

Industry Research
Report
On
Indian Packaging Industry

21st March 2026

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Conversion Rate Used Across the Report

Year	CY20	CY21	CY22	CY23	CY24	CY25	CY26P	CY27P	CY28P	CY29P	CY30P
Average Exchange Rate	74.14	73.93	77.57	82.57	83.15	86.15	87.16	87.16	87.16	87.16	87.16

Source: Cervicorn Consulting, CareEdge Research

Not: P denotes Projected

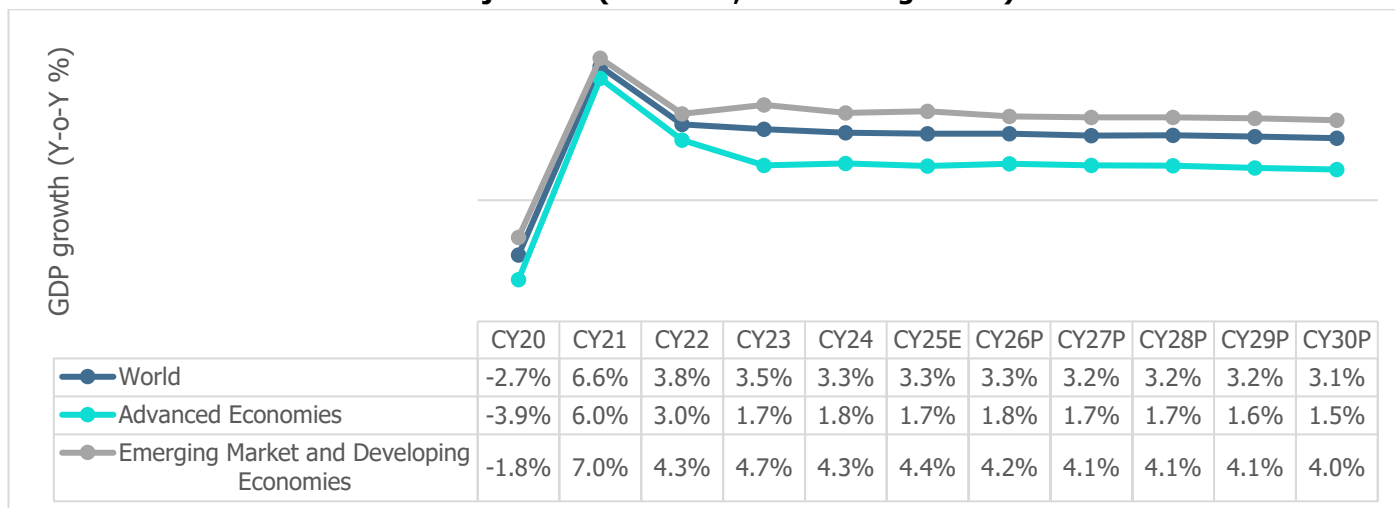
1 Global Macroeconomic Outlook

1.1 Commentary on Macroeconomic Trends in the Global Economy with an Overview and Outlook of Global GDP Trends

Global growth forecasts are expected to remain resilient in CY26 and CY27 at 3.3% and 3.2% respectively. Tighter and changing trade policies are slowing down the momentum, but this is being balanced by strong technology and AI investment, supportive fiscal and monetary settings and resilient private sector adjustment.

Key downside risks are weaker than expected AI related investment, a renewed escalation in trade or geopolitical tensions, and higher public debt that could raise long-term interest rates and tighten financial conditions. Central banks priority will be to adjust policies, while smart fiscal planning and reforms are key to handling debt and reducing global inequalities.

Chart 1: Global Growth Outlook Projections (Real GDP, Y-o-Y change in %)



Source: IMF – World Economic Outlook, January 2026; Note: E-Estimate, P-Projection

1.2 Outlook on Key Advanced Economies and Key Emerging Markets

Table 1: GDP growth trend comparison - India V/s Other Economies (Real GDP, Y-o-Y change in %)

	Real GDP (Y-o-Y change in %)										
	CY20	CY21	CY22	CY23	CY24	CY25E	CY26P	CY27P	CY28P	CY29P	CY30P
India	-5.8	9.7	7.6	9.2	6.5	7.3	6.4	6.4	6.5	6.5	6.5
China	2.3	8.6	3.1	5.4	5.0	5.0	4.5	4.0	4.0	3.7	3.4
Indonesia	-2.1	3.7	5.3	5.0	5.0	5.0	5.1	5.1	5.0	5.1	5.1
Saudi Arabia	-3.8	6.5	12.0	0.5	2.0	4.3	4.5	3.6	3.3	3.3	3.3
Middle East	-2.3	4.7	6.4	2.6	2.6	3.7	3.9	4.0	3.7	3.7	3.7
Latin America	-6.9	7.4	4.3	2.4	2.4	2.4	2.2	2.7	2.7	2.8	2.6
Brazil	-3.3	4.8	3.0	3.2	3.4	2.5	1.6	2.3	2.3	2.4	2.5
Euro Area	-6.0	6.4	3.6	0.4	0.9	1.4	1.3	1.4	1.3	1.2	1.1
United States	-2.1	6.2	2.5	2.9	2.8	2.1	2.4	2.0	2.1	1.9	1.8

Source: IMF- World Economic Outlook Database (January 2026); Note: E- Estimate P- Projections, India's fiscal year (FY) aligns with the IMF's calendar year (CY). For instance, FY24 corresponds to CY23. Euro Area* includes 20 member states of the European Union. Emerging market and Developing Economies have more than 150 economies.

Advanced Economies Group

Advanced economies are projected to grow at 1.8% in CY26 and 1.7% in CY27, indicating a stable yet moderate expansion as the impact of tight monetary policies and trade frictions gradually eases. In the **United States**, growth is forecast at about 2.4% in CY26 and 2.0% in CY27, supported by fiscal measures and lower interest rates, while technology momentum moderates and both immigration and consumption slow down. The **Euro Area** growth is expected to remain steady at 1.3% in CY26 and 1.4% in CY27, reflects projected increases in public spending. However, with the subdued growth rate reflecting unresolved structural headwinds the projections largely remain unchanged from October 2025.

Emerging Market and Developing Economies Group

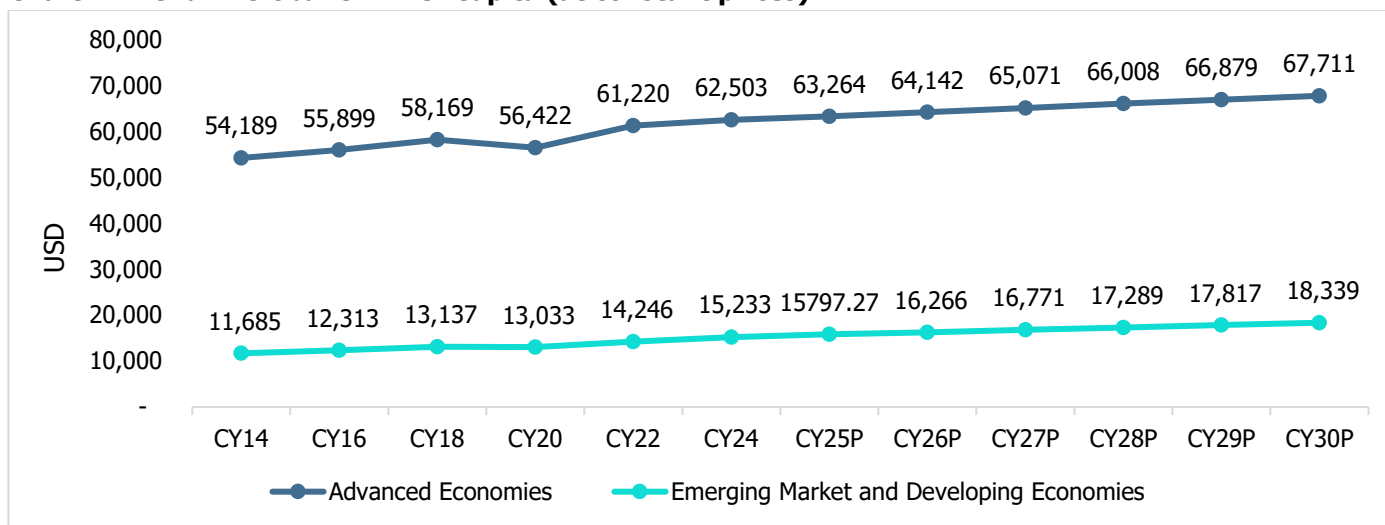
Emerging and developing economies are expected to grow at around 4.4% in CY26 and 4.2% (150 countries) in CY27, maintaining steady momentum supported by resilient domestic demand and improving trade dynamics. Growth in emerging and developing Asia is projected at 5.0% in CY26 and 4.8% in CY27, reflecting robust regional performance. **China's** growth remains steady at around 4.5% in CY26 and 4.0% in CY27, aided by easing tariff pressures, helped by lower effective US-China tariff rates than previously assumed due to yearlong trade truce being agreed to and sustained domestic activity. **India's** growth has been revised upward by 0.7 percentage points, with an estimate of 7.3% in CY25 and projections moderate to 6.4% in CY26, driven by strong private consumption and continued policy support.

Despite the turmoil in the last 2-3 years, India bears good tidings to become a USD 5 trillion economy by CY27-CY28. According to the IMF dataset on Gross Domestic Product (GDP) at current prices, the nominal GDP is estimated to be at USD 4.2 trillion for CY25 and is projected to reach USD 5.1 trillion by CY27 and USD 6.8 trillion by CY30. India's expected GDP growth rate for the coming years is almost double compared to the world economy. The Indian economy shows resilience amid global inflation, supported by a stable financial sector, strong service exports, and robust investment driven by government spending and high-income consumer consumption, positioning it for better growth than other economies.

Besides, India stands out as the fastest-growing economy among the major economies. The country is expected to grow at a range of 6.4%-6.5% in the period of CY26-CY30, outshining China's growth rate. By CY27, the Indian economy is estimated to emerge as the third-largest economy globally, surpassing Japan and Germany. Currently, it is the third largest economy globally in terms of Purchasing Power Parity (PPP) with an 8.5% share in the global economy, with China at the top followed by the United States.

For the period of CY14 to CY24, GDP per capita for Emerging Market and Developing Economies has grown at a CAGR of 2.7%, higher than the CAGR growth of 1.4% for Advanced Economies. This growth is also expected to sustain in the future, with GDP per capita in Emerging Market and Developing Economies expected to grow at a CAGR of 2.9%, higher than the CAGR growth of 1.3% for Advanced Economies between CY24 and CY30. Emerging Markets and Developing Economies continue to outpace the expansion in Advanced Economies.

Chart 2: Trend in Global GDP Per Capita (at constant prices)



Source: IMF – World Economic Outlook Database (October 2025); Notes: P-Projection

India continues to remain the fastest-growing economy, even as global growth falters

Since the liberalisation reforms of the early 1990s, India’s economy has undergone a significant transformation, emerging as one of the world’s fastest-growing major economies. The following years saw substantial expansion in key sectors such as IT services, telecommunications, and manufacturing. Despite facing challenges like the global financial crisis, which tested its resilience, India managed to recover and sustain growth. More recently, the impact of the imposition of US tariffs has introduced volatility; however, India continues to be a vital contributor to global economic activity. The stability of its financial sector, combined with strong investment and buoyant private consumption, particularly among higher-income groups, has reinforced this resilience. This trend indicates that while economic growth may experience fluctuations in the short term, India’s long-term trajectory remains consistent and promising, driven by structural reforms and increasing integration into the global market.

During the COVID-19 shock, India saw a sharp contraction in output in CY20, but this was followed by a strong rebound, with real GDP growing by 9.2 per cent in CY23, taking overall activity back above pre-pandemic levels. This recovery, supported by targeted fiscal and monetary measures, a relatively resilient agricultural sector and a quick turnaround in external demand, allowed India to close its pandemic-induced output gap earlier than many advanced economies, where GDP and labour market conditions normalised more gradually, reinforcing its position as one of the more resilient major economies in the post-pandemic period.

