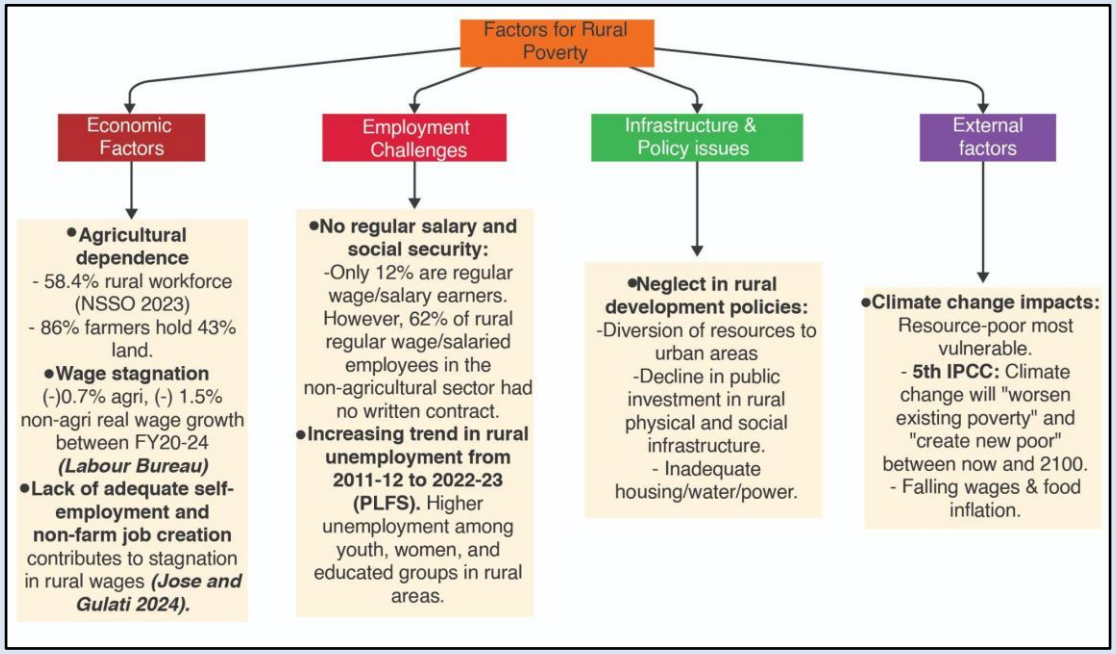
8.2.4. Poverty as a sticky problem in India

Poverty in India is a **deeply entrenched and multifaceted challenge, shaped by historical inequities, social structures, and economic policies.** Despite progress, it remains a persistent hurdle, stifling equitable growth and perpetuating cycles of deprivation across generations.

Few themes related to Poverty in India

- **Rural Poverty**

Rural poverty in India remains a critical challenge. In 2022-23, India's poverty rate was estimated at 28.1%, with **rural poverty at 32.5%.** This means that over one-third of the rural population was below the poverty line. This persistent deprivation is driven **by low agricultural productivity, inadequate infrastructure, and limited access to basic services.**



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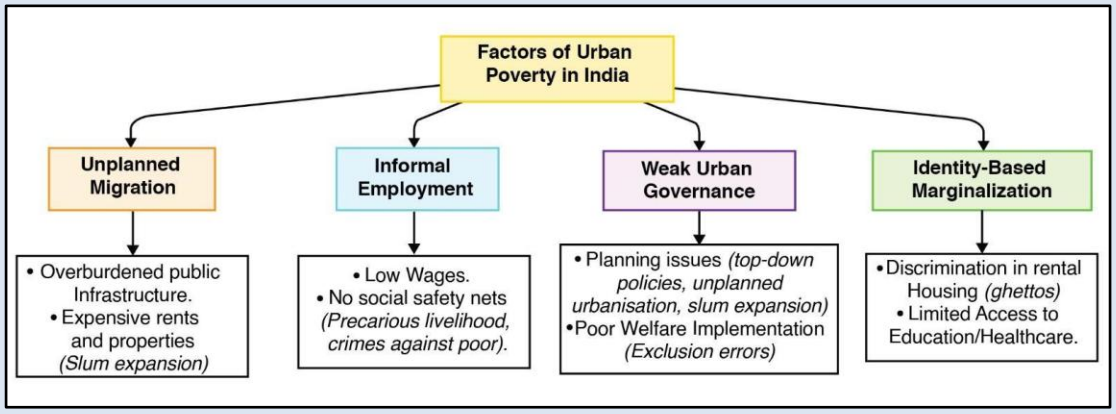
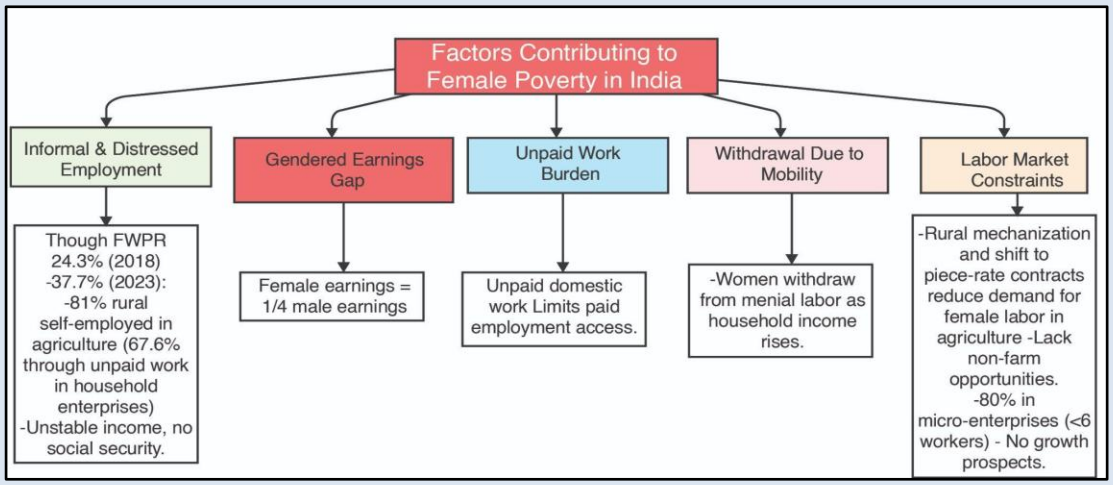
- **Urban Poverty**

Urban poverty is rising sharply, fueled by rapid migration and inadequate formal employment. In 2022-23, the urban poverty rate was **17.2%.**



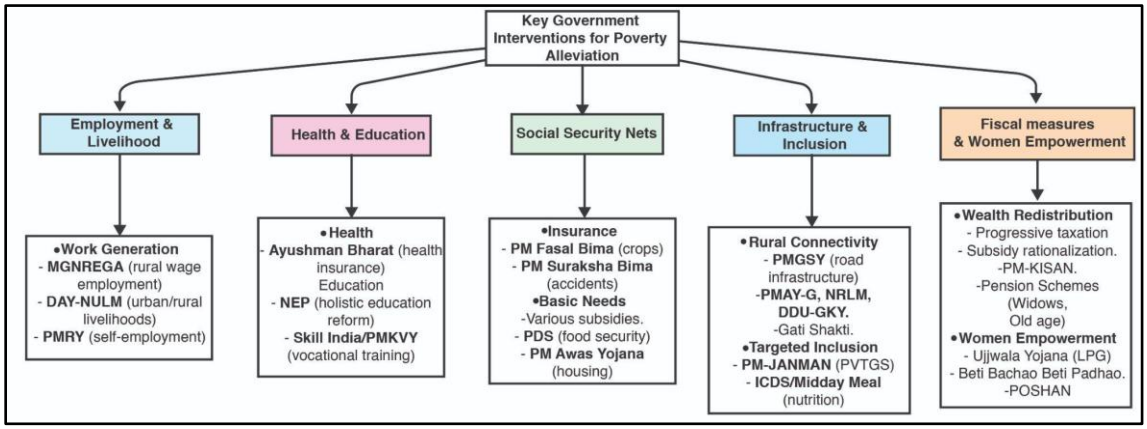
- **Female Poverty**

Women disproportionately suffer from poverty in India. Studies indicate that women constitute a substantial share of India's poor, **often exceeding 50%.** Gender-based disparities in education, employment, and asset ownership exacerbate their economic vulnerability.



8.2.5. Policies and Programmes Aimed at Poverty Alleviation

The Government's approach to poverty reduction includes:



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8.2.6. Poverty Alleviation Programmes- A Critical Assessment

Poverty in India is multidimensional, encompassing aspects such as **income poverty**, **social exclusion**, **malnutrition**, **lack of education**, and **poor access to basic amenities**. The government has implemented various schemes to alleviate poverty, which have shown positive results, but challenges persist.

Key Results from Poverty Alleviation Schemes:

- **Reduction in Multidimensional Poverty**: The proportion of people facing multidimensional poverty has dropped from **55.1% in 2005-06** to **16.4% in 2019-21**.
- **Stunting**: **Stunting** among children has decreased from **48% (2005-06)** to **35.5% (2019-20)**.
- **Increase in Per Capita NNI**: India's **per capita Net National Income (NNI)** has grown from **Rs. 72,805 (2014-15)** to **Rs. 98,374 (2022-23)**.
- **Rise in Pucca Houses**: In **urban India**, the proportion of **pucca houses** has increased from **92% (2008-09)** to **96% (2020-21)**; in **rural areas**, it has grown from **55% (2008-09)** to **77% (2020-21)** (NSS Round 78, 2020-21).

Persistent Challenges:

Despite these improvements, the following issues continue to hinder poverty eradication:

- **Hunger and Malnutrition**: High levels of **malnutrition** persist, especially among children and women.
- **Illiteracy**: A significant portion of the population remains **illiterate**, limiting access to opportunities.
- **Basic Amenities**: Lack of access to **clean drinking water**, **sanitation**, and **electricity** still affects a large section of the population, particularly in rural and remote areas.

