

DR. M.S. SWAMINATHAN MEMORIAL LECTURE

# India's Economic Development & Structural Crisis in Agriculture

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***"India — Will you be a casualty or will you be a leader? The choice is yours."***

*— Ram Charan, Indian Business Consultant, Harvard*

## 1. Introduction — A Question: Victim or Leader?

Ram Charan — Harvard's Indian Business Consultant — posed a stark question: "India — Will you be a casualty or will you be a leader? The choice is yours." This question has deeply resonated with me, and today I am here to search for its answer.

I have worked in administration for many years. Around 2005 onwards, farmer suicides had taken an alarming form. Then Prime Minister Dr. Manmohan Singh took note of the situation and visited affected families in Wardha. The Central and State governments initiated several programs, but farmer suicides did not reduce — this is the unfortunate reality.

When the issue of farmer suicides and the overall plight of agriculture is examined from an economic perspective, it becomes clear that the large population dependent on agriculture must transition to other sectors. No country in the world has achieved progress solely through agriculture.

## 2. The Global Economy — Where Do We Stand?

After retirement, I spend six months in the United States and six months in India. I have worked with Nobel Prize-winning economists at Harvard Kennedy School, who advised me to study China and South Korea to understand models of economic development — which I personally did by spending two months in each country.

Let us first understand India's position in the world. According to IMF data (Visual Capitalist 2026):

**Table 1: World's Major Economies in 2026 (Nominal GDP)**

Rank	Country	GDP (USD)	Note
1	United States	\$31.8 Trillion	World's Largest
2	China	\$20.7 Trillion	Rapidly Growing
3	Germany	\$5.3 Trillion	
4	India	\$4.5 Trillion	Fourth Position
5	Japan	\$4.5 Trillion	

Source: IMF World Economic Outlook, Visual Capitalist 2026

India ranks fourth in nominal GDP — but the picture in Purchasing Power Parity (PPP) GDP is different. In PPP terms, China leads globally at \$43.5 trillion, with India third at \$19.1 trillion. However, when we look at per capita income, the truth emerges:

**Table 2: Per Capita GDP Growth — 2000–2026 (IMF, Visual Capitalist)**

Country	2000	Growth %	2026
China	\$1,000	+1,430%	\$14,700

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Country	2000	Growth %	2026
South Korea	\$12,700	+195%	\$37,500
India	\$400	+589%	\$3,100
United States	\$36,300	+156%	\$92,900
Japan	\$39,200	-7%	\$36,400

Source: IMF, Visual Capitalist 2026. Current prices USD, not inflation-adjusted.

India's per capita income growth of 589% appears impressive. But note: in 2026, our per capita income is only \$3,100, while China's is \$14,700 — nearly five times more. The World Development Report 2024 states that at the current growth rate, India will need 75 years to reach one-quarter of US per capita income. We must acknowledge that we have missed the development bus.

### 3. India's Agricultural Burden — A Structural Paradox

India's agricultural problem is not merely an issue of farmer distress — it is the biggest structural paradox in the country's overall economic architecture. The Hinrich Foundation 2026 report has presented this clearly:

**Table 3: India's Workforce — Sector-Wise Distribution (2023)**

Sector	Workforce Share	GDP Share
Agriculture	45.8%	16.2%
Construction	13.0%	—
Trade, Hotels, Restaurants	12.1%	—
Manufacturing	11.4%	12.8%
Services	Other	51.1%

Source: Directorate General of Employment India, World Bank, MoSPI FY26 (Economic Survey 25-26)

Observe the paradox — 45.8% of workers are in agriculture, yet their contribution to GDP is only 16.2%. This means each agricultural worker generates far less productivity than workers in other sectors. This is not unique to India — it is a challenge for developing nations worldwide. But India leads the world in the largest number of agricultural workers:

**Table 4: World's Major Countries — Agricultural Workers (2019, World Bank)**

Rank	Country	Agri Workers	% of Total Workforce
1	India	272 Million	43%
2	China	229 Million	25%

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Rank	Country	Agri Workers	% of Total Workforce
3	Ethiopia	59 Million	66%
21	United States	3 Million	2%
22	Japan	3 Million	4%
24	Germany	0.6 Million	1%

Source: World Bank Open Data

Only 2% of workers are in agriculture in the US, 1% in Germany, 4% in Japan — and they are the world's highest-producing nations. China has already reduced its share of agricultural workers from 43% to 25%. Between 1978 and 1992, it moved 220 million people out of agriculture and provided alternative employment — a model I personally studied during a two-month stay in China.