India stands out as the fastest-growing economy amongst the major economies and is expected to grow at more than 6.4% in the period of CY25-CY30, outshining China’s growth rate. By CY28, the Indian economy is estimated to emerge as the third-largest economy globally, surpassing Japan and Germany. Currently, as of CY24, it is the third-largest economy globally in terms of Purchasing Power Parity (PPP) with an 8.5% share in the global economy, with China 19.5% at the top, followed by the United States 14.9%.

India is increasingly becoming an open economy as well through growing foreign trade. India’s resilience is mainly supported by a stable financial sector backed by well-capitalised banks and the export of services in the trade balance. In the future, the Indian economy is expected to grow better than other economies, mainly on account of strong investment activity bolstered by the government’s capex push and buoyant private consumption, particularly among higher-income earners.

Easing inflationary environment across major economies

Since 2022, global inflation has been on a declining trajectory after surging due to COVID-related supply disruptions and the geopolitical shocks from the Russia-Ukraine war. In advanced economies, inflation peaked at 7.3% in CY22 but has since moderated to 2.6% in CY24, with further decline projected to stabilise around 2.1% by CY30. In the **Euro Area**, where energy prices were a major inflation driver, inflation dropped from 8.4% in CY22 to 2.4% in CY24, prompting the European Central Bank to begin easing monetary policy, cutting rates to 2.25% in April 2025. Similarly, the **U.S.** has started a cautious rate-cutting cycle amid easing inflation, which stood at 3.0% in CY24, with the Federal Reserve maintaining rates at 4.25–4.5% as of March 2025.

China has continued to experience exceptionally low inflation, reaching just 0.2% in CY24, with persistent deflationary concerns driven by weak domestic demand and housing sector stress. The People's Bank of China has responded with rate cuts to stimulate growth. In contrast, **India** has seen elevated inflation, at 4.7% in CY24, though it has started declining from the 6.7% peak in 2022. The Reserve Bank of India has kept policy rates steady at 5.25% after strategic hikes in previous years, maintaining a disinflationary stance amid ongoing food price volatility.

Table 2: Inflation Rate Trend

	Inflation Rate (in %)											
	CY14	CY16	CY18	CY20	CY22	CY24	CY25P	CY26P	CY27P	CY28P	CY29P	CY30P
India	5.8	4.5	3.4	6.2	6.7	4.7	4.2	4.1	4.0	4.0	4.0	4.0
China	2.0	2.0	2.1	2.5	2.0	0.2	0.0	0.6	1.4	1.8	1.9	2.0
Indonesia	6.4	3.5	3.3	2.0	4.1	2.3	1.7	2.5	2.5	2.5	2.5	2.5
Saudi Arabia	2.2	2.1	2.5	3.4	2.5	1.7	2.0	2.0	2.0	2.0	2.0	2.0
Brazil	6.3	8.7	3.7	3.2	9.3	4.4	5.3	4.3	3.4	3.0	3.0	3.0
Euro Area*	0.4	0.2	1.8	0.3	8.4	2.4	2.1	1.9	2.0	2.0	2.0	2.0
United States	1.6	1.3	2.4	1.3	8.0	3.0	3.0	2.5	2.1	2.2	2.2	2.2

Source: IMF- World Economic Outlook Database (April 2025); Note: P- Projections, Euro Area* includes 20 member states of the European Union.

1.3 China +1 and Europe +1 strategy

China plus one strategy - In the 1990s, many global manufacturing companies from regions like the US and Europe relocated their production facilities to China, drawn by its favourable production conditions, establishing the country as the hub of the global supply chain. However, in 2021, a surge in global demand following the COVID-19 pandemic, coupled with China's zero-COVID policy and ensuing supply chain disruptions, created challenges for manufacturers in meeting demand. This has prompted businesses to consider diversifying their operations and investments away from China to alternative locations. This shift presents a significant opportunity for India, supported by its expansive manufacturing base, competitive production advantages, robust business ecosystem, and supportive government policies. These factors position India well to capitalise on this trend, driving growth in exports for various industries.

In Europe, manufacturing preferences are also evolving due to high energy costs, labour shortages, and the need for more resilient supply chains following disruptions from the pandemic and geopolitical tensions such as the Russia–Ukraine conflict. Many companies are reconsidering their heavy reliance on Western Europe and seeking cost-efficient yet strategically located alternatives within or near the continent.

As part of the Europe+1 strategy, Central and Eastern European countries such as Poland, Hungary, the Czech Republic, and Romania are becoming attractive destinations due to their proximity to major EU markets, established industrial bases, and relatively lower operating costs. Additionally, countries like Turkey and Morocco are benefiting from their

geographic advantage and growing manufacturing ecosystems, making them key partners in strengthening Europe's regional production networks.

For India, these global realignments in manufacturing strategies, both under the China + 1 and Europe + 1 approaches, are expected to create a new avenue for investment and production expansion. India's improving infrastructure, skilled workforce, large domestic market, and targeted policy initiatives such as the Production-Linked Incentive Scheme (PLI) make it a compelling alternative for companies seeking to diversify their supply chains.

This growing confidence in India's manufacturing capabilities is attracting sectors, further positioning India as a pivotal node in the re-defined global manufacturing and export landscape.

1.4 Recent U.S. Tariff Actions: Global Repercussions and India's Strategic Position

Recent developments in global trade policy have significantly reshaped tariff dynamics between the United States and its major trading partners, including India. In early 2026, the United States' earlier reciprocal tariff framework faced a major legal setback after the U.S. Supreme Court struck down the administration's authority to impose certain emergency tariffs. Following this ruling, Washington temporarily introduced a uniform tariff of around 10 percent on imports from most countries while it works on designing a new global tariff architecture.

Against this backdrop, India and the United States have been negotiating a bilateral trade agreement aimed at expanding market access and strengthening economic cooperation. However, the formal signing of the agreement has been postponed, as India has indicated that it will finalise the deal only after the United States clarifies its revised global tariff framework. Both governments continue discussions on the details of the pact, suggesting that negotiations remain active despite the delay.

At the same time, the United States has intensified its trade scrutiny of several economies through new investigations under Section 301 of the U.S. Trade Act of 1974. In March 2026, the U.S. Trade Representative launched investigations into trade practices and manufacturing overcapacity across 16 economies, including India, China, Japan, the European Union, and several Southeast Asian countries. These investigations could potentially lead to targeted tariffs or other trade measures if unfair practices are identified.

Despite these developments, India continues to occupy a relatively favourable position in the evolving global trade environment. India maintains strong trade relations with the United States and remains an increasingly attractive destination for global manufacturing and supply-chain diversification. As multinational firms seek to reduce reliance on China and mitigate geopolitical risks, India has emerged as a key alternative production base, particularly in sectors such as pharmaceuticals, electronics, and advanced manufacturing.

Parallel to these developments, India has also strengthened its global trade partnerships through agreements with other major economies. Notably, the India-European Union Free Trade Agreement signed in January 2026 aims to expand market access and reduce tariffs across a wide range of goods and services, further integrating India into global trade networks.

Overall, while the global trade environment remains uncertain due to shifting tariff policies and ongoing investigations, India's expanding trade partnerships, growing manufacturing capacity, and strategic geopolitical alignment position it as an important participant in the evolving global economic order.

Impact of Geopolitical Factors

Global geopolitical developments continue to influence India's packaging industry and broader manufacturing ecosystem. Ongoing geopolitical tensions, including conflicts in Europe and the Middle East and trade frictions between major economies, have disrupted global supply chains and contributed to volatility in commodity and energy prices.

These fluctuations particularly affect the packaging sector, as crude oil derivatives serve as essential raw materials for plastics, flexible packaging, and other polymer-based materials. Rising prices of petrochemical inputs such as resins, polymers, and inks have increased production costs for packaging manufacturers.

However, India's packaging industry has demonstrated resilience due to strong domestic demand and the gradual localisation of supply chains. As multinational companies diversify their production bases and expand manufacturing operations in India, demand for packaging materials has increased across industries such as consumer goods, pharmaceuticals, and electronics. This shift has encouraged Indian packaging firms to expand capacity, adopt advanced manufacturing technologies, and invest in sustainable packaging solutions to meet evolving global and domestic market requirements.

The ongoing conflict involving the United States, Israel, and Iran has created uncertainty in global energy and trade markets, mainly due to risks around oil supply through the Strait of Hormuz. This has led to a rise in crude oil prices, increasing costs across the petrochemical value chain. As PET and plastic packaging are derived from crude, higher feedstock prices, such as naphtha and polymers, have raised overall packaging costs.

For packaging companies, this has resulted in moderate margin pressure and higher working capital needs due to increased logistics and inventory costs. In India, dependence on imported crude and intermediates adds to cost challenges, but shifting global supply chains also creates opportunities for domestic manufacturers to strengthen exports and reduce reliance on traditional Middle East suppliers.

A gas shortage can affect the plastic packaging industry by increasing costs and creating supply issues. India depends significantly on imported natural gas, so any disruption can impact availability and prices. Gas is used in making and processing plastic materials, so a lower supply can slow production and raise raw material costs, making packaging more expensive over time.

2 Overview of the Indian Economy

2.1 Commentary on the macroeconomic overview of the Indian economy

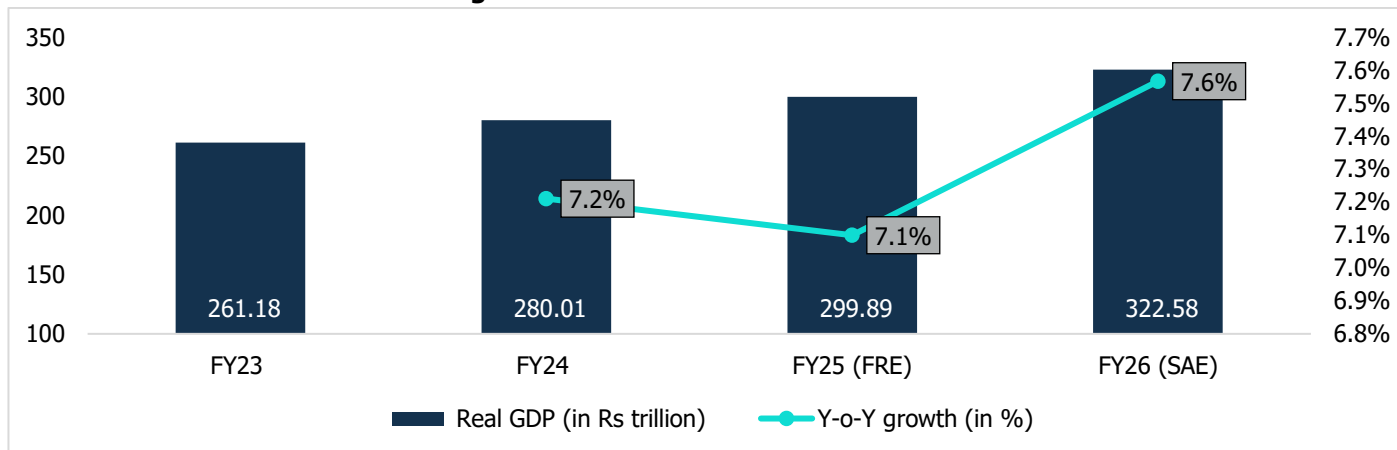
2.1.1 GDP Growth and Outlook

Resilience to External Shocks remains Critical for Near-Term Outlook

India’s economy continues to show rapid growth. For FY26, GDP is expected to grow by 7.4%, supported by rising rural demand, better job opportunities, and active business conditions.

In FY25, provisional estimates show a growth of 7.1% (Rs 299.09 trillion), led by robust performance in manufacturing, construction, and financial services. Consumer spending rose by 7.6%, and government spending increased by 3.8%, both contributing to the overall growth. In FY23, the GDP grew by 261.18 trillion, followed by 7.2% (Rs 280.01 trillion) in FY24.

Chart 3: Trend in Real Indian GDP growth rate



Source: MOSPI, RBI;

Note: FRE- First Revised Estimates, SAE- Second Advanced Estimates;

The trend for FY23-FY26 is based on new series base year 2022-23.