Critical Points to Consider:

- **Asset Ownership**: There is a **lack of significant change** in **ownership of assets** (e.g., land, capital) which is crucial for **sustainable development**.
- **Production Process**: The **production process** remains largely unchanged, and small-scale producers and farmers continue to face challenges like **low wages**, **lack of credit**, and **market access**.
- **Basic Amenities**: Despite progress, access to basic amenities, especially in rural areas, is still **insufficient**, hindering the well-being of the poor.

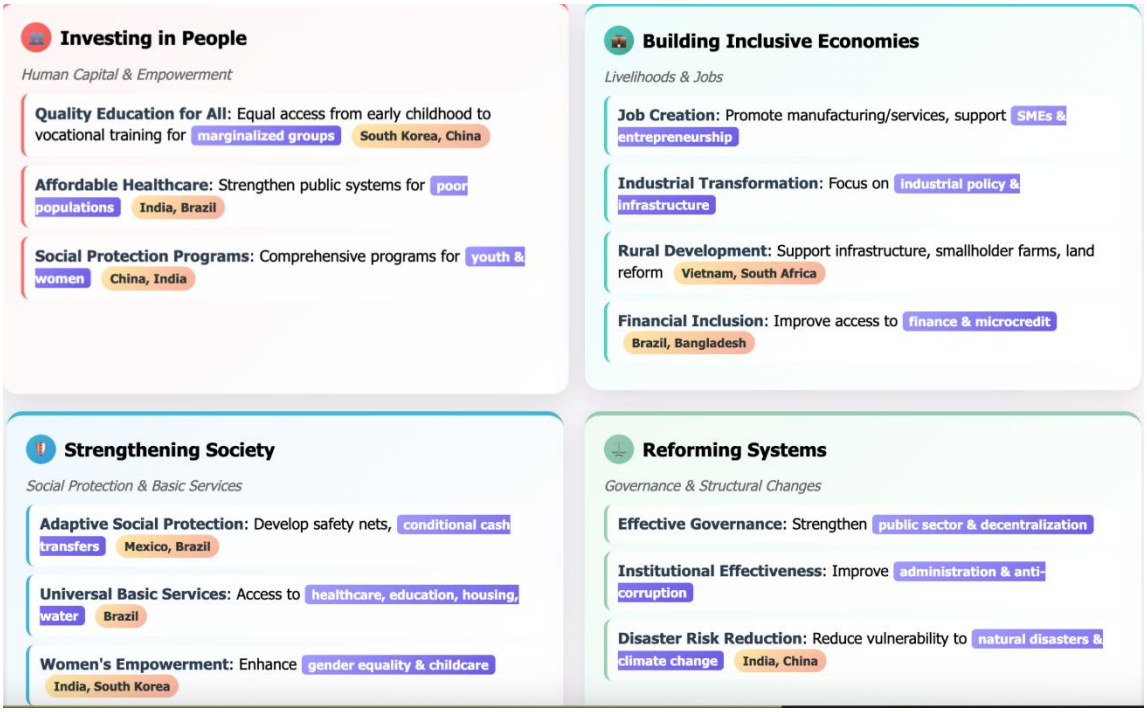
Suggestions for Improvement:

- **Land and Capital Reforms**: Addressing **land reforms** and providing **microcredit** could empower small farmers and producers.
- **Focus on Holistic Development**: Poverty alleviation must be viewed through a **multidimensional lens**, addressing issues of **education**, **nutrition**, **health**, and **housing**.
- **Inclusive Growth**: Economic policies should focus on **inclusive growth** by ensuring equitable distribution of resources, rather than merely focusing on economic growth indicators.

While **poverty alleviation programmes** in India have yielded positive results, substantial challenges remain. A more **holistic** and **inclusive approach**, addressing structural inequalities and focusing on **empowering marginalized communities**, is needed for long-term and sustainable poverty reduction.

8.2.7. Way Forward

The Government should reorient poverty alleviation efforts in the following directions:



8.3. Inequality

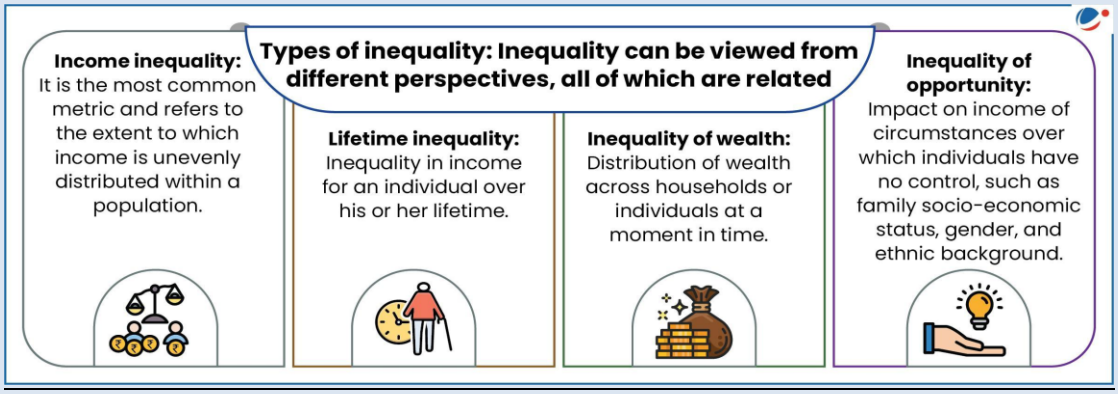
Inequality generally refers to the **disparity of wealth or income** between different groups or within a society.

> "You need some inequality to grow... but extreme inequality is not only useless but can be harmful to growth because it reduces mobility and can lead to political capture of our democratic institutions." – ***Thomas Piketty.***

8.3.1. Measuring Economic Inequality

Few ways to measure economic inequality are given below:

Few types of inequality:



- **Gini coefficient and Lorenz curve:**

The **Lorenz curve** and **Gini coefficient** are the most common tools to measure inequality. The Lorenz curve plots the cumulative share of income (or wealth) against the population, revealing distribution disparities. The **Gini coefficient**, derived from this curve, quantifies inequality on a 0 (perfect equality) to 1 (maximum inequality) scale.

However, the Gini coefficient has **limitations**:

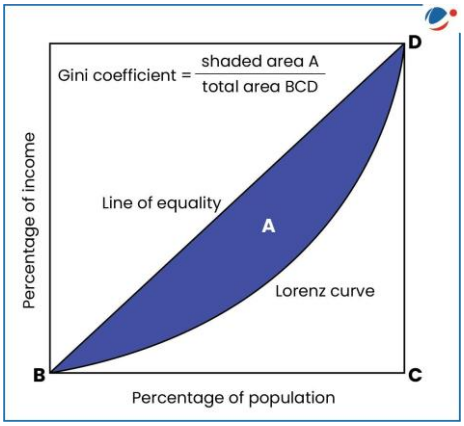
- It doesn't capture demographic differences (e.g., age, race).
- It may remain unchanged despite income shifts at extremes.
- Informal economies and tax havens are hindrances for availability of wealth data, especially in developing nations.

Student Notes:

Alternative Measures:

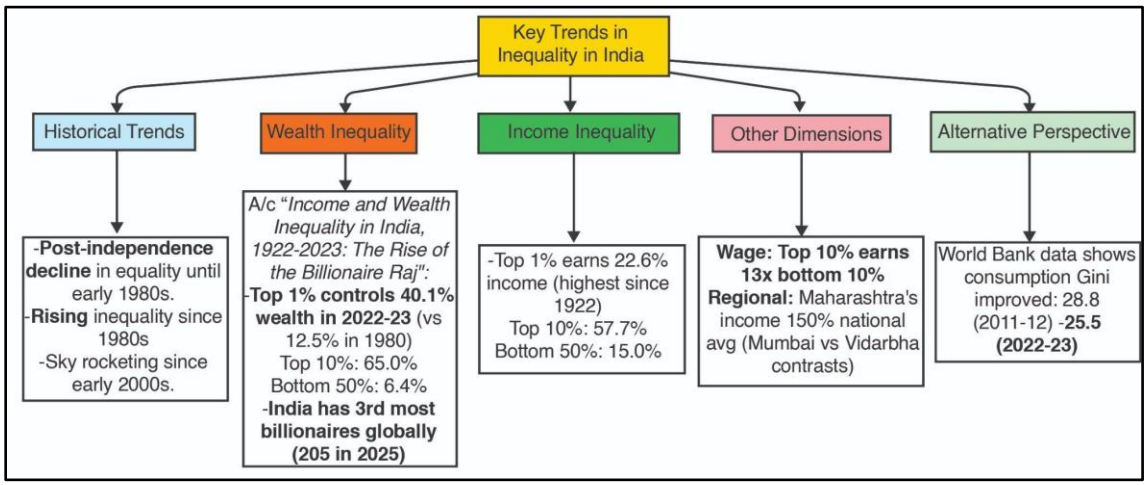
- **Palma Ratio**: Compares the top 10%'s income share to the bottom 40%'s, highlighting elite vs. poor disparity.
- **Theil Index**: Decomposes inequality between and within groups, useful for regional/sectoral analysis.
- **Wealth Inequality Indicators**: Track asset concentration (e.g., Piketty's wealth-income ratios).

While the Gini coefficient remains widely used, combining multiple metrics provides a clearer picture.