#### 4. China's Development Model — 'Town & Country' and Technology Transfer

At one point, China's socialist model reached its limits — because nowhere in the world has economic progress been achieved through socialism. Subsequently, Deng Xiaoping adopted the 'Reform and Opening Up' policy. Its formula was — Town & Country: a factory alongside agriculture in every village. Morning in the fields, evening in the factory.

Township and Village Enterprises (TVEs) were the engine of China's rural industrialisation. China's President was a top-ranking engineer from France. The educated leading the country is why it progresses. China's leaders had Singapore's former Prime Minister as an advisor.

Labour-intensive industries — textiles, garments, toys, leather — generated employment. Manufacturing and exports earned foreign currency. China used what Ram Charan calls the '90% Model' — build 90% of global demand capacity in a sector, drive out competitors, and dominate the field. Then move to the next sector.

But China's most important move was technology transfer. The only condition for foreign investors: produce for ten years, then transfer the technology.

**Table 5: China's Manufacturing Dominance — 2024 (UN Industrial Development Organization)**

Sector	China's Share	Source
Solar Panels (Wafers)	96.8%	IEA
Lithium-Ion Batteries	70%+	Visual Capitalist
Global MVA — 2024	~28%	UN IDO
Railway Equipment (CRRC)	44%	CRRC Annual
Consumer Drones (DJI)	90%+	Industry Data
EV Battery Mfg (CATL)	#1 Global	CATL

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Sector	China's Share	Source
MVA — 2030P (Estimate)	45%	Visual Capitalist

MVA = Manufacturing Value Added. China's MVA share was only 6% in 2000 — today it is 28% and projected to reach 45% by 2030.

For comparison — during this same period, India's manufacturing sector's share of GDP is only 12.8% (Economic Survey 2025-26, MoSPI). Our Manufacturing GVA share is stable — it is not growing. We speak of Make in India and introduce PLI Schemes — but the foundation is not as strong as it should be.

## 5. Why Did India Miss the Development Bus? — 1991's Opportunity and the Technology Transfer Mistake

Under Dr. Manmohan Singh's leadership, India embraced globalisation in 1991 — a bold step. Foreign investment came. But India did not impose technology transfer conditions like China did. As a result, foreign companies made profits, but technology did not remain in India.

What are the consequences today? According to India's Reckoning (Hinrich Foundation 2026), look at India's export mix:

**Table 6: India's Export Mix Change — 1995 vs. 2023 (Harvard Atlas of Economic Complexity)**

Sector	Share in 1995	Share in 2023
Textiles	22.4%	5.1%
Agriculture	19.5%	7.3%
Services	17.4%	45.5%
Electronics	2.0%	4.1%
Automobiles	2.4%	3.6%

Source: Harvard Atlas of Economic Complexity. India's service exports rose from 1.9% of GDP in 1975 to 14.6% today — a sevenfold increase.

India is a global leader in the services (IT, BPO) sector — this is our achievement. But in textiles, electronics, automobiles — these labour-intensive manufacturing sectors — we have fallen behind. Service exports create employment, but the 45% of workers in agriculture cannot be absorbed into the services sector. They need the manufacturing industry.

## 6. 'Viksit Bharat @47' — Dream and Reality

Prime Minister Narendra Modi has declared the goal of making India a 'Viksit Bharat' (Developed India) by 2047. According to NITI Aayog, this means:

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Target	Current Status (2026)
GDP \$30 Trillion (2047)	\$4.5 Trillion (today)
Per Capita Income \$18,000	~\$3,000 (today — World Bank)
'High Income' Status (\$13,846+ per capita)	Today: 'Lower-Middle Income'

Source: NITI Aayog Viksit Bharat Document, World Bank Income Classification

The World Development Report 2024 clearly states: India, along with China, Brazil and South Africa, faces the risk of a 'middle income trap'. At the current growth rate, India will need 75 years to reach one-quarter of US per capita income. What is the solution? WDR prescribes: Investment → Technology Adoption → Innovation — the path of South Korea.

## 7. Manufacturing Obstacles in Maharashtra and India

In Pune, there is gang violence. Manufacturing industries operate under intimidation or shut down. Politicians in Satara district have themselves become criminals. The situation in Maharashtra seems extremely dire to me.

A former Chief Minister asked me — how is the government running? I said — there is an ST bus. Every morning, leaders of all three parties get on board, the conductor and driver also come — but till evening, no one tells the bus driver where they want to go. Hence the wheel of economic development will not turn.