GDP Growth Outlook (February 2026)

FY26 GDP Outlook: The RBI projects real GDP growth at 7.4% for 2025–26, driven by the industrial and services sectors. The upward trajectory of growth is also due to income tax and goods and services tax (GST) rationalisation, softer crude oil prices, an increase in government capital expenditure, and facilitative monetary and financial conditions, lower inflation rates.

However, risks from prolonged geopolitical tensions, global trade disruptions, and weather-related uncertainties remain. Taking these into account, the RBI has reaffirmed its growth projections.

Table 3: RBI's GDP Growth Outlook (Y-o-Y %)

FY26P (complete year)	Q1FY27P	Q2FY27P
7.4%	6.9%	7.0%

Source: Reserve Bank of India; Note: P-Projected

Consumer Price Index

The Consumer Price Index (CPI) for January 2026 recorded a combined inflation rate of 2.75%, there was an increase of 36 basis points in January 2026 from December 2025 in inflation. The y-o-y food and housing inflation for the month of January is 2.13% and 2.05% respectively.

Table 4: Retail Price Inflation in terms of index and Y-o-Y Growth in % (Base: 2011-12=100)

Year	Index number	Y-o-Y growth in %
FY19	139.61	3.4%
FY20	146.27	4.8%
FY21	155.28	6.2%
FY22	163.83	5.5%
FY23	174.73	6.7%
FY24	184.10	5.4%
FY25	192.70	4.7%
FY26 YTD	103.31	
Jan-Feb'25	104.52	
Jan'-Feb'26	101.50	-2.9%

Source: MOSPI

Note: The base year for FY26 YTD has been revised to 2024, while prior years remain on the 2012 base; the January-February 2025 and 2026 figures are also reported on the 2024 base

The CPI is primarily factored in by RBI while preparing their bi-monthly monetary policy. At the bi-monthly meeting held in February 2026, RBI projected inflation at 2.1% for FY26, with inflation during Q4FY26 at 3.2%, Q1FY27 at 4.0%, and Q2FY27 at 4.2%. Considering the current inflation situation, the RBI has maintained the repo rate at 5.25% in the February 2026 meeting of the Monetary Policy Committee.

Table 5: RBI historical Repo Rate

Month	Repo End-period rate (%)
Dec-23	6.5
Feb-24	6.5
Apr-24	6.5
Jun-24	6.5
Aug-24	6.5
Oct-24	6.5
Dec-24	6.5
Feb-25	6.25
Apr-25	6
Jun-25	5.5
Aug-25	5.5
Oct-25	5.5
Dec-25	5.25
Feb-26	5.25

Source: RBI

The RBI maintained a 'neutral' monetary policy stance, continuing to signal confidence that India's economic growth would remain resilient, underpinned by robust private consumption and sustained expansion in fixed capital formation, while also emphasising persistent external risks. The domestic demand conditions remain supportive even as global uncertainties prevail. On trade policy, the temporary pause on US tariff increases concluded in August 2025, and higher duties on certain Indian exports have since taken effect, although bilateral trade talks continue to manage tariff-related tensions.

The RBI has adopted for a non-inflationary growth with the foundations of strong demand and supply with a good macroeconomic balance. The domestic growth and inflation curve requires the policies to be supportive with the volatile trade conditions.

2.1.2 Current Account Deficit

India's current account deficit narrowed to 0.2% of GDP in Q1FY26 from 0.9% in Q1FY25. This was supported by strong services exports and robust remittances, keeping India the world's largest recipient of private remittances.

The Current Account Deficit (CAD), which reflects the difference between a country's total foreign income and expenditures, is a key indicator of the strength of a nation's external sector. Between FY20 and FY24, India's Current Account Deficit (CAD) exhibited a current account surplus in FY21, attributed to reduced import absorption amid GDP contraction. India's CAD widened post FY21 from 1.2% in FY22 to USD 67 billion, or 2% of GDP in FY23. However, the trend reversed in FY24, with the deficit narrowing to USD 31.1 billion, or 0.7% of GDP and further dropping to 0.6% in FY25. This reduction was driven by a decrease in the merchandise trade deficit, a rise in net services exports, and increased remittances. Robust global demand for India's service sectors, including IT, accountancy, and legal services, played a crucial role in this positive shift.

Table 6: Current Account Deficit as a percentage of GDP (%)

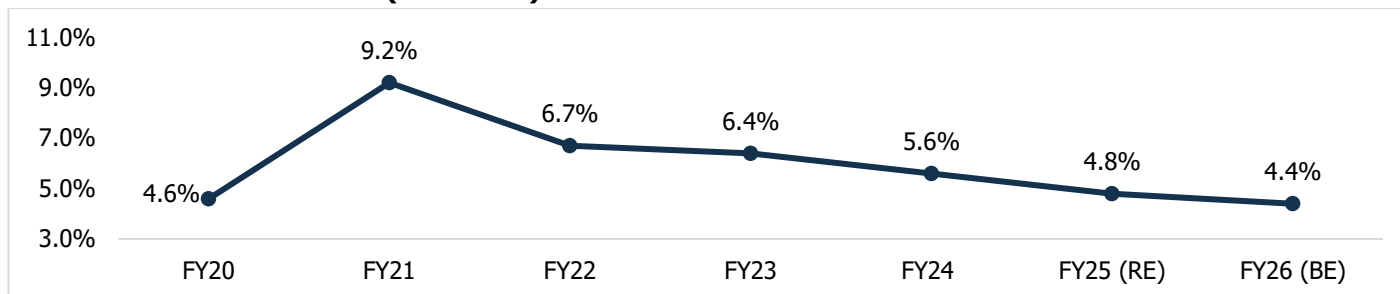
Year	CAD as a % of GDP
FY20	-0.90%
FY21	0.90%
FY22	-1.20%
FY23	-2.00%
FY24	-0.70%
FY25	-0.60%
Q1FY25	-0.90%
Q1FY26	-0.20%

Note: Source: RBI

2.1.3 Fiscal Deficit (as a % of GDP)

In FY21, India's fiscal deficit was 9.2% due to the impact of COVID-19; since then, it has seen a steady improvement is expected to reduce to 4.8% of GDP in FY25 (RE), driven by strong economic growth and higher tax and non-tax revenues. The government aims for further fiscal consolidation, setting a target of 4.4% of GDP for FY26 to maintain fiscal prudence.

Chart 4: Gross Fiscal Deficit (% of GDP)

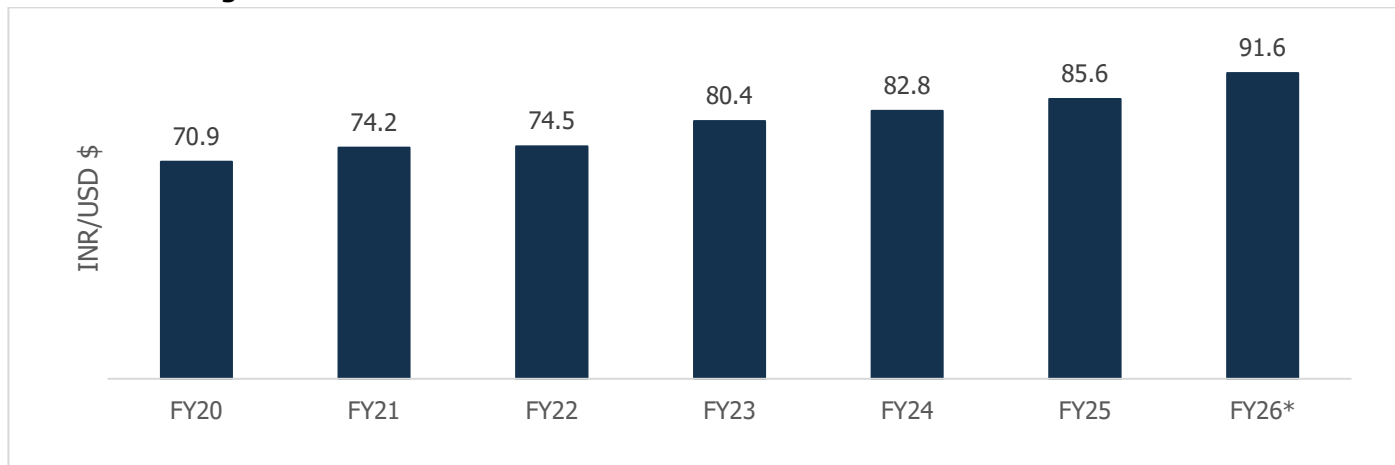


Source: RBI; Note: RE-Revised Estimates, BE-Budget Estimates

2.1.4 Exchange Rates

In FY26, the rupee continued to face depreciation pressures, with the RBI actively defending it near record lows as external headwinds and risk aversion persisted. In FY25, the Indian rupee came under renewed pressure amid sustained foreign portfolio outflows and a stronger US dollar, prompting the RBI to conduct record levels of forex intervention to limit volatility. In FY23 and FY24, the Indian rupee faced significant pressure due to geopolitical tensions, particularly the conflict between Israel and Hamas, which drove investors towards the safety of the US dollar. Additionally, seasonal factors during the festive period, such as higher imports of gold, consumer goods and energy, tend to increase demand for foreign currency, thereby exerting further downward pressure on the rupee and contributing to its depreciation. Over the past two decades, the rupee has depreciated more sharply against the US dollar than against the currencies of India’s broader trading partners. Specifically, it has fallen by about 45.7% against the US dollar, compared with a 32.2%-40.2% depreciation against the currencies of India’s major trade partners. This indicates that a significant part of the rupee’s decline reflects US dollar strength rather than a pronounced loss of competitiveness of the rupee against other major currencies.

Chart 5: Exchange Rate Trend



Source: RBI; Note: Exchange rate is as on the last date of the financial year, FY26* exchange rate is as on 26th January 2026.

2.1.5 Gross Value Added (GVA)

Gross Value Added (GVA) is the measure of the value of goods and services produced in an economy. GVA gives a picture of the supply side whereas GDP represents consumption. India’s recovery in FY25 was powered by a broad-based rebound across sectors. The gap between GDP and GVA growth stood at 0.1 percentage point in FY25, with GDP growing at 7.2% and GVA at 7.3%, as per MoSPI’s provisional estimates released in March 2026.

In FY26 (FAE), real GVA growth of 7.7% is primarily led by manufacturing, Trade, Repair, Hotels, Transport, communication, and services related to Broadcasting, Storage. Industry is estimated at 8.8%, supported by a pickup in manufacturing and construction (11.5% and 7.1% respectively).

Table 7: Sectoral Growth (Y-o-Y % Growth) - at Constant Prices

At constant Prices	FY24 (FRE)	FY25 (PE)	FY26 (FAE)
Agriculture, Forestry & Fishing	2.6	4.2	2.4
Industry	10.9	8.3	8.8
Mining & Quarrying	2.4	11.7	4.1
Manufacturing	12.7	9.3	11.5
Electricity, Gas, Water Supply & Other Utility Services	10.7	2.9	1.5
Construction	9.9	7.3	7.1
Services	7.0	7.9	9.0
Trade, Hotels, Transport, Communication & Broadcasting	10.1	6.6	10.1
Financial, Real Estate & Professional Services	5.5	10.0	9.9
Public Administration, Defence and Other Services	6.8	5.0	5.8
GVA at Basic Price	7.2	7.3	7.7

Source: MOSPI; Note: FRE- First Revised Estimates, SAE – Second Advanced Estimates; The trend for FY24-FY26 is based on new series base year 2022-23.