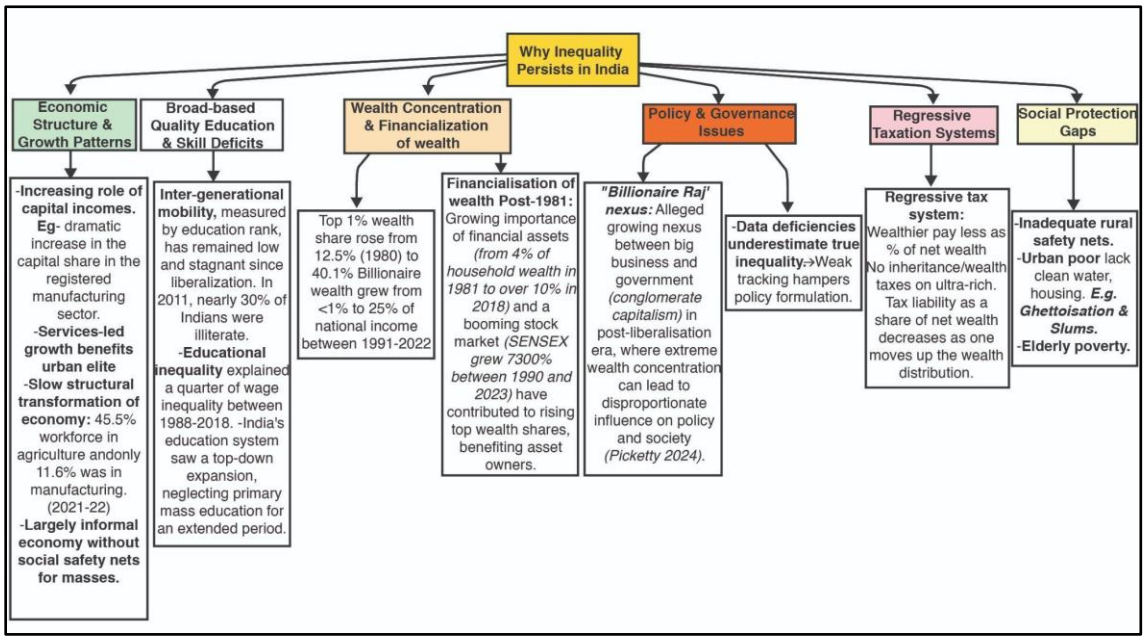


Estimate of Inequality in India

India today is a **more unequal society than it was under British rule**, as per a research paper by **Thomas Picketty & others (2024).** Below is an estimate of inequality in India:



8.3.2. Why inequality is persistent in India



Why Inequality is a problem and challenge

The relationship between inequality and economic growth is complex. While some traditional views, saw inequality as beneficial (and transient), modern research increasingly highlights its negative consequences.

Student Notes:

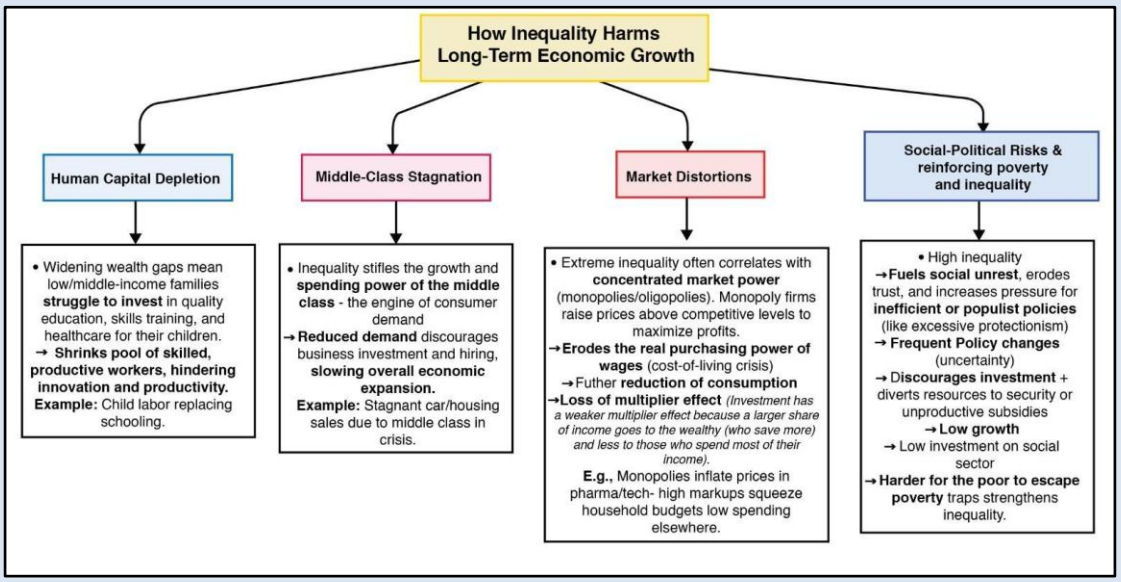
Does inequality ever benefits economic growth?

Economist Simon Kuznets (1955) proposed that **as an economy develops** from agriculture to industry, inequality initially increases (as industrialists profit), but then decreases at higher development levels (through education, redistribution, welfare states). Inequality was seen as a **temporary, necessary phase** to generate savings and investment from the wealthy, fueling industrialization. (**Kuznets's hypothesis**)

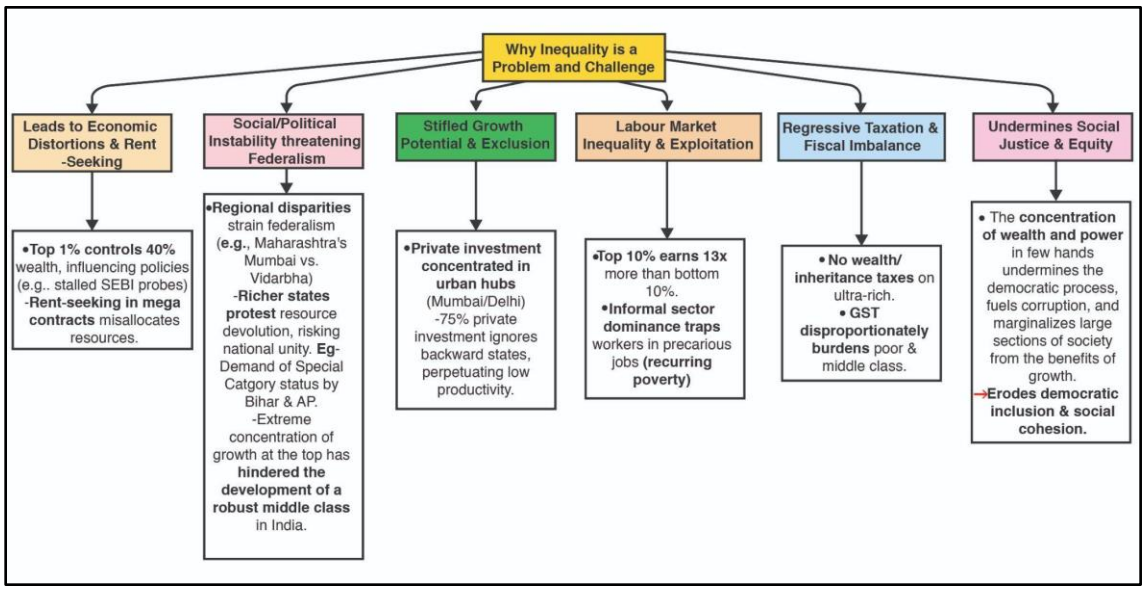
While descriptive of some historical paths (e.g., US/Europe early 20th century), this **hypothesis fails as a universal rule**.

- Many developing nations (e.g., Brazil, South Africa) experienced **high persistent inequality** without the promised later decline.
- Conversely, countries like South Korea and Taiwan achieved **rapid growth with relatively low inequality** due to land reform and education investment.

Also, large-scale reviews (e.g., by OECD, IMF) find **no consistent evidence that higher inequality reliably boosts growth**. Instead, the relationship often turns negative, especially beyond moderate levels.



Overall, inequality poses following challenges for economy and society.



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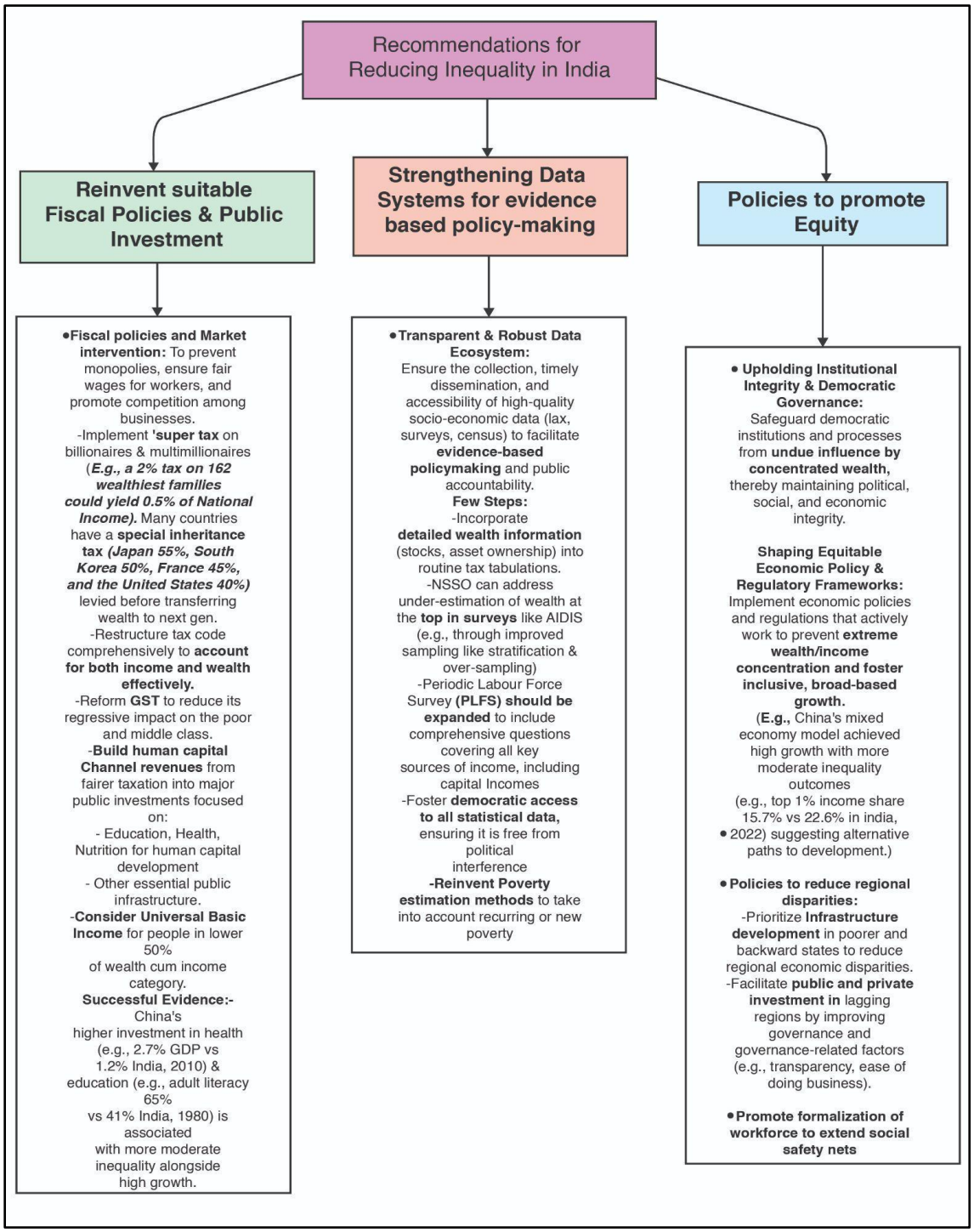
8.3.3. Way Forward