Tamil Nadu, however, is a model for the manufacturing sector. Here, officials harass industries so much that entrepreneurs become demoralised. These officials are, in the true sense, anti-national.

### Key Manufacturing Obstacles:

Obstacle	India	Competitor Countries
Labour Laws	4 Labour Codes not yet fully implemented	China — flexible; Bangladesh — night shifts for women
Corruption	Transparency International rank declining	Singapore, Korea — low corruption
Port Infrastructure	No deep ports; Colombo/Singapore trans-shipment	China — Shanghai, Shenzhen global hubs
R&D Investment	\$76 Billion (~2% of GDP)	China \$786B; South Korea \$126B
Female Labour Participation	37% (2023) — among world's lowest	China 60%; USA 57%

Source: WIPO, Directorate General of Employment India, Transparency International 2025

## 8. Bangladesh, Labour Reforms and the APMC Question

Our neighbour Bangladesh is making its mark globally in textiles. They had the courage to allow women to work night shifts. According to BGMEA (Bangladesh Garment Manufacturers and Exporters Association), textiles account for 85% of Bangladesh's total exports — employing 40 million workers. This is happening with us now, but very late.

Agricultural Produce Market Committees (APMCs) were created not for the development of farmers, but for exploitation. Expanding Farmer Producer Organisation (FPO) models like Sahyadri Farms is an urgent need. And the three farm laws should not have been withdrawn — had they been accepted, major reforms would have occurred in the agriculture sector.

## 9. Geopolitics, Fertiliser Crisis, and Supply Chain Risks

Recently, some exporters came to meet me — their containers were stuck at ports due to the war situation. Government secretaries called a meeting after three days — while agricultural produce was lying at the port. Finally, after speaking with Nitin Gadkari was relief obtained. The notion that IAS officers are intelligent is your misconception.

War is closing major trade routes. Trade now has to go via Muscat. Global instability is directly affecting India's fertiliser supply:

**Table 7: India's Fertiliser Supply — Global Dependency**

Fertiliser / Component	Main Source Countries	Risk
Urea (Gas)	Iran, Russia, Oman	Iran factory closed; uncertainty till 2035
Rock Phosphate (DAP)	Morocco (40%), China (37%)	Global concentration — dangerous
Potash	Belarus, Canada, Russia	Unstable due to war/sanctions
Shipping Route	Red Sea / Suez Canal	Houthi attacks causing 200-400% cost increase

Source: CIA, The Fertilizer Institute, World Factbook

India's net energy imports have grown from 3.8 million TJ in 2000 to 16.9 million TJ in 2023 (Carnegie, IEA). India's trade geography means the Suez Canal, Bab-el-Mandeb, and Strait of Hormuz are all critical chokepoints — and all are currently unstable.

## 10. Demographic Dividend or Demographic Destruction?

India's average age is 31 years. This is a country of youth. Every year, 12 to 13 million young people enter working age. According to McKinsey Global Institute, by 2030, India's cities will contribute 70% to the country's GDP — but for that, cities need to be made growth engines.

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But what is the picture today? Formal employment creation is 5–7 million per year. Demand is for 12 million. A shortfall of 5–7 million is created every year. According to CMIE data, the unemployment rate in the 15–29 age group is over 23%.

The situation for women is even more worrying. According to the Directorate General of Employment India, the Female Labour Force Participation Rate (LFPR) in 2023 is only 37% — compared to 60% in China and 57% in the USA. Without bringing women into the manufacturing sector — as Bangladesh did in textiles — this figure will not improve.

India has a \$526 billion infrastructure investment gap by 2040 — Telecommunications (\$167B), Energy (\$163B), Water (\$117B), Roads (\$79B). Without filling this gap, building a manufacturing base will be difficult.

## 11. The 'China Shock' — The Biggest Threat

America gave technology to China — hoping democracy would be established. But democracy did not come; instead China used what Ram Charan described as the '90% Model' to create monopolies in global industries.

Understand China's 90% Model (Ram Charan, December 2025): build 90% of global demand production capacity in a sector; keep currency 20% undervalued (RMB has been 52% devalued since 1990); sell at subsidised prices below marginal cost; drive out competitors; then move to the next industry.