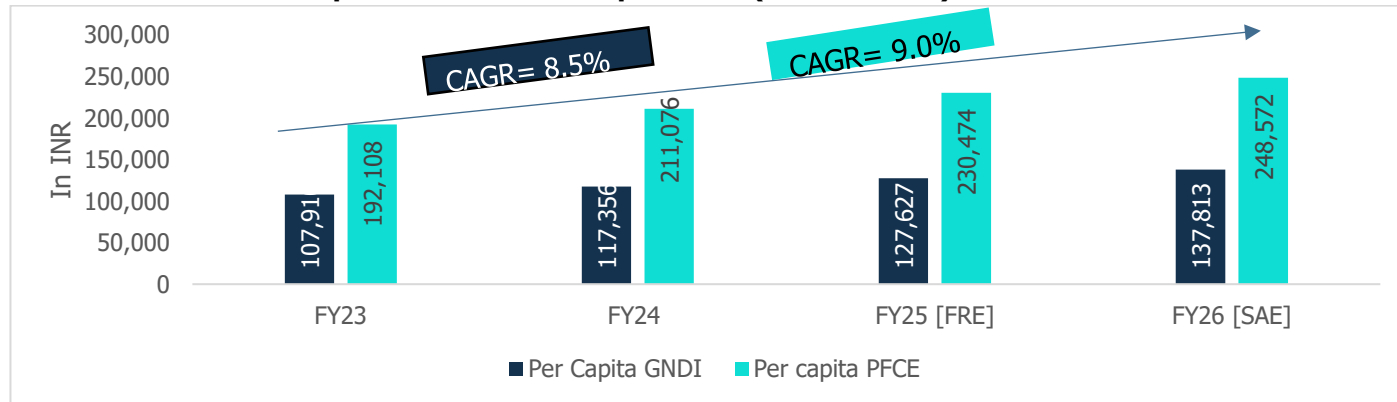
2.1.6 Per capita PFCE and GNDI

• **Increasing Disposable Income and Consumer Spending**

Gross National Disposable Income (GNDI) is a measure of the income available to the nation for final consumption and gross savings. Between the period FY23 to FY26, per capita GNDI at current prices registered a CAGR of 8.5%. More disposable income drives more consumption, thereby driving economic growth.

With increase in disposable income, there has been a gradual change in consumer spending behaviour as well. Per capita Private Final Consumption Expenditure (PFCE), which is a measure of consumer spending, has also showcased significant growth from FY23 to FY26 at a CAGR of 9.0%.

Chart 6: Trend of Per Capita GNDI and Per Capita PFCE (Current Price)



Source: MOSPI; Note: FRE – First Revised Estimates, SAE- Second Advanced Estimates The trend for FY23-FY26 is based on new series base year 2022-23.

2.1.7 Industrial Activity

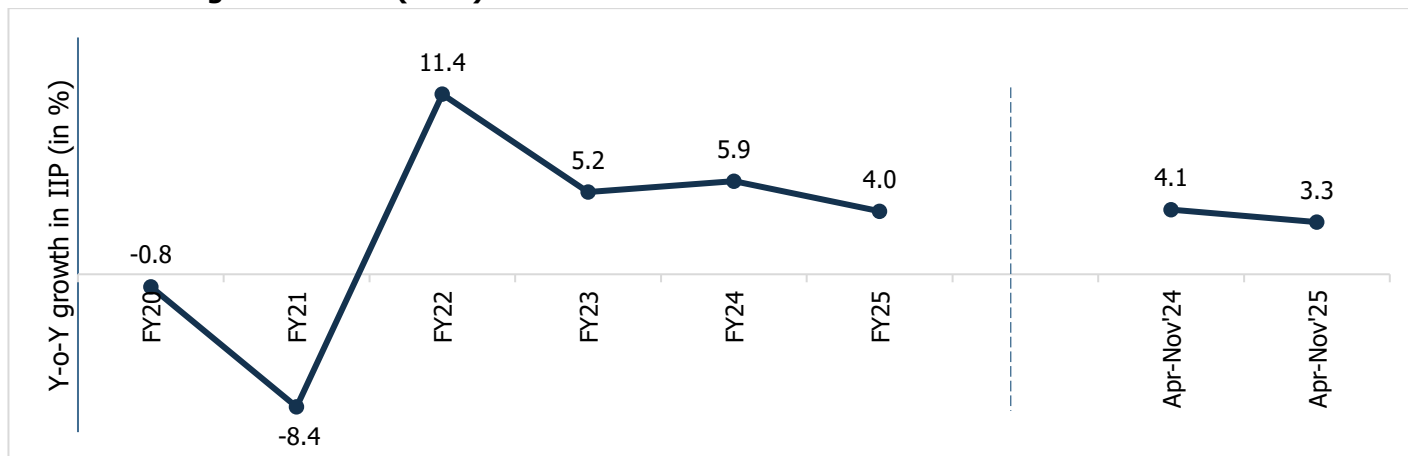
2.1.7.1 Industrial Growth

The Quick Estimates of the Index of Industrial Production (IIP) for November 2025 show a growth of 6.7%, an increase from 5.0% from November 2024. The year-on-year decline in IIP reflects weakness across major segments, primarily due to contractions in electricity, mining, and consumer non-durables.

In November 2025, industrial growth was mainly supported by Mining, Manufacturing and Electricity sectors with indices standing at 141.0, 158.8 and 181.3, respectively.

Use-based indices indicate the top three positive contributors to the growth of IIP for the month of November 2025 are Infrastructure/ construction goods, Intermediate goods and Consumer non-durables.

Chart 7: Y-o-Y growth in IIP (in %)

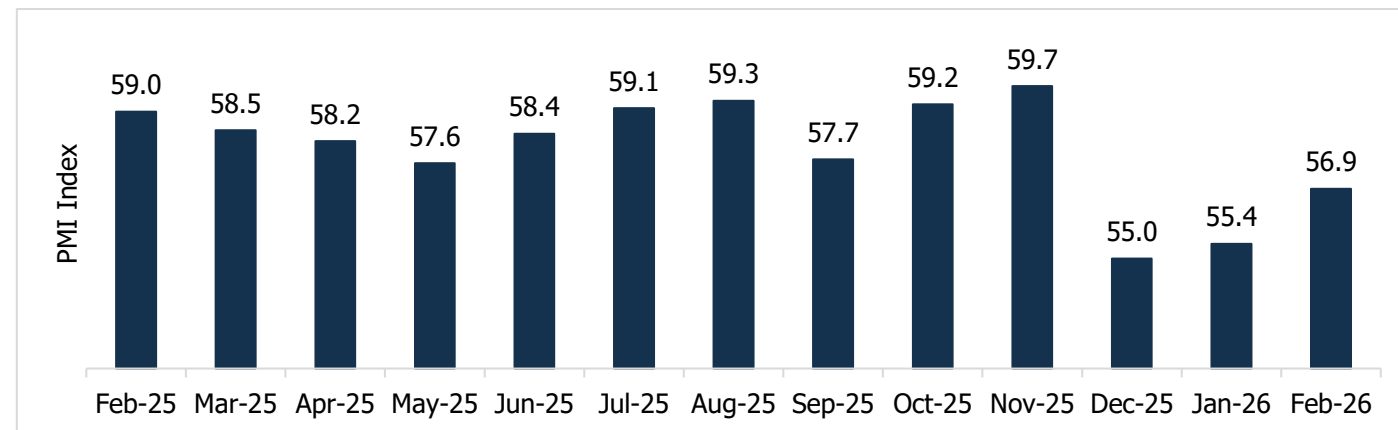


Source: MOSPI

2.1.7.2 Purchasing Managers' Index (PMI)

India's manufacturing sector stayed strong over the past year, with PMI consistently showing growth. Activity picked up around late 2024 and mid-2025 but eased a bit by September 2025 as demand softened. Steady domestic demand kept factories busy, though export orders slowed due to global uncertainty and trade pressures. Rising costs and price increases also weighed slightly on business sentiment. Overall, the sector remains on solid ground, even as growth has started to cool a little in recent months.

Chart 8: PMI



Source: HSBC, S&P Global

2.2 Manufacturing Sector's Contribution to GVA

Table 8: Manufacturing Sector's Contribution to GVA

Numbers in (INR Trillion)	FY23	FY24	FY25	FY26
Manufacturing	34.82	39.25	42.89	47.84
GVA	237.64	254.81	273.36	294.40
Contribution to GVA	14.7%	15.4%	15.7%	16.2%

Source: MOSPI; advanced Estimates;

The trend for FY23-FY26 is based on new series base year 2022-23.

India's manufacturing sector at an average of 15.50% of GVA from FY23-FY26, reflecting modest output growth amid initial backing from the early "Make in India". In FY23, a significant policy boost arrived via Production-Linked Incentive (PLI) schemes and "Atmanirbhar Bharat" drives, leading to a sharp rise in manufacturing output that elevated its GDP share to 13.3%. A level sustained through the FY24 and FY25 projections. This jump came from targeted growth in sectors such as electronics, autos, pharmaceuticals, and textiles, accompanied by higher FDI and improved infrastructure, signalling a structural shift toward a more industrialised economy poised to reach long-term manufacturing goals.

Table 9: Manufacturing Sector's Contribution to GDP

Numbers in (INR Trillion)	FY23	FY24	FY25	FY26
Manufacturing	34.82	39.25	42.89	47.84
GDP	261.18	280.01	299.89	322.58
Contribution to GDP	13.33%	14.02%	14.30%	14.83%

Source: MOSPI

The trend for FY23-FY26 is based on new series base year 2022-23.

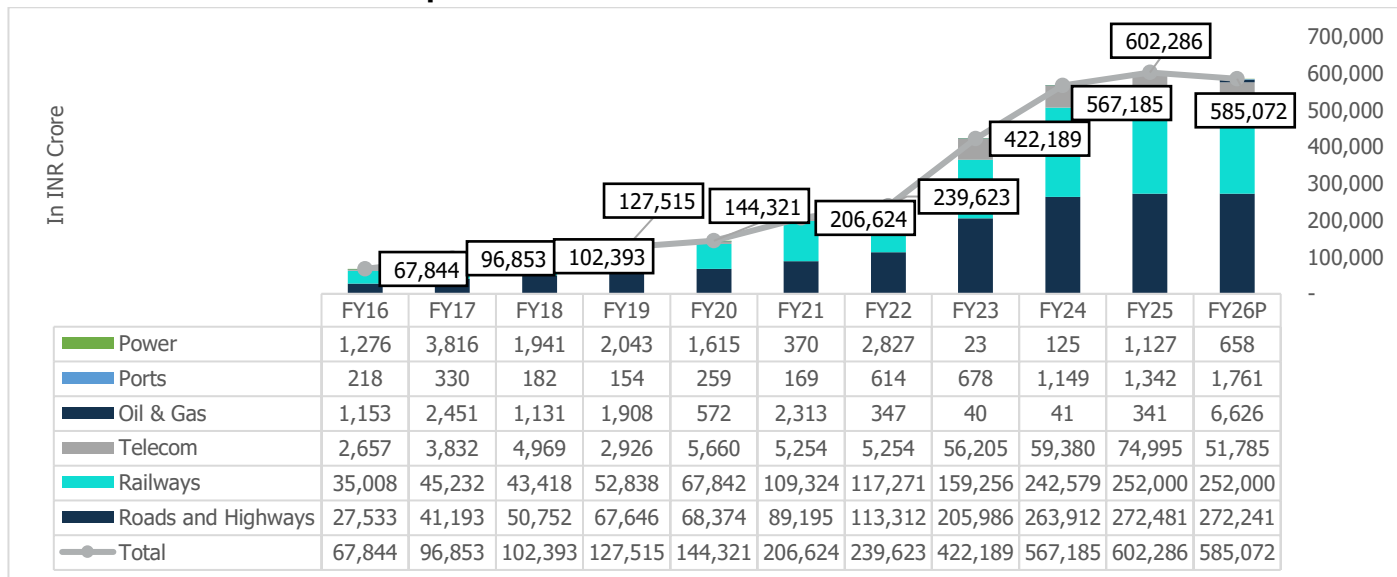
Government Policies towards the Manufacturing and Exports Sector: -

- **Promoting Manufacturing:** The "Make in India" initiative, launched in 2014, aims to establish India as a global manufacturing hub by attracting domestic and foreign investment across various sectors. Central to this is the Production-Linked Incentive (PLI) Scheme, which incentivises companies to boost local production, now expanded to sectors like textiles, auto components, and advanced chemistry cell batteries, generating significant investment and employment.
- **Blueprint for Growth:** The National Manufacturing Mission (2025–26) focuses on simplifying business, developing a skilled workforce, and revitalising MSMEs. The National Industrial Corridor Programme supports integrated industrial zones linked by advanced transport networks to foster planned industrial growth.
- **Liberalising FDI Policies:** India has eased FDI rules across manufacturing sectors, allowing automatic approvals to attract foreign investment and facilitate technology transfer. Over the past two decades, reforms have helped India receive over USD 1 trillion in FDI, enhancing competitiveness and infrastructure.
- **Self-Reliance Campaign (Atmanirbhar Bharat):** This vision promotes building indigenous manufacturing capacity, reducing import dependence, and strengthening self-sufficiency while encouraging global collaboration.

2.3 Budgetary capital expenditure towards Infrastructure

With the growing population, a long-term need for robust infrastructure is necessary for economic development. This generates the need for massive investments in the development and modernisation of infrastructure facilities, which will not only cater to the growing demand but will also ensure competitiveness in the global market.

Chart 9: Indian Government Capex towards infrastructure



Source: Union Budget FY26 document; Note: P- Projected

Some of the key government infrastructure schemes include:

- The government has announced plans for the National Monetisation Pipeline (NMP) and Development Finance Institution (DFI) to improve the financing of infrastructure projects.
- The government has helped the growth of urbanisation through several schemes and projects, including the Smart Cities Mission, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and the Pradhan Mantri Awas Yojana (Urban).

The global construction industry is expected to grow steadily over the coming years, fuelled by rapid urbanisation, modernising infrastructure, and rising demand for housing in developing economies. Emerging markets are likely to drive a significant portion of this growth, supported by expanding populations, rising incomes, and continued government investment in infrastructure. India is expected to become the fastest-growing construction market in the world, backed by strong public and private investments and major government initiatives. The focus on industrial zones and better transport links, along with government-supported redevelopment projects, is likely to boost construction growth. With a stable economy, continued government support, and active private sector involvement, India’s construction market is supposedly set to grow faster than the global average. This highlights its rising importance on the world stage.

2.4 Macroeconomic Factors Driving Packaging Consumption in India

The rigid plastic packaging segment, comprising bottles, containers, jars, Co-Ex bottle caps and closures, has witnessed consistent growth across FMCG, healthcare, and industrial sectors. Demand is being reinforced by innovation in recyclable and lightweight materials, alongside government initiatives promoting sustainable manufacturing. While sustainability challenges persist, India’s demographic strength, urban growth, and evolving consumer preferences position the rigid plastic segment for long-term expansion.



GDP per Capita Growth

Rising Incomes → Premium Preferences

- Higher purchasing power fuels demand for branded, pre-packaged, premium products.
- Shift from cost-focused to value-driven packaging emphasizing quality and convenience.



Urbanization Rate

City Living, Quick Choices

- Urban consumers prefer ready-to-use, convenient packaging.
- Growth of modern retail and quick-service restaurants drives rigid packaging demand.



Expanding Middle Class

Aspirations & Lifestyle Upgrades

- Growing middle class demands durable, hygienic, and attractive packaging.
- Rigid plastics gain popularity for shelf appeal and versatility.



Women's Workforce Participation

City living, Convenient Choices

- Dual-income households drive demand for portable, easy-to-store packaging.
- Expansion in packaged food, beverages, and personal care products.



E-commerce Penetration

Digital Boom → Packaging Boom

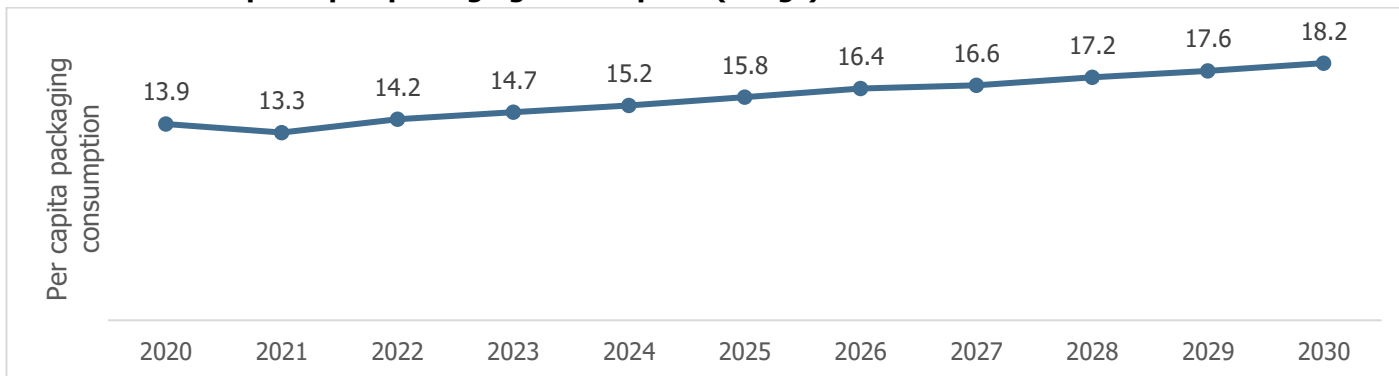
- Online retail drives demand for durable, protective packaging.
- Rigid plastics dominate in grocery, pharma, and FMCG deliveries.

2.5 Per capita packaging consumption

From FY20 to FY30, per-capita packaging consumption in India is projected to rise steadily from 13.9 kg to 18.2 kg. This upward trajectory is mainly due to stronger consumption patterns across sectors and greater market penetration of packaged goods. Key drivers include rising disposable incomes, rapid urbanisation, growth in organised retail and e-commerce, expansion of the food processing and pharmaceutical sectors, and a shift toward value-added, branded products. The packaging industry is also increasingly adopting advanced and sustainable materials, supported by

regulatory drivers and consumer preferences for eco-friendly packaging. While India’s per-capita packaging consumption still lags many mature markets, the steady increase reflects the ongoing structural transformation of consumption and distribution ecosystems.

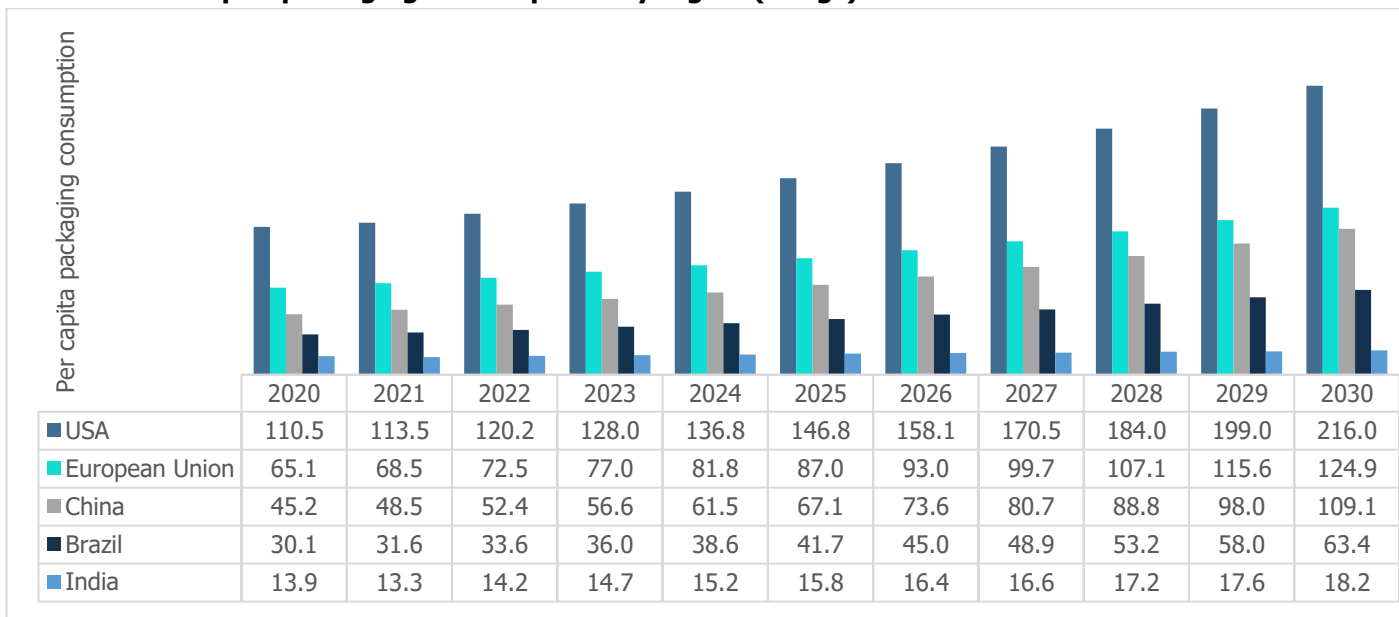
Chart 10: India's per capita packaging consumption (in Kgs)



Source: Cervicorn Consulting, CareEdge Research

Per capita packaging consumption is rising across all regions from FY2020 to FY2030, reflecting growing demand for packaged goods and lifestyle changes. The USA and EU lead with mature, high-volume markets, while China and Brazil show faster relative growth driven by urbanisation and expanding middle classes. India, though starting from a lower base, is witnessing strong structural growth supported by rising incomes, organised retail, and e-commerce expansion. Overall, the global trend highlights increasing packaging intensity alongside a gradual shift toward sustainable materials.

Chart 11: Per capita packaging consumption- by region (in Kgs)



Source: Cervicorn Consulting, CareEdge Research. European Union* consists of 27 countries.

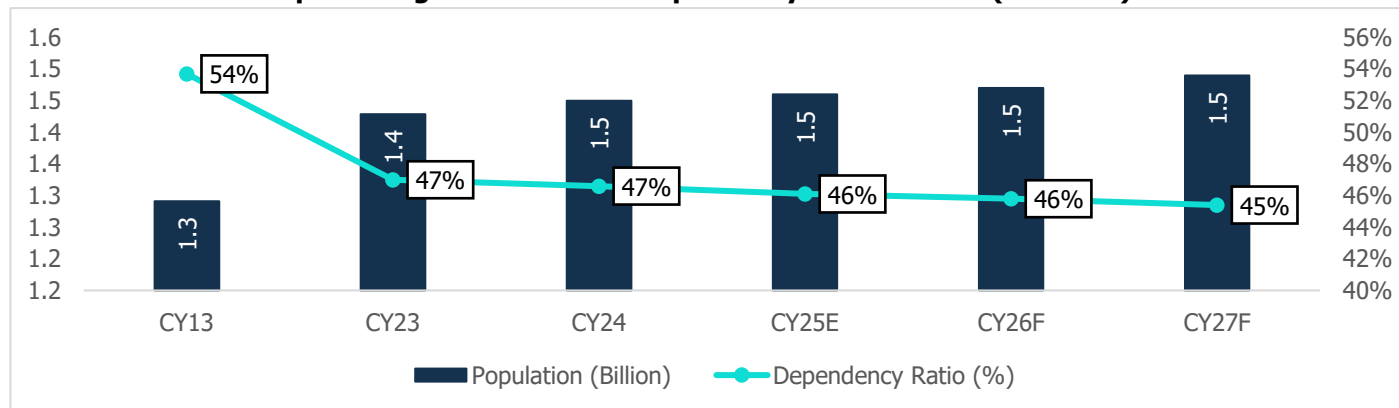
2.6 Overview of Key Demographic Parameters

- **Population Growth and Urbanisation**

The trajectory of economic growth of India and private consumption is driven by socio-economic factors such as demographics and urbanisation. According to the World Bank, India’s population in CY22 surpassed 1.42 billion, slightly higher than China’s population (1.41 billion) and became the most populous country in the world.

Age Dependency Ratio is the ratio of dependents to the working age population, i.e., 15 to 64 years, wherein dependents are the population younger than 15 and older than 64. This ratio has been on a declining trend. Declining dependency means the country has an improving share of working-age population generating income, which is a good sign for the economy. It was as high as 76% in 1983, which has reduced to 47% in CY23. However, this ratio is expected to rise again to 54% by CY36, driven by an increase in the elderly population as life expectancy improves.

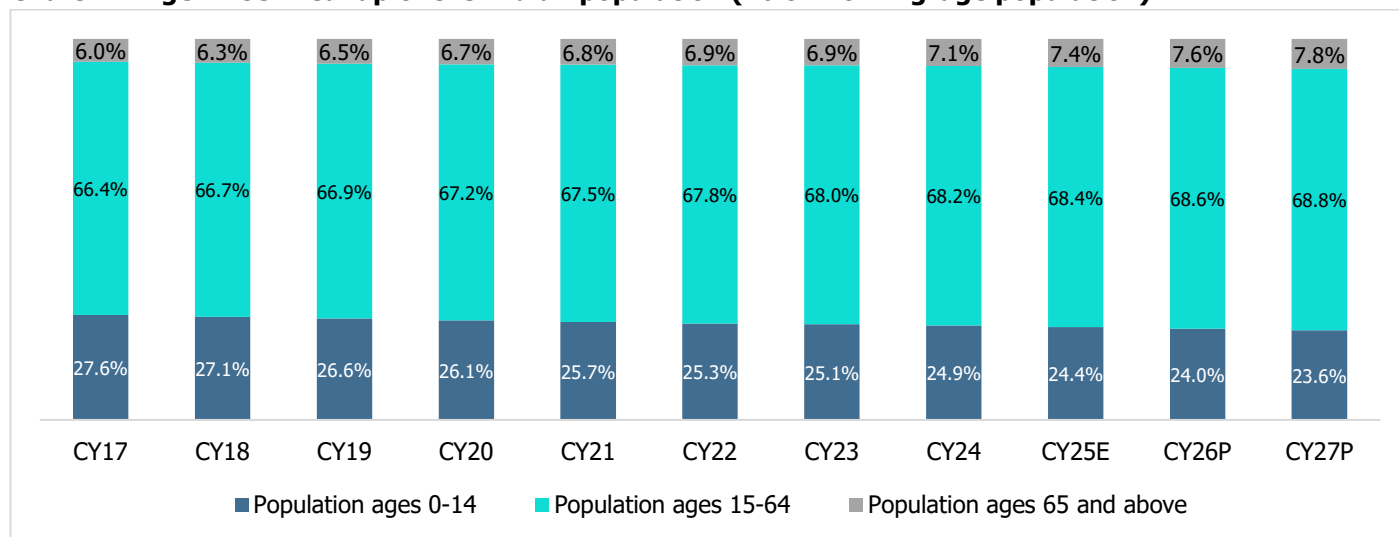
Chart 13: Trend in Population growth vis-à-vis dependency ratio in India (in Billion)



Source: World Bank Database, MOSPI; Note: E- Estimated, F- Forecasted

Despite a projected rise in the dependency ratio to 54% by CY36, India’s young and growing workforce, especially in newly urbanised towns, will continue to drive income growth and consumer demand. This presents strong opportunities for sectors like consumer electronics, transportation, and railways. Rising employment, urbanisation, and government investment in rural development and digital infrastructure will further boost demand, while increased tech adoption supports long-term consumption growth across both urban and rural markets.

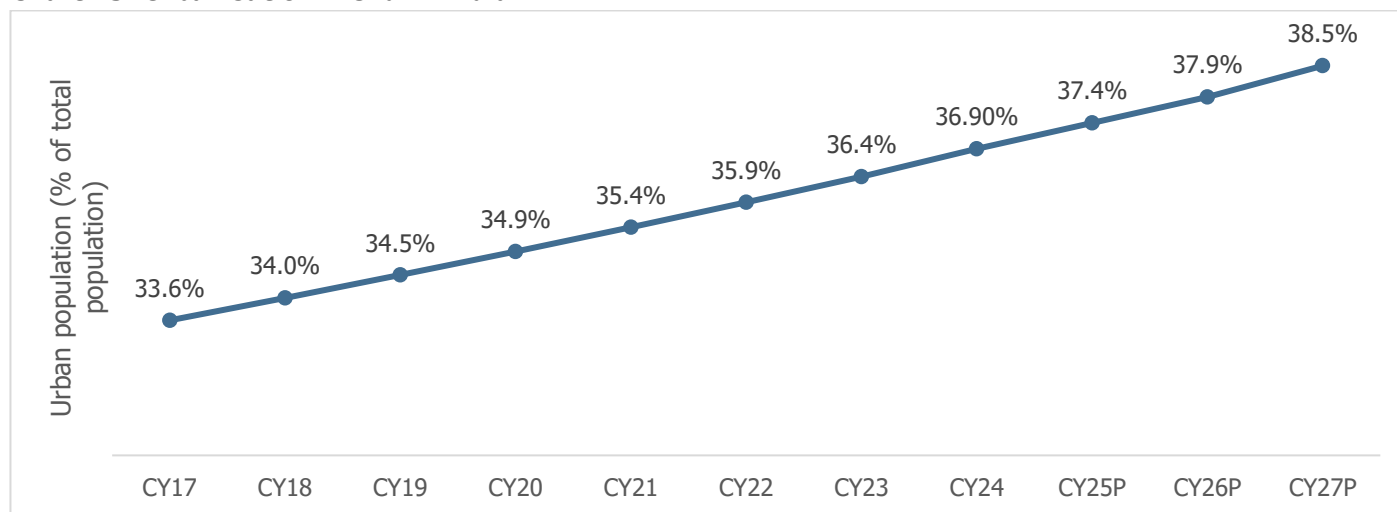
Chart 12: Age-Wise Breakup of the Indian population (% of working-age population)



Source: World Bank Database; Note: E- Estimated, F- Forecasted

The urban population is significantly growing in India. The urban population in India is estimated to have increased from 413 million (32% of the total population) in CY13 to 519.5 million (36.4% of the total population) in the year CY23. India is undergoing a significant urban transformation, with the urban population projected to rise to 40% by CY36. This shift is driven by factors such as improved living standards, increased employment opportunities in urban areas, and government initiatives aimed at urban development. This rapid urbanisation might necessitate substantial investments in infrastructure, housing, and transportation.

Chart 13: Urbanisation Trend in India



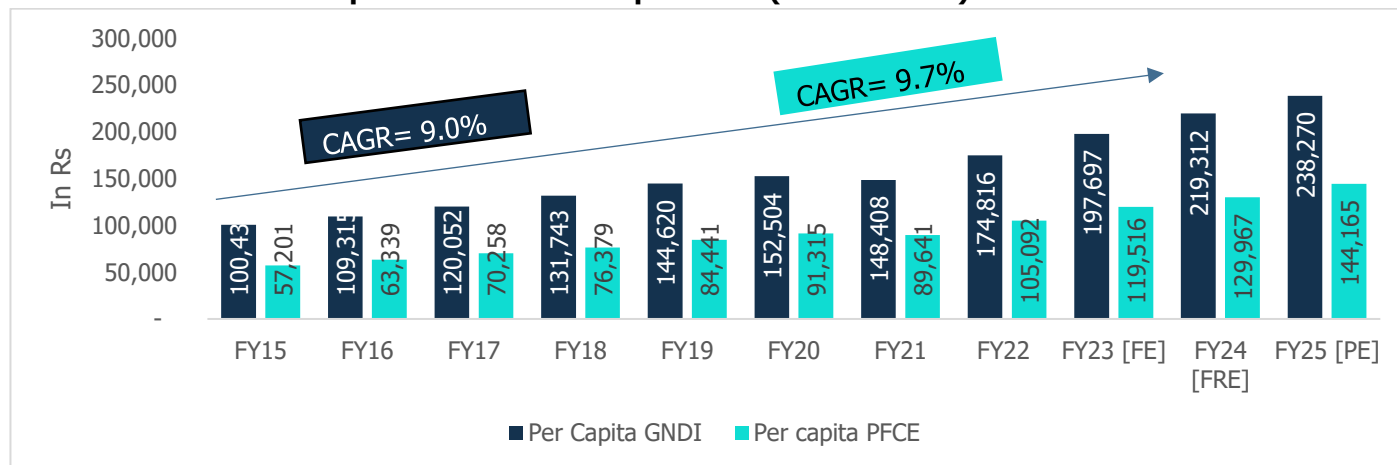
Source: World Bank Database; Note; E- Estimated, F- Forecasted

• Increasing Disposable Income and Consumer Spending

Gross National Disposable Income (GNDI) is a measure of the income available to the nation for final consumption and gross savings. Between the period FY15 to FY25, per capita GNDI at current prices registered a CAGR of 9.0%. More disposable income drives more consumption, thereby driving economic growth.

With an increase in disposable income, there has been a gradual change in consumer spending behaviour as well. Per capita Private Final Consumption Expenditure (PFCE), which is a measure of consumer spending, has also showcased significant growth from FY15 to FY25 at a CAGR of 9.7%.

Chart 14: Trend of Per Capita GNDI and Per Capita PFCE (Current Price)

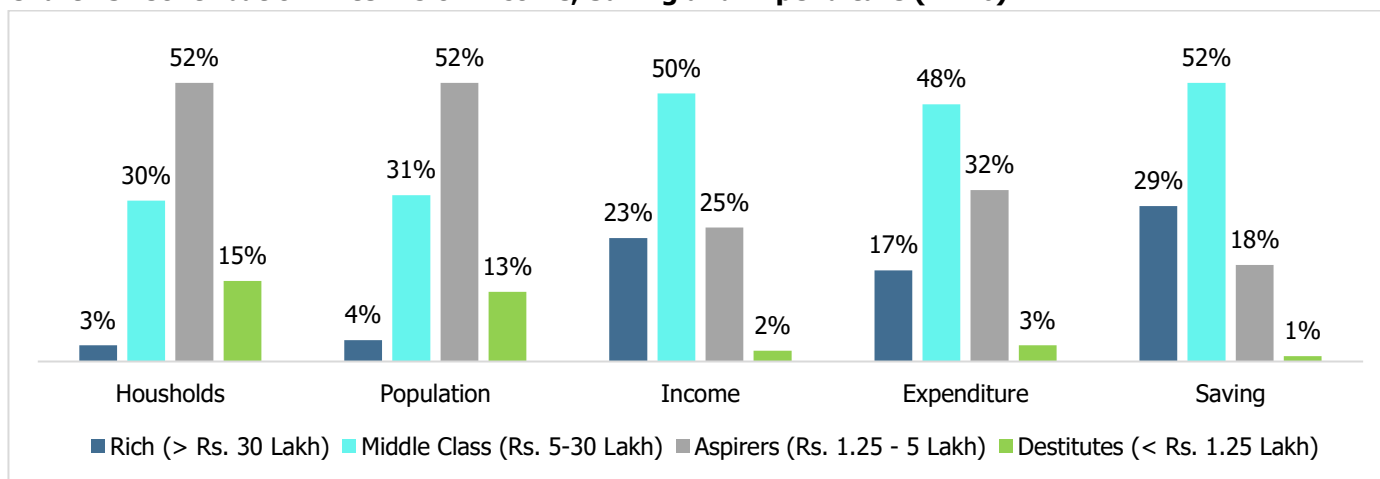


Source: MOSPI; Note: FRE – First Revised Estimates, FE – Final Estimates, PE- Provisional Estimates

2.6.1 Growth of the middle class in India and the rural economy in India

India’s middle-class population is set to grow from 432 million in FY21 to 715 million in FY31, reaching 1,015 million by FY47, surpassing the U.S. and China within this decade. Rising income levels are evident as middle-class households grew at a 4% CAGR from FY16 to FY21 and are projected to represent 47% of households by FY31. High-income households are also expected to grow significantly. This expanding middle and high-income population boosts demand and structurally raises domestic consumption, characterised by higher per-capita spend, premiumisation of product baskets, increased propensity to pay for quality and branded offerings, and a shift from discretionary volatility towards more stable, recurring consumption across goods and services.

Chart 15: Contribution in terms of Income, Saving and Expenditure (In %)



Source: EMIS, People Research on India’s Consumer Economy (PRICE), CareEdge Research

The Indian economy is showing signs of gradual recovery in FY 2024–25, with early indicators suggesting a positive shift in overall economic activity. According to the RBI, a rebound is supported by resilient domestic demand, easing inflation, and an uptick in both urban and rural consumption. Public and private investments in infrastructure, manufacturing, and transportation are also contributing to a more favourable business environment. For companies operating across fast-moving electrical goods (FMEG), consumer durables, and industrial sectors such as transportation and railways, these macroeconomic tailwinds present opportunities for growth across both B2B2C and B2B2B verticals. This boost is supported by a rise in rural savings, marked by growing numbers of savings bank accounts and balances, and a reduction in inflationary pressures, which has allowed rural consumption to catch up with urban areas, complemented by increased government spending on rural development and infrastructure.

The expansion of middle-income households in rural India is transforming the country's economic landscape. This growth is driven by rising incomes, increased discretionary spending, a shift towards online and omnichannel shopping, and advancements in payment and logistics infrastructure. There is also a notable dietary shift in rural areas from carb-based foods to more protein-rich diets. India’s middle class, characterised by significant income variability, exhibits diverse spending patterns. Lower-middle-class households allocate much of their income to private healthcare, education, and essential consumer goods, such as motorbikes and basic appliances. In contrast, the upper-middle class invests in luxury items, entertainment, property, and personal services, with a higher propensity to own assets like cars, computers, and air conditioners. Both segments of the middle class are substantial and emerging as key drivers of consumption and economic growth in India. Policy support for rural incomes includes the rural employment guarantee framework (originating under the 2005 Act), which has historically supplemented rural wage incomes; recent developments relate to payment-system reforms and the proposed/initiated transition to the VB-G RAM G (Viksit Bharat-Guarantee for Rozgar and Ajeevika Mission (Gramin)) framework.

The growing, more inclusive, and politically engaged middle class reflects broader economic growth, although there is a risk of social strain if growth falters and quality job creation does not keep pace.

The India Meteorological Department (IMD) expects a stronger-than-usual southwest monsoon, which should improve crop production and refill water reservoirs, helping boost spending in rural areas. Improvements in agriculture and rural spending are emerging as bright spots in demand conditions. The government's Budget measures, which focus on agriculture, infrastructure, and rural development, aim to increase incomes and revitalise the rural sector. These measures include transforming agricultural research, introducing new crop varieties, promoting natural farming, and enhancing digital infrastructure for agriculture. Successful implementation of these programs, coupled with proper fund allocation, is crucial for improving farm incomes and strengthening supply chains. A shift towards diversified, high-value agricultural production, along with marketing and trade reforms, is needed to foster more inclusive, environmentally friendly, and climate-resilient agriculture.

Despite higher absolute incomes among the wealthy, the sheer size of India's middle class indicates it will become a major force in the economy, creating one of the world's largest markets. This burgeoning middle class, with its growing discretionary spending power, is poised to drive investment, generate employment, and spur further economic growth. Assuming effective reforms are implemented and the middle class expands to over one billion people, its role will be pivotal in India's economic and social fabric, influencing a wide range of activities from consumption to employment and political change.

2.7 Concluding Remarks

Global economic growth faces headwinds from geopolitical tensions, volatile commodity prices, high interest rates, inflation, financial market volatility, climate change, and rising public debt. However, India's economy remains relatively strong, with an IMF forecast of 6.4% GDP growth in CY25 (FY26 according to the fiscal year), compared to the global projection of 3.0%. Key drivers include strong domestic demand, government capital expenditure and moderating inflation.

Public investment is expected to exhibit healthy growth as the government has allocated a strong capital expenditure of about Rs. 11.21 lakh crores for FY26. The private sector's intent to invest is also showing improvement, as per the data announced on new project investments and resilience shown by the import of capital goods. Additionally, improvement in rural demand owing to healthy sowing, improving reservoir levels, and progress in the south-west monsoon, along with the government's thrust on capex and other policy support, will aid the investment cycle in gaining further traction.

The recent 56th meeting of the Goods and Services Tax (GST) Council announced some major changes in the existing GST structure. The focus is majorly on simplifying it to a two-tiered GST tax structure of 5% and 18%, phasing out the currently existing 12% and 28% slabs. There is also a de-merit tax rate for luxury and 'sin' goods at a 40% tax slab. These changes are typically aimed at increasing the disposable income and in turn boosting consumption, as well as promoting the ease of doing business. The GST rationalisation is expected to be a positive step towards economic growth, stimulating private consumption and easing inflationary pressures.

The developments highlighted above are expected to have a significant influence on the packaging sector both globally and in India. Higher economic growth, improved investment sentiment, and rising consumption driven by tax rationalisation are likely to boost demand for packaging across FMCG, pharmaceuticals, e-commerce, and industrial goods. Increased public and private capital expenditure will support manufacturing expansion, thereby driving packaging requirements for industrial and consumer products. Moreover, as global trade flows strengthen and India deepens its export linkages, the need for durable, cost-efficient, and sustainable packaging solutions will continue to rise.

The impact of U.S. tariffs on India's export trade is anticipated to be minimal. The engineering goods sector will have a potential U.S. tariff impact, whereas the steel industry is affected by the 50% tariffs, although the impact is expected to be minimal, given that the volume of goods exported is less.

On February 13th, 2025, Prime Minister Narendra Modi and President Donald Trump discussed enhancing the U.S.-India trade relationship, with a target to increase bilateral trade from USD 200 billion to USD 500 billion by 2030. As of

September 2025, India and the U.S discussions seem “positive and forward-looking”, according to the Ministry of Commerce and Industry. Thus, while U.S. tariffs may have a limited impact on India’s exports, ongoing trade negotiations and India’s competitive manufacturing advantage position it well for continued growth in global trade.

Impact on US Exports: post-tariff implications

The imposition of post-tariff measures on exports to the US is expected to have a moderate overall impact on India’s packaging exports, with around 20% of sectoral exports exposed to the US market. Cartons and other packaging boxes face the highest impact due to their larger export share and increased landed costs, while films, flexible packaging and plastic packaging products are expected to see a moderate impact. Overall, the tariffs may result in some pressure on export volumes and margins, leading to gradual market diversification and product mix adjustments.

3 Overview of the Global Packaging Industry

3.1 Overview and Market Size of the Global Packaging Industry

The global packaging industry is crucial for trade, product protection, and brand communication across various sectors, including food, pharmaceuticals, personal care, and e-commerce. This industry has shifted from traditional packaging to more sustainable and consumer-focused solutions.

The rising global population, urbanisation, and increasing income levels have driven up the demand for packaged goods, particularly in emerging economies. At the same time, environmental concerns and stricter regulations are driving investments in recyclable and biodegradable materials. Technological advancements in automation and smart packaging are also enhancing supply chain efficiency and product traceability.

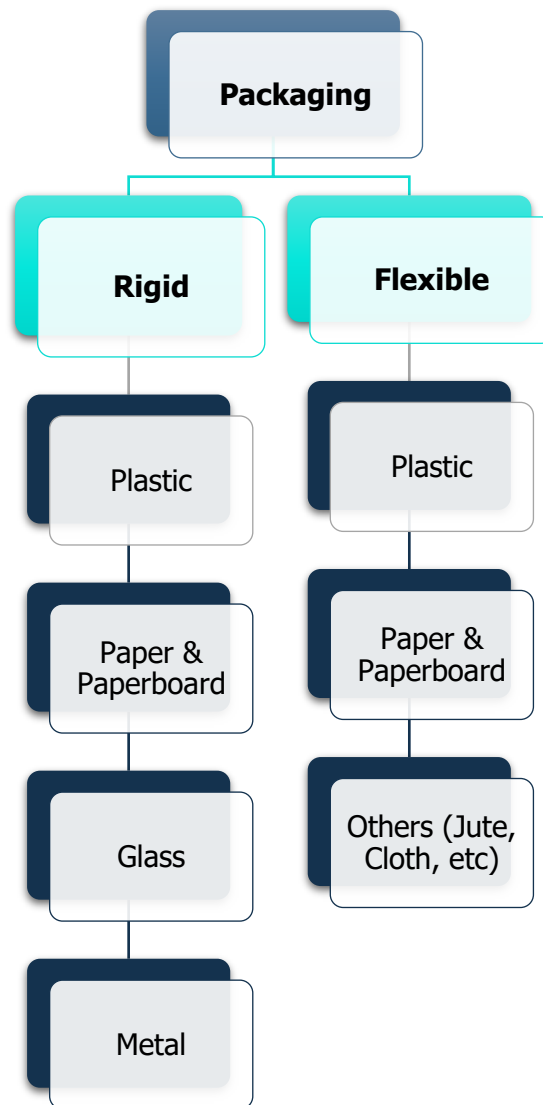
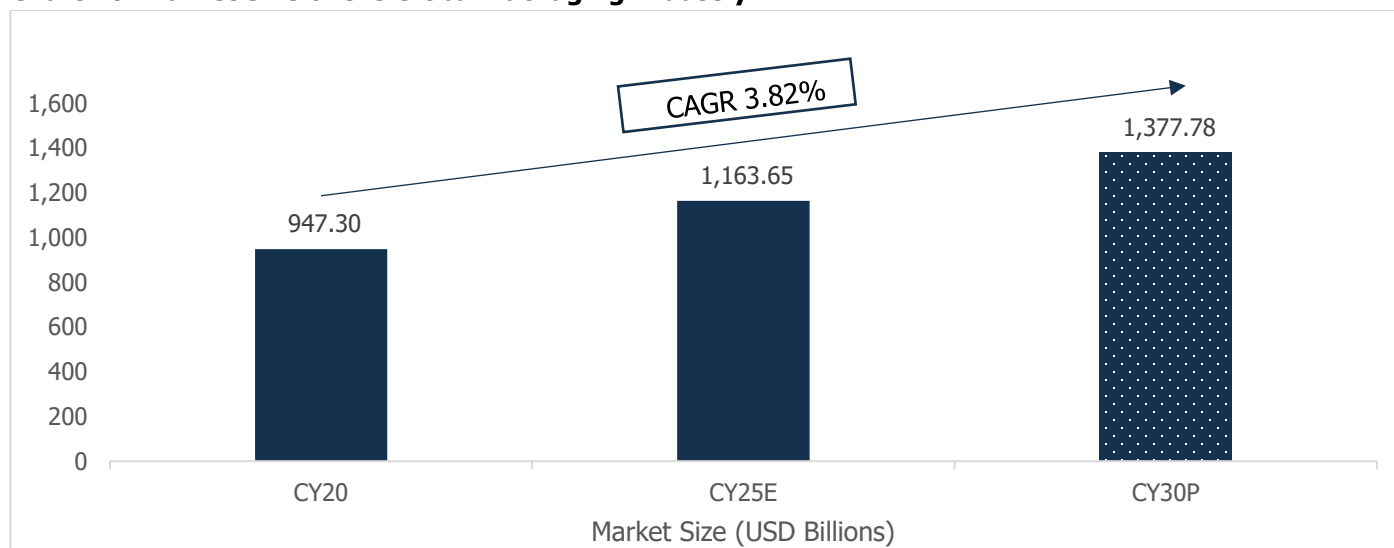


Chart 16: Market Size of the Global Packaging Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

Year	CY20	CY25E	CY30P
% Share of India in Global Packaging	9.02%	7.72%	9.27%

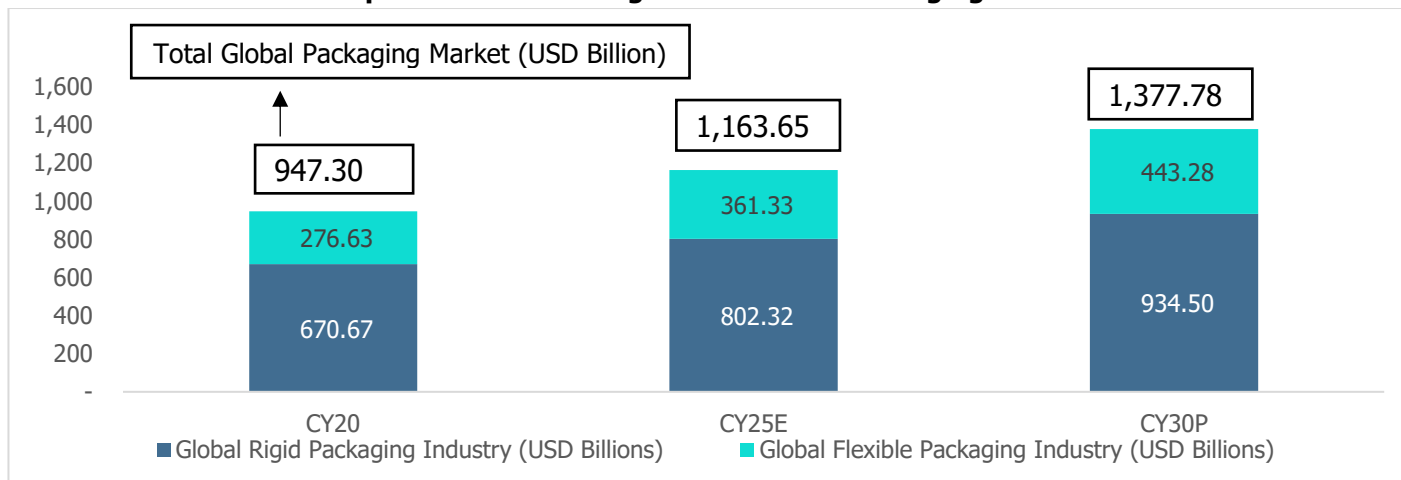
Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

In CY25, the global packaging industry is estimated at USD 1,163.65 billion (INR 1,00,248.47 billion) and is expected to grow to USD 1,377.78 billion (INR 1,20,087.65 billion) by CY30. This represents a compounded annual growth rate of 3.82% from CY20 to CY30. Developing regions, particularly in Asia-Pacific like China, India, Latin America like Brazil, and parts of Africa, etc are experiencing faster growth compared to mature markets, driven by industrialisation and changing consumption habits. In line with this trend, India’s packaging industry is projected to grow at a CAGR of 7.29% between CY25 to CY30. In contrast, developed economies like the USA, Germany, Japan, etc, are shifting their focus to sustainable, premium packaging formats rather than simply increasing volume.

India’s share of the global packaging market declined from about 9.02% in CY20 to around 7.72% in CY25, mainly because the global market grew faster than India’s market, not because India’s industry shrank. After CY20, demand for packaging increased strongly in regions such as North America, Europe and China due to growth in online shopping, pharmaceuticals, and environmentally friendly packaging. While India also saw steady growth, factors such as rising raw-material prices, supply chain disruptions, slower adoption of newer packaging technologies, and currency fluctuations affected the overall growth in value. As a result, even though India’s packaging market increased in size, the global market expanded faster, leading to a lower share for India. However, improving export competitiveness, global supply chain realignments, and increasing adoption of value-added and sustainable packaging solutions are likely to strengthen India’s global positioning.

Overall, while the sector continues to expand at a steady pace, the emphasis is clearly moving from scale to sustainability, innovation, and circular design principles. Overall, India is estimated to contribute 7.72% of the global packaging industry in CY25.

Chart 17: Market Size Comparison of Global Rigid and Flexible Packaging



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The rigid packaging segment is expected to grow from USD 670.67 billion in CY20, accounting for 70.80%, to USD 934.50 billion in CY30 (67.83%). The flexible packaging segment is expanding faster, rising from USD 276.63 billion in CY20 (29.20%) to USD 443.28 billion by CY30 (32.17%), steadily gaining share over time. Overall, industry growth is driven by rising packaged consumption, sustainability-led material shifts, and increasing demand for cost-efficient, lightweight packaging formats, with flexible packaging emerging as a key contributor to growth.

3.2 Overview and Market Size of the Global Packaging Industry- by End User Segment

The global packaging market caters to a wide range of industries, with demand closely tied to consumer trends, product innovation, and regulatory changes. The main sectors include food and beverages, pharmaceuticals, beauty and personal care, industrial goods, and various niche markets

Food and Beverages

This sector is the largest consumer of packaging, making up over majority of total demand. The rising popularity of ready-to-eat meals, packaged snacks, and beverages drives innovation in both flexible and rigid packaging formats. Key priorities for this segment include convenience, safety, and extended shelf life, which influence material and design choices.



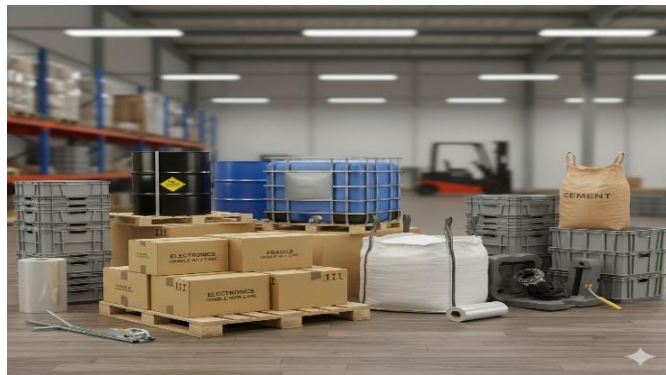
Pharmaceuticals

In the pharmaceutical industry, packaging emphasizes safety, hygiene, and compliance with regulations. The demand for blister packs, vials, and pouches has grown alongside the expansion of global healthcare and medical exports. Features such as child-resistant closures, tamper-evident seals, and traceability are increasingly integrated into pharmaceutical packaging



Industrial and Others

Industrial packaging, including drums, crates, and bulk containers, plays a crucial role in manufacturing, logistics, and the chemical industry. The growth of global trade and e-commerce logistics has boosted the demand for sturdy and protective packaging solutions. Other sectors, such as electronics and home care, also see steady demand, often needing specialized barrier and cushioning properties.

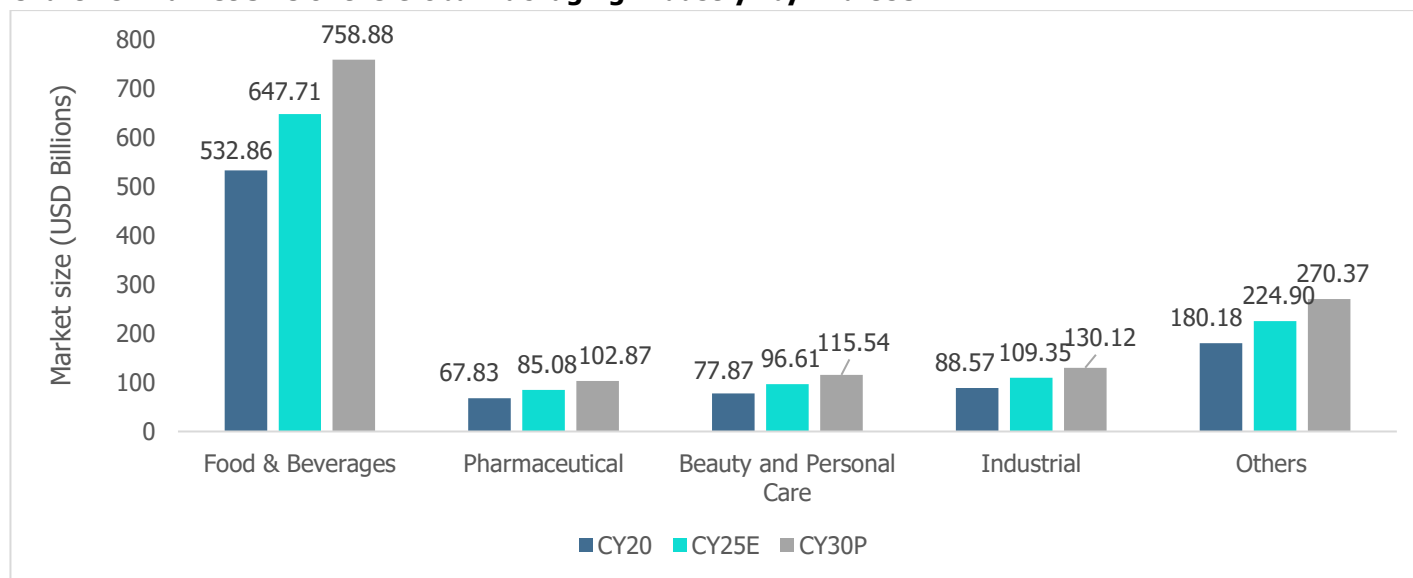


Beauty and Personal Care

Packaging for cosmetics and personal care products focuses on aesthetics, functionality, and sustainability. There is a growing interest in premium designs, refillable formats, and recyclable materials, as brands respond to consumer preferences for environmentally responsible products.



Chart 18: Market Size of the Global Packaging Industry- by End User



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

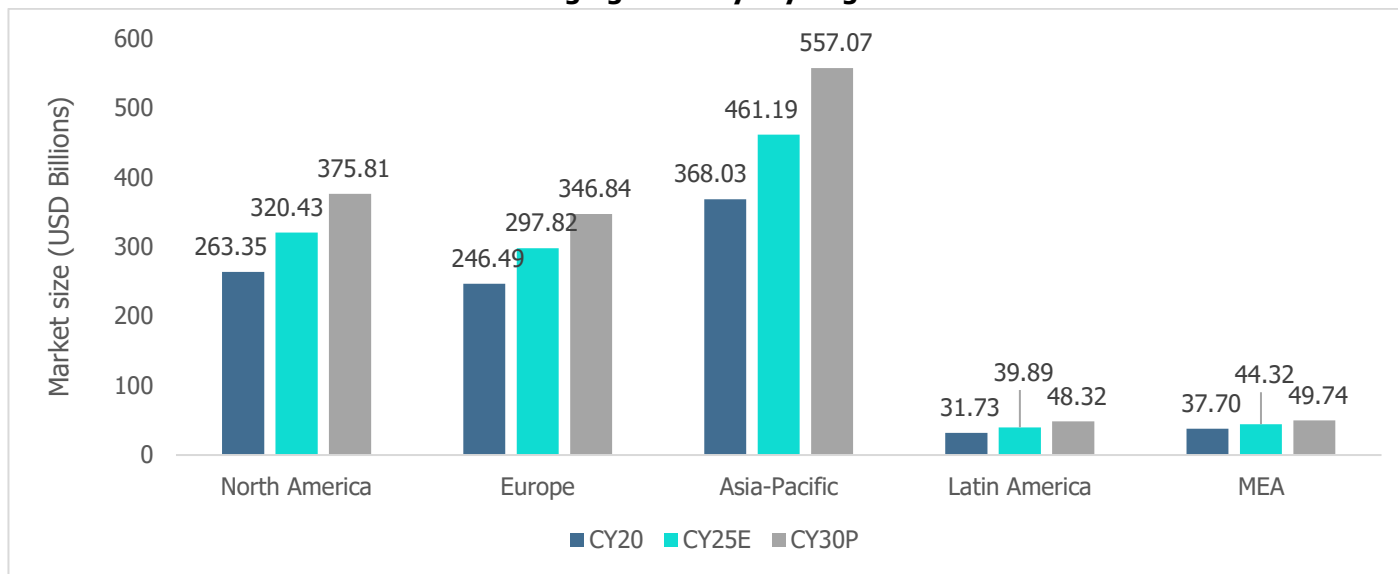
In CY20, food & beverages accounted for the largest single share of packaging demand, with pharma, personal care and industrial packaging making up the balance. By CY30P, the global packaging market is projected to expand, food & beverages remain the biggest driver, while pharmaceuticals and personal care show strong growth because of higher

healthcare spending and premiumisation of beauty products; e-commerce-driven transit packaging also contributes meaningfully to growth.

3.3 Overview and Market Size of the Global Packaging Industry- by Region Wise

The global packaging industry shows varied growth patterns across regions, influenced by economic maturity, consumer preferences, industrialisation, and sustainability priorities. While developed markets such as North America and Europe focus on innovation and circularity, emerging regions like Asia-Pacific and Latin America are driving overall volume growth through expanding consumer bases and manufacturing capacity.

Chart 19: Market Size of the Global Packaging Industry- by Region



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

North America

In CY20, North America’s packaging market was mature, valued at around USD 263.35 billion, supported largely by strong food, beverage, and healthcare sectors. In CY25, growth is estimated to remain steady, showing a CAGR of 4% between CY20-CY25, led by increased e-commerce packaging and sustainability-driven redesigns. The region’s focus is shifting toward recyclable plastics, paper-based solutions, and digital printing technologies. By CY30, the market is expected to reach roughly USD 375.81 billion, reflecting a moderate CAGR of around 3.24%, between CY25-CY30, with emphasis on