Governments unequivocally have a significant role to play in reducing inequality. It is said that the current crisis of inequality is the direct result of the **moral failure of governance and the market system,** which allows a few persons to accumulate extreme wealth while masses languish in poverty.

Thus, Oxfam calls for replacement of the present system with a new economic framework – a **more 'Human Economy',** which recognizes that justice and inclusion are not the result of economic prosperity, but rather the cause of economic prosperity. To tackle inequality, **policy measures in three areas** are critical:



The new economics is about moving from 'economies of scope and scale' to **'economy of purpose.'**

Student Notes:

8.4. Employment

Economic growth has the power to transform societies, boost incomes, and enable citizens to thrive, but growth alone is not enough. To reduce poverty and ensure shared prosperity, growth that creates **more, better, and inclusive jobs is needed**. As the crucial link between growth and prosperity, the **quantity and quality of employment** in an economy determines how economic growth sustainably percolates to the masses.

With **about 26% of its population aged 10-24**, India stands at the cusp of a unique demographic opportunity. To harness this, the economy must generate **78.5 lakh non-farm jobs annually until 2030** (**Economic Survey 2023-24**). Creating quality employment is thus a national priority, for inclusive and sustainable economic growth.

8.4.1. Measuring Employment Status

Employment is crucial for India to harness its **demographic dividend, reduce poverty, and drive inclusive economic growth.** To employ growing and surplus labour (Current labour force growth rate of **1.69% a year**), India needs an **employment growth rate of 4-5% per year**.

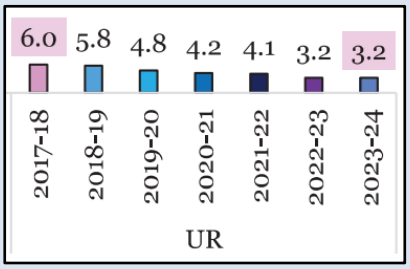
Key terms

Terms	Indicator	Reference Period
Labour Force Participation Rate (LFPR)	Percentage of the **working-age population engaged in work or making tangible efforts to seek 'work' or being available for 'work' if it is available (active job seekers + employed).**	Usual Status (last 365 days) / Current Weekly Status (last 7 days)
Worker Population Ratio (WPR)	Percentage of **employed persons** in total population (**employed**).	Usual Status (last 365 days) / Current Weekly Status (last 7 days)
Unemployment Rate (UR)	Percentage of unemployed persons among those in the labour force.	Usual Status (last 365 days) / Current Weekly Status (last 7 days)
Usual Status (ps+ss)	Activity status determined by a person's primary (principal) and any additional (subsidiary) economic activity over the last 365 days.	Last 365 days preceding survey
Current Weekly Status (CWS)	Activity status determined by a person's activities over the last 7 days.	Last 7 days preceding survey
Under-employment	It is **underutilization of employed persons' productive capacity**. It occurs when individuals are **willing and available to engage in an alternative** employment situation. **PhD, MBA, law graduates among 24.76 lakh applicants for peon jobs in Rajasthan** Highly qualified candidates, including those who have PhD and MBA degrees, have applied for peon jobs in Rajasthan. For every available position, there are 46 applicants.	Can be ***skill-related*** inadequate employment (underutilization of skills), ***income-related*** inadequate employment.

Student Notes:

Employment Scenario in India (Economic Survey 2025-26)

Key metrics for measuring the health of the job market are the **labour force participation rate (LFPR)** and **the unemployment rate** (UR). **The annual Periodic Labour Force Survey (PLFS) report for 2023-24** indicates a positive recovery in employment trends, along with other characteristics:



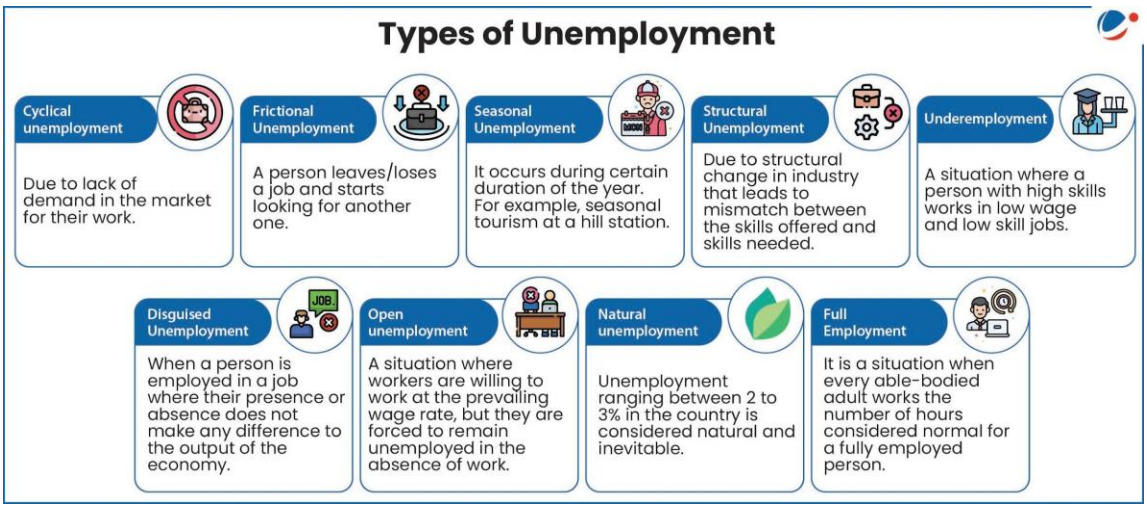
- **Unemployment rate (UR): 3.2% in FY24**.
- **Worker Population Ratio(WPR): 43.7% (all ages) in 2023-24.** Among the 36 states and union territories, only 12 have a WPR below the national average.
- **Labour Force Participation Rate (LFPR): 45.1% (all ages) in 2023-24.** Only 12 States and UTs fall short of the national LFPR average.
- **Nature of workforce:**
  - **Self-employed workforce**: The proportion of self-employed workers in the workforce has risen from 52.2% in 2017-18 to **58.4% in 2023-24**, reflecting a shift reflects growing entrepreneurial activity and a preference for flexible work arrangements.
  - **Salaried workforce**: The share of workers in regular/salaried jobs decreased from 22.8% (FY18) to **21.7% in FY24.**
  - **Casual workforce:** Showed a decline from 24.9% (FY18) to **19.8% (FY24),** indicating a shift toward more structured forms of self-employment.
- **Sectoral distribution of workforce**:
  - The agriculture sector continues to be the largest employer, with its share of employment rising from 44.1% in 2017-18 to **46.1% in 2023-24**. The share of **female workers in agriculture** increased from 57.0% in 2017-18 to **64.4% in 2023-24**, while male participation decreased from 40.2% to 36.3%.
  - The share of the industry and services sectors in employment has declined. Manufacturing's share fell from 12.1% to **11.4%,** and services from 31.1% to **29.7%** during the same period (and 13% in construction).
- **Female labour force participation rate**: Improved from 23.3% in FY18 to **41.7% in FY24 (57% in Sikkim)**. In Khadi sector, over 80% are women artians. Over 56% workforce in Handicrafts sector are women.
- **Formalisation of workforce**: Payroll data from the Employees' Provident Fund Organisation (EPFO), indicates that government initiatives (such as **eShram portal** for unorganised workers) are fostering greater economic formalisation.
  - Net additions in EPFO subscriptions FY19 to FY24: 61 lakh → 131 lakh (115% increase).
  - Total EPFO Membership: 29.9 crore (March 2023) → **32.7 crore (March 2024).**

8.4.2. Unemployment & Jobless Growth

Unemployment is not synonymous with joblessness. ILO defines unemployment as being **out of a job; being available to take a job; and actively engaged in searching for work.** Therefore, an individual who has lost work but does not look for another job is not unemployed.


The job crisis undermines state legitimacy Premium
Unemployment is not merely an economic issue, but a fundamental political challenge that strikes at the heart of how we organise our societies

'Jobless growth' refers to a phenomenon where **GDP growth** is either **not associated with employment growth** or is associated with **declining employment.** India has largely seen jobless growth over the last two decades, which has contributed to **soaring inequality** in this millennium. A recent article co-authored by Thomas Piketty put income and wealth share of the top 1 per cent of the population at 22.6 and 40.1 %, respectively, in 2022-23.



Measurement of unemployment in India

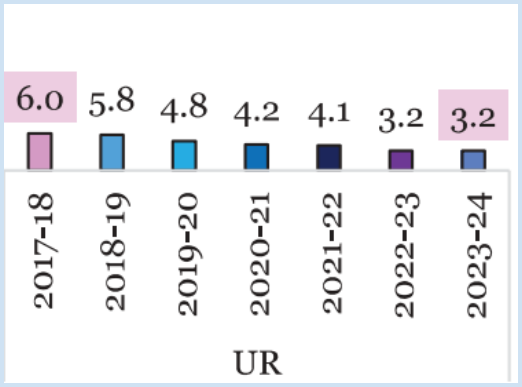
The NSSO adopts two major measures for classifying the working status of individuals in India — the Usual Principal and Subsidiary Status (UPSS) and the Current Weekly Status (CWS).

- **Usual Principal and Subsidiary Status (UPSS)**: This measure classifies an individual's employment status based on the **activity in which they spent the most time during the previous year.** Even if a person was unemployed for part of the year but engaged in subsidiary economic activities for at least **30 days**, they would still be classified as employed under this status.
- **Current Weekly Status (CWS)**: This uses a shorter reference period of one week. A person is considered employed if they worked for at least **one hour** on at least one day during the seven days preceding the survey.
- The **CWS** measure tends to show **higher unemployment rates** than **UPSS**, as it reflects the likelihood of finding work within a shorter time frame.

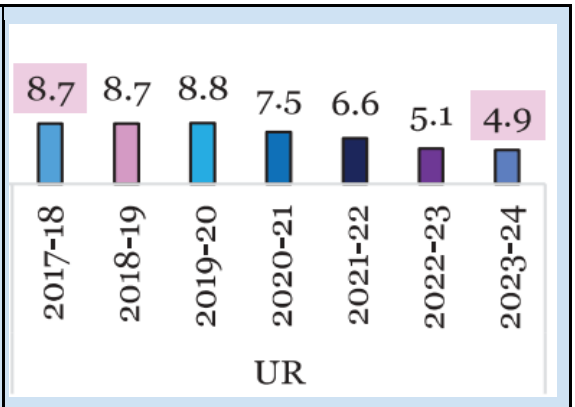
What is India's monthly unemployment rate? First ever job survey reveals numbers

Earlier conducted annually or quarterly, India will now have a monthly unemployment rate survey conducted by the National Statistics Office as some parameters touch as high as 79% in April 2025.

- Latest PLFS current weekly status (CWS) showed that unemployment rate (for persons of all ages) during **April 2025** was **5.1%.**
- Joblessness among those in the age group of **15-29 was 13.8%** across the country. The rate of unemployment in urban areas stood at 17.2%, while it was 12.3% in rural areas.
- Among males, LFPR stood at 79% in rural and 75.3% in urban areas. In contrast, female participation in rural areas was notably lower at 38.2%.



UR (CWS Approach)

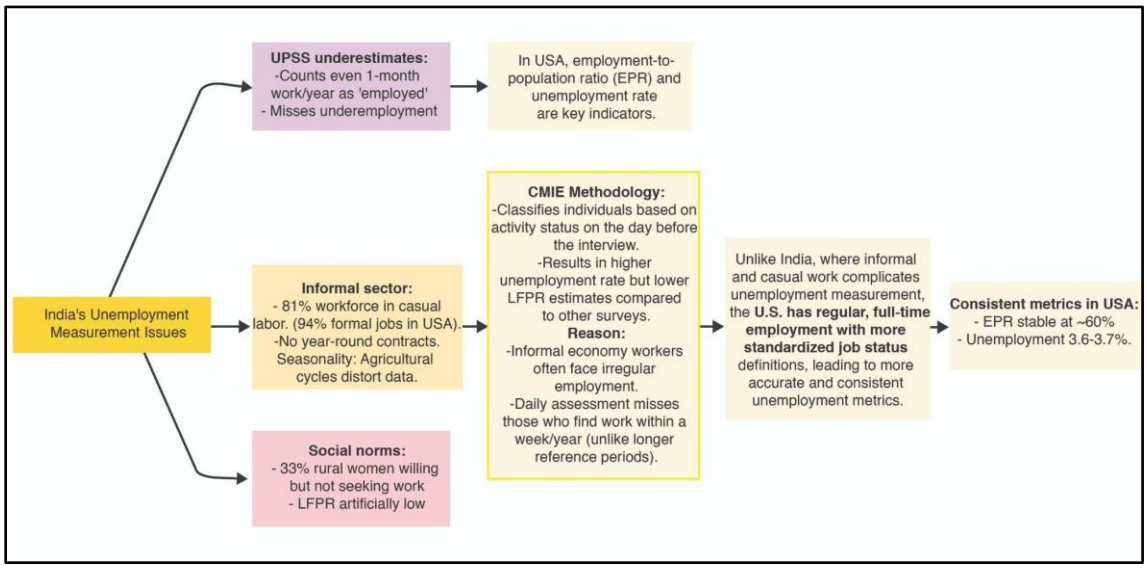


UR (Usual Status Approach)

Student Notes:

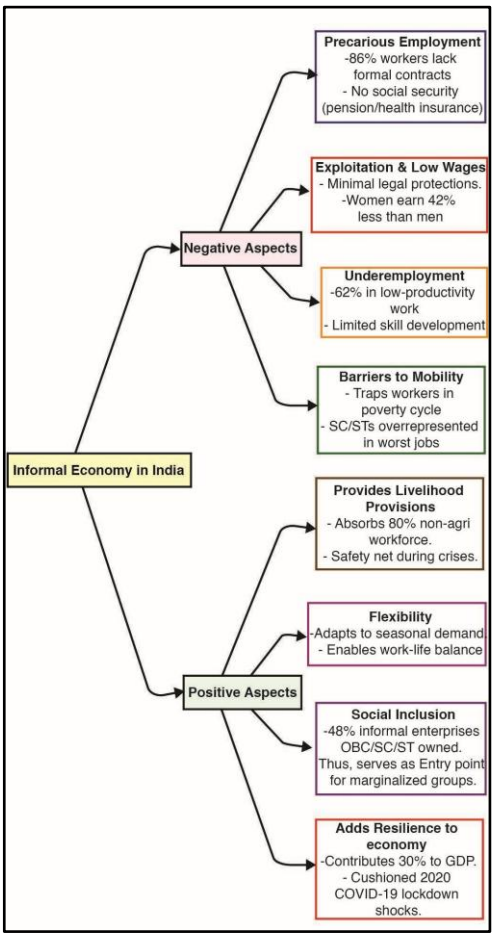
Issues with unemployment measurement methods in India

In India, measurement issues persist due to **informal economy dominance, conflicting survey methodologies (CMIE vs PLFS), and unreliable skill-employment linkages**.



8.4.3. Factors for persistence of unemployment and underemployment in India

The persistent problem of unemployment and underemployment is **rooted in issues with India's labour market.** Despite experiencing significant economic growth for over three decades, India's labour market presents a unique paradox, exhibiting **characteristics typical of both developing and developed economies.**



1. **Large Informal and Low-Productive Sectors:**
   - India's labour market remains dominated by informal sectors, including agriculture and low-productivity jobs, which **limit the creation of stable and high-quality employment**.
   - E.g, India's labor market is **heavily informal (about 90% employment)** and marked by low productivity, with **46% of the workforce in agriculture** contributing only 15% to GDP in 2024.
2. **Low Unemployment but High Underemployment:**
   - While India experiences **low open unemployment (around 3.2% in 2024)**, **underemployment and poverty** are widespread, particularly in rural and agricultural sectors. Workers often face **low wages and job insecurity** in subsistence farming or low-productivity informal roles.
3. **Slow Structural Shift from Agriculture to Non-Agricultural Sectors:**
   - The **slow shift from agriculture** to higher-productivity sectors like **manufacturing (stagnated at 15-18%)** has resulted in 46% of India's workforce still relying on agriculture. While robust service sector has huge contribution towards GDP, it has generated

Student Notes:

commensurately low level of employment opportunities *(55% contribution to GDP but 30% workforce).* The manufacturing sector, which could absorb surplus agricultural labor, has grown slowly and failed to generate sufficient employment. This structural issue of Indian economy has perpetuated large low-productivity, informal employment and unemployment.

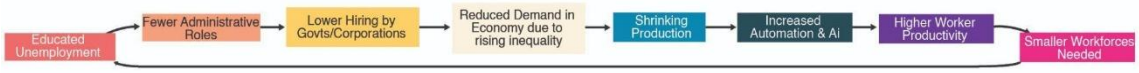
4. **High low-productive Self-Employment:**
   - A significant portion of the workforce is engaged in **self-employment, often in low-productivity, subsistence sectors.**
   - **E.g., i**n 2024, 58.4% of workers were in self-employment.

Joblessness rising in country with education levels: IIM study

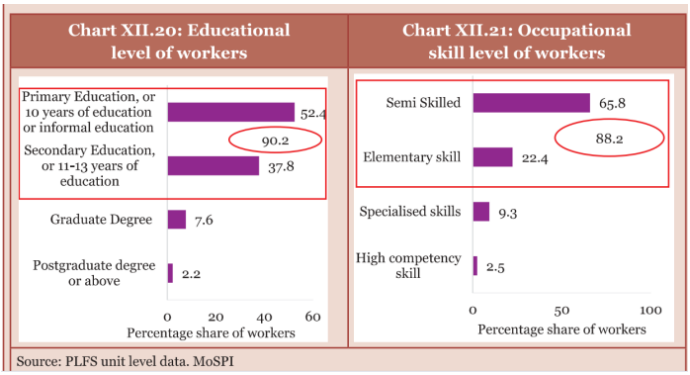
Study finds jobless growth, high unemployment among educated, low participation of women in workforce in the last four decades

According to **a study by IIM Lucknow**, the unemployment rate for graduates and above (15-29 age group) was **14.73% in 2020-21,** (significantly higher than that of less educated groups -0.57% for illiterate and 1.13% for below primary).

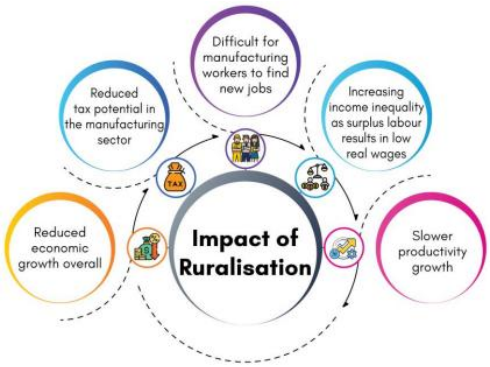
5. **Youth and Educated Unemployment:**
   - Educated unemployment is a global phenomenon driven by various factors. In India too, high levels of **educated youth unemployment** persist (Youth unemployment was 10.2% in 2024), particularly among graduates. This is partly due to **lack of practical, job-ready skills** in educated youth and partly due to **shortage of sufficient formal, high-skill job opportunities** in sectors like manufacturing.



   - According to **Economic Survey FY25**,
     - **Qualification-Job demand Mismatch**: 53% graduates, 36% postgraduates underemployed due to misaligned education-job market demands.
     - **Low Vocational Training**:
       - Only 4.1% adults, 4.9% youth formally trained (vs. 96% in South Korea).
       - 65.3% workforce hasn't received any vocational training.
     - **Education-Linked Challenges**: Over 90 % workforce has secondary-or-below education → 88.2% workforce in in low-competency (elementary and semi-skilled) occupations.
     - **Tech Disruption**: AI/automation demand new skills, render old ones obsolete.



6. **Slow Urbanization and Poor Job Creation in Urban Areas:**
   - Urbanization has not resulted in the creation of enough formal employment. Urban areas, although offering more formal jobs than rural areas, still struggle to absorb the growing urban workforce, leading to high unemployment in cities.



The mismatch between where jobs are and what students are studying Premium

Addressing the mismatch between education and job market needs in India, highlighting the importance of employability over unemployment statistics.

Student Notes:

- **E.g., u**rban areas have a higher open unemployment rate, around 6%, compared to rural areas, reflecting limited opportunities in the formal urban sector.

7. **Failure of digital economy vis-à-vis employment generation**
   - Though the digital economy has created new job opportunities, particularly in the gig sector, many of these jobs remain precarious, informal, offering low fluctuating wages and no social security benefits.

Low female labour force participation rate in India

Though **Female LFPR** increased from **23.3%** in 2018 to **41.7%** in 2024, it still lags behind the male LFPR of **78.8%** in 2024. Women are more likely to be employed in low-wage, informal, or self-employment roles.

Key Reasons:

- **Sociocultural Norms and Family Responsibilities:** Societal expectations on women for domestic duties, especially **childcare**, limit workforce participation. A study shows **58.9% of women** cite childcare and homemaking as reasons for non-participation. Marriage causes a **12%** drop in female LFPR in South Asia.
- **Limited Job Opportunities and Self-Employment Driven by Distress:** A lack of **formal job opportunities**, especially in rural areas, forces women into **self-employment**, often under economic necessity, leading to low-wage, low-skill jobs. **73.5% of rural women** are in self-employment, earning **40% less** than men.
- **Poor Working Conditions and Gender Pay Gap:** Women in **self-employment** and **informal jobs** face lower wages and poor working conditions compared to men, limiting economic mobility and security.
- **Lack of Supportive Infrastructure:** Insufficient **childcare facilities**, **unsafe transportation**, and lack of **flexible work arrangements** hinder women's workforce participation. Issues like **lack of female toilets** at workplaces and **crèche facilities** are prevalent.
- **Underutilization of Digital Infrastructure:** While **digital tools** offer potential, their benefits are underutilized, especially in rural areas. **Improved access to digital infrastructure** has increased female LFPR by **29%** in rural areas, according to **Fernandez and Puri (2023)**.

A **World Bank paper** highlights that promoting **women-owned, growth-oriented enterprises** can significantly boost FLFPR and economic growth in rural India.

Is 'Jobless growth in India a myth?': Insights from data, theory, and logic

An article in ORF (Oct, 2024) highlighted how 'jobless growth' in India is a myth in recent times.

- During **2016-17 and 2022-23**, data shows that employment has gone up by almost **36% or 170 million in absolute numbers,** while GDP has shown a healthy average growth rate of over 6.5% during the same time. The graph below suggests a convergence between GVA and employment generation in recent years.

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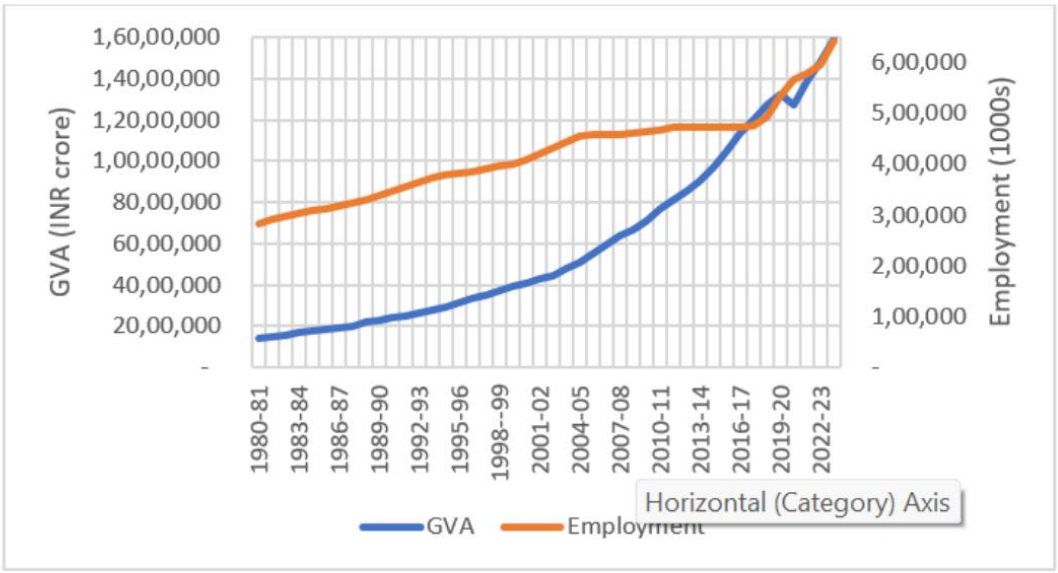

Source: RBI KLEMS

- Between 2017 and 2023, there was a **1.11% increase in jobs** for every 1% increase in value added (GDP growth) **(Positive employment elasticity of growth)**.
- This is also substantiated from increase in the **Worker Population Ratio (WPR) in both rural and urban areas (**measures the proportion of the working population). WPR for **rural areas** increased from 54% to **56.3% (Male),** 30% **to 34.8% (Female**), and for **urban areas**, it increased from 54% to **55.6% (Male)** and 18.7% to **20.7% (Female)** in 2022-2023.

Contributing **over 55%** of GDP, **consumption** has been the primary growth force, stimulating the economy through both autonomous and multiplier channels (**Consumption-driven growth).**

Impact of AI on employment

By 2030, AI is expected to impact over **38 million jobs, particularly in IT, healthcare, and retail**, driven by AI engineering, automation strategy, and predictive analytics.

Global Job Exposure Estimates to AI:
- 75M jobs at complete risk (ILO)
- 300M full-time jobs exposed to automation (Goldman Sachs)
- 30% of work hours in US/Europe automatable by 2030 (McKinsey)

- Historically, technological revolutions have sometimes led to periods where **wages do not keep pace with productivity gains,** resulting in economic hardship and social disparity, a phenomenon known as **"Engle's pause".**
- Without careful management, **Economic Survey FY25 predicts that AI could cause similar outcomes.**

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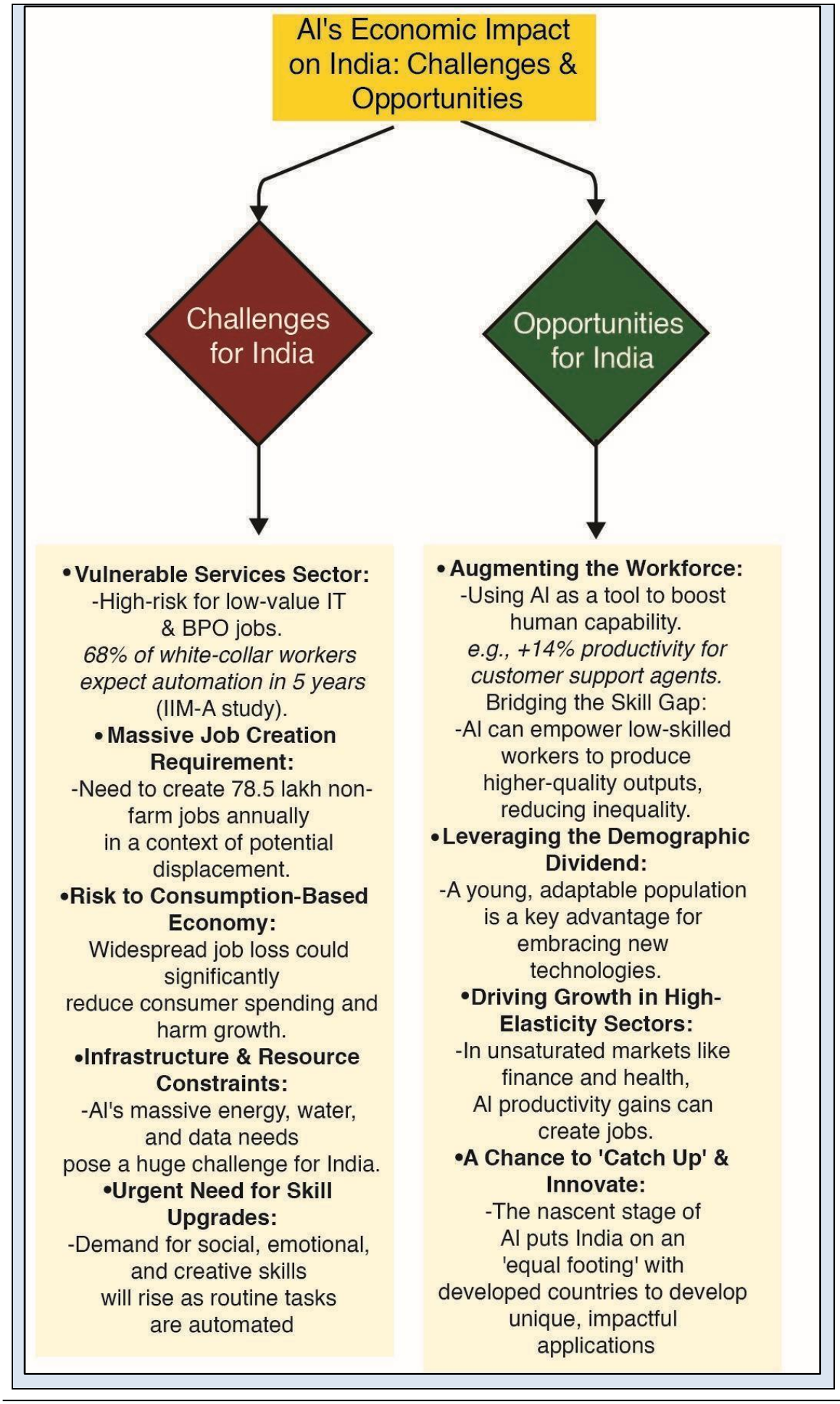


Student Notes:

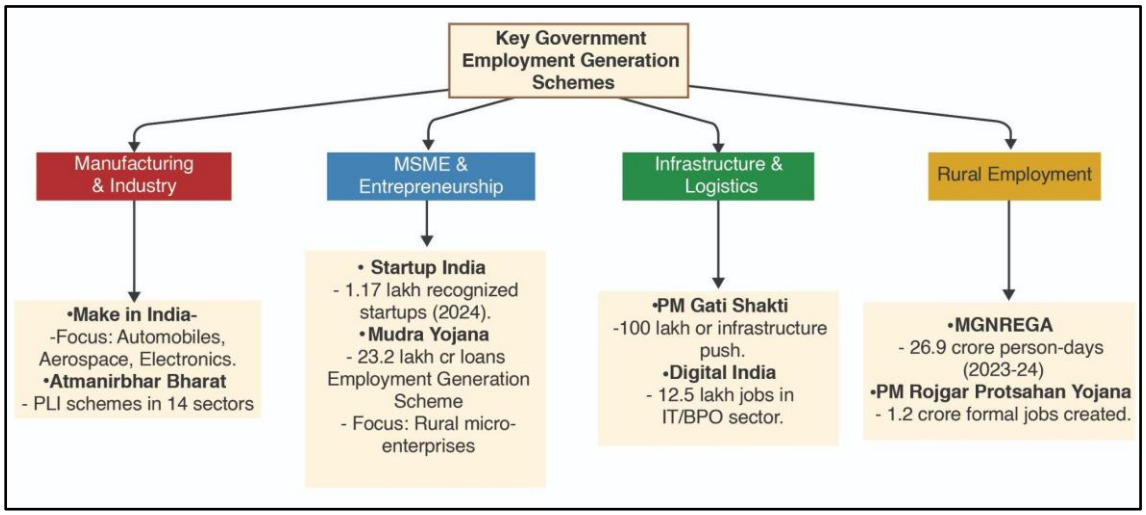
Recommendations

- **Targeted Reskilling**: India should invest in vocational training, particularly in AI-related fields like machine learning and cybersecurity, to equip workers with complementary skills.
  Example: Germany's vocational system has reduced youth unemployment by focusing on high-demand skills.
- **Promote Labour-Intensive Industries**: Emphasizing labour-intensive sectors like textiles and footwear can provide mass employment while AI boosts productivity.
- **AI-Driven Job Creation**: AI can enhance job creation by improving efficiency across sectors. Encouraging AI in global capability centers and start-ups can create jobs for young graduates.
- **Strengthen Online Education**: Expanding online platforms offering industry-certified courses in AI, data science, and digital marketing helps workers transition to new AI-driven roles.

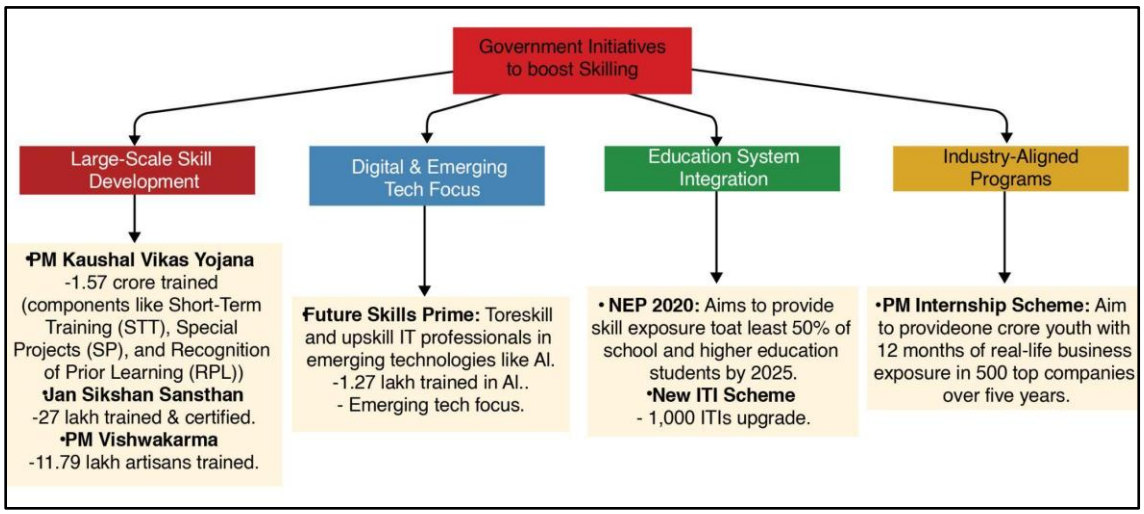
AI's impact on employment in India presents both challenges and opportunities. By prioritizing skills development, labor-intensive industries, and reskilling initiatives, India can mitigate job displacement and build a future-ready workforce.

8.4.4. Government initiatives to promote employment

The Government of India has implemented several initiatives and schemes to promote employment growth.



Schemes to boost Skilling:



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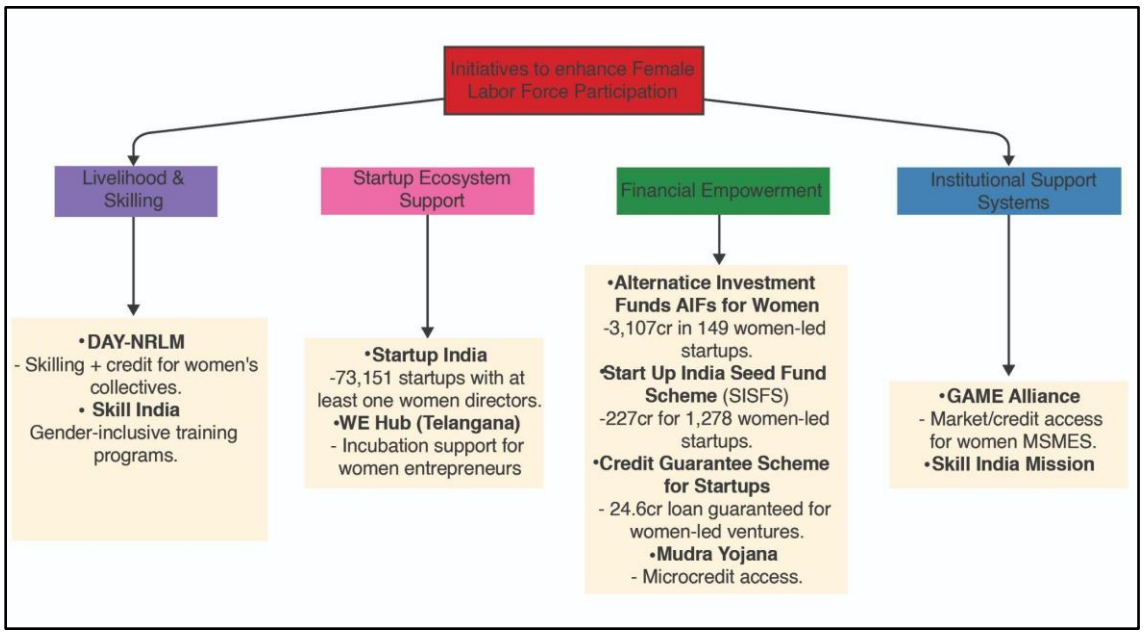
Schemes to boost female labour force participation:



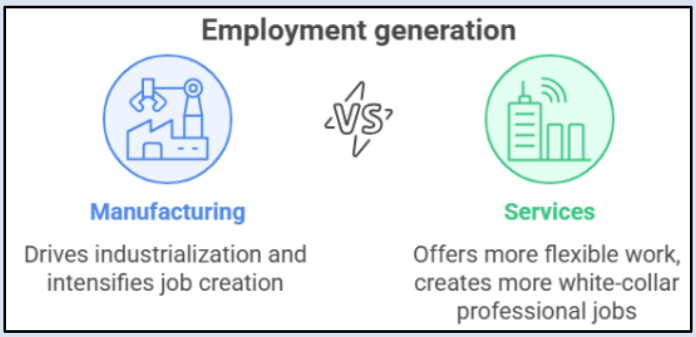
8.4.5. Recommendations for tackling issue of unemployment

Following recommendations are suggested to tackle the structural causes of unemployment in India:

- **Accelerate Structural Transformation** towards labour-intensive manufacturing and services: Strengthening initiatives like **Make in India** and **PLI** schemes will promote manufacturing, creating formal and productive jobs.

Industries and Services as Twin Pillars of India's Employment Generation

- The **manufacturing sector** accounts for **32.3%** of India's workforce, while the **services sector** employs **62.3%** of urban workers. Both sectors are crucial for creating job opportunities, especially in the context of India's **growing youthful workforce**.

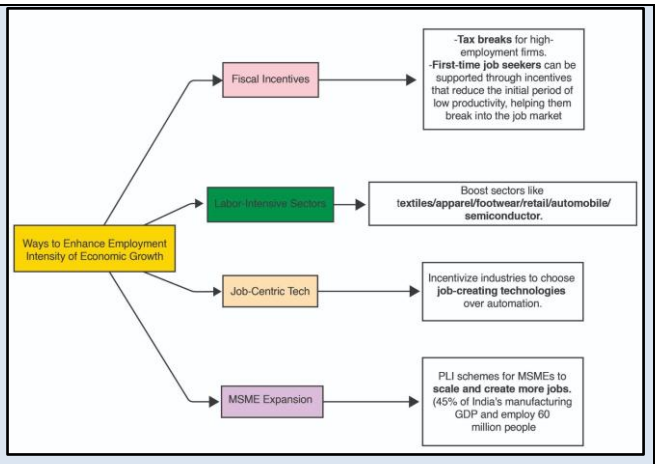


What can be done to make Manufacturing and Services Sector more Employment-Intensive?

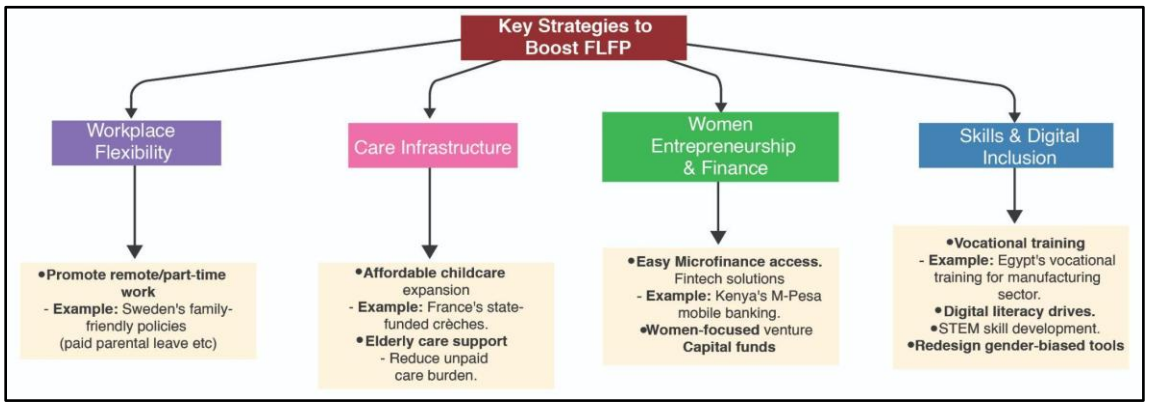
- **Revitalize Labour-Intensive Manufacturing:** Focus on sectors like **textiles, leather, electronics, automobiles**, and **semiconductors** using **PLI schemes** to create formal jobs and reduce agriculture dependency.
- **Boost MSME Growth:** MSMEs are key to manufacturing. Provide tailored **PLI support**, lower capital thresholds, and facilitate **job creation**.
- **Increase Female Participation: Manufacturing output** could rise by **9%** with more female workers. Implement policies such as **childcare facilities**, **female-friendly infrastructure**, and flexible work hours to boost women's participation in both sectors.

Student Notes:

- **Strengthen Digital Infrastructure for Services:** Expand **digital infrastructure** in Tier II and III cities to ensure equitable job distribution, particularly in **fintech** and **green logistics**. Sectors like **IT**, **financial services**, and **retail** offer **flexible work** and contribute significantly to GDP and employment.



- **Promote Formal Employment** : Formalizing informal jobs through active labour market policies, such as **providing social security and stable contracts,** will improve job quality. Encouraging businesses to formalize their workforce will provide **better working conditions and higher wages**.
  - **E.g.,** Brazil's formalization policies have successfully increased the number of workers in the formal sector, reducing inequality.
- **Revising regulations for flexibility:** India's labour regulations impose extensive compliance requirements on businesses.
  - **Eg-** Minimum Wages Act (1948) has Rules on register paper colors, font sizes on wage slips; Factories Act, and 1948 mandates placement of spittoons.
  - Allow flexible working hours and increased overtime limits to adapt to market needs (**Economic Survey FY25**). Countries like **Germany** and the **UK** allow averaging of working hours, enabling businesses to meet fluctuating production demands efficiently. **Malaysia** allows **312 overtime hours per quarter**.
- **Focus on High-Potential Sectors: Digital economy, renewable energy, fintech** etc offer vast potential for creating high-quality jobs.
- **Expand skilling infrastructure, reinvent curriculum and promote academia-industry collaboration:** Expanding vocational training and aligning education with market needs in sectors like manufacturing and IT will make the workforce job-ready.
  - **Japan's strong apprenticeship programs** and Germany's vocational training system have successfully reduced youth unemployment and enhanced skill development.
- **Support Women's Labour Force Participation**: Gender-sensitive policies providing women with equal access to quality jobs, training, and supportive workplace environments are crucial to closing the gender gap in the workforce.



- **Encourage Rural Non-Farm Sector Growth**: To reduce dependence on agriculture, the government should boost the rural non-farm sector by providing financial and technical support to entrepreneurs.

Student Notes:

- **Industrialisation of China's East coast** (export oriented) led to faster poverty alleviation and promoted rural employment generation outside agriculture.

They get millions, you get Mondays: CEO pay soars 50%, workers' wages climb 0.9%

- **Fair income distribution between Capital & Technology and improve Technological Inclusivity**: In India with the **persistence of labour surplus, low yield, small holding, rain-dependent agriculture**, capital investments to adopt automation are unaffordable for most labour force. A balanced distribution of income between capital and labor is essential for sustaining consumer demand and, consequently, long-term economic growth and corporate profitability.

Corporate Profitability Hits 15-Year High even as wage growth moderates

- Efforts must be made to **ensure low-skilled workers are not excluded** from the digital economy. Expanding digital literacy and providing access to technology will help bridge the gap and enable workers to thrive in the growing tech-driven sectors.

Employment Linked Incentive scheme to create 3.5 crore jobs in 2 years

Scheme aims to support job generation, enhance employability and social security across all sectors

  - **Estonia's focus on digital literacy** has successfully included low-skilled workers in the growing tech economy.

In the age of AI, institutional frameworks that **balance technological adoption with job creation** will be significant for achieving the goal of an **'Aatmanirbhar Bharat**.'

Apart from efforts to boost manufacturing, to harness India's demographic dividend and services-driven economy, strategic focus must be placed on **technology-augmented productivity** and **globally aligned skilling ecosystems**.

Proactive demand-supply analyses of international labor markets, coupled with high-quality skill development, can position India as a **competitive workforce hub**.

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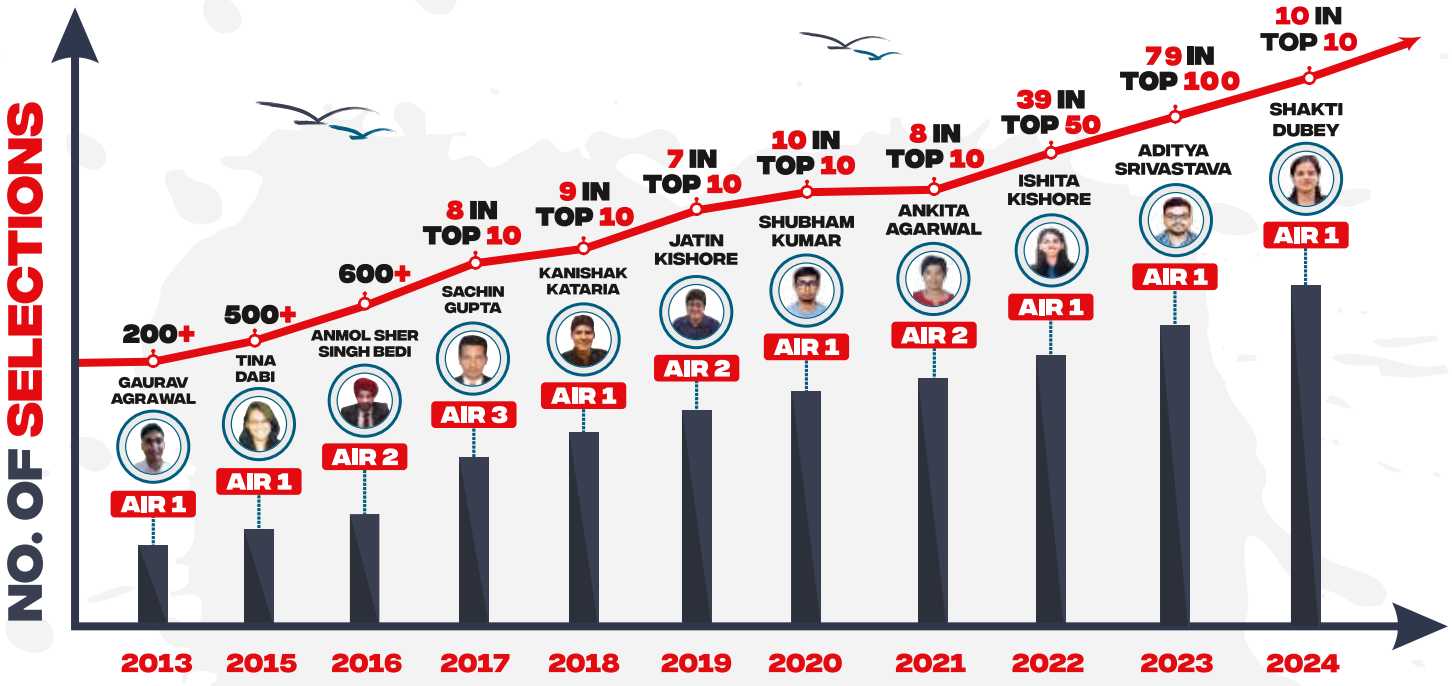

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