**Table 8: 10 Major Industries Destroyed by China in America (Ram Charan Model)**

Industry	Examples
Furniture	Home, Office, Outdoor Furniture
Toys	Children's Toys, Dolls, Scooters
Consumer Electronics	Phones, Appliances, Game Consoles
Solar Panels	Modules, Wafers, Cells
Textiles / Garments	Garments, Fast Fashion
Pharma Ingredients (API)	Generics, Core Ingredients
Lithium Batteries	EV Batteries, Cell Manufacturing
Telecom Infrastructure	Mobile Networks, Switching Gear

Source: Ram Charan, *China's 90% Model*, December 2025; Bloomberg, *Good Jobs First*

China has now targeted the next 10 industries under 'Made in China 2025': AI, Robotics, Maritime Equipment, Advanced Rail Transit, EVs, Power Equipment, Agriculture Equipment, New Materials, Biopharma, Aerospace. In December 2025, China's global trade surplus reached \$1.08 trillion — never in history has any country achieved such a trade surplus.

## 12. Ports, Cities, and the Engine of Development

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The World Development Report 2009 states: economic development is geographically uneven. Density, distance, and division — these three factors determine who will progress and who will be left behind. A large port with a city alongside — this is the global formula for development.

Japan (Tokyo-Osaka corridor), South Korea (Busan), China (Shanghai, Shenzhen) — all made coastal urban nodes growth engines. China took Shenzhen from 0.7 million to 4.2 million through planned urbanisation. By 2030, India will have 68 cities with populations over one million. Cities will contribute 70% to India's GDP by 2030 — but our cities are shabby, unplanned, and poorly designed.

India does not have deep-draught ports. Fertilisers come to Kandla and have to be brought in on small boats. We trans-ship through Colombo, Singapore, and Port Klang — costing an extra \$200–\$300 per container. Connecting Dighi and Jaigad ports by rail could transform Maharashtra's industrial map — I have been saying this for years, yet no progress.

### 13. Lack of Policy Continuity in Agriculture

Ethanol from sugarcane, then from maize, then from cheap rice — there is no policy consistency. The Economic Survey 2025-26 (MoSPI) states agriculture sector growth in 2024-25 is 4.6% — but this is mainly because the weather was favourable. There are no long-term structural reforms.

Moisture is critical for cotton and tur. Vidarbha's agriculture depends on how many rainy days there will be. Farmers should not chase crops like soybeans — that crop has now become merely raw material for soya cake. According to the Global Innovation Index 2025 (WIPO), India ranks first among lower-middle income countries — but China tops the upper-middle income group. India needs to make a giant leap in innovation.

### 14. What Needs to Be Done? — Eight Urgent Measures

1. Rural Industrialisation (TVE Model): One labour-intensive industry per taluka — textiles, food processing, leather. Target 10 million jobs in 5 years. Target: 500 district clusters.
2. Mandatory Technology Transfer: Mandatory technology localisation clauses in PLI schemes. Follow the China model for EVs, semiconductors, solar, and defence electronics.
3. Full Implementation of Labour Laws: Fully notify all 4 Labour Codes by 2026. Reform Mathadh legislation. Bangladesh model: night shifts for women, flexible hiring.
4. APMC Reform — FPO Expansion: Farm Laws won't return — but at minimum, mandate e-trading in 50% of APMC yards. Scale the Sahyadri Farms model.
5. Fertiliser Security — Strategic Reserve: A 6-month strategic fertiliser reserve (like the petroleum reserve). Bilateral mineral agreements with Morocco, Canada, and Oman.
6. Dighi-Jaigad Port Development: Declare as a National Maritime Development Project. Railway connectivity. Develop a Port-anchor growth city plan.
7. Youth Employment — Demand-led Skilling: Make PMKVY industry co-funded. Increase placement rate from 30% to 70%. First-time worker tax credit for MSMEs.

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8. Independent Agricultural Policy Commission: Like RBI's Monetary Policy Committee. Peer-reviewed, non-partisan recommendations for MSP, input subsidies, and trade policy.

## Conclusion — The Choice Is Ours

*India is the third economy in PPP GDP — but ranks 126th in per capita income. We missed the development bus once — there is no time to miss it again. To avoid the Middle Income Trap, India must adopt South Korea's path — Investment, Technology Adoption, Innovation.*

Agriculture is our soul, but agriculture cannot be our only hope. If work is done simultaneously on rural industrialisation, technology transfer, APMC reform, fertiliser security, and port development — only then will the livelihoods of farmers change.

In McKinsey's words: India will have 68 million-plus cities by 2030. Cities will account for 70% of GDP. The demographic dividend window is closing. If young hands are not given work, the demographic dividend will become demographic destruction.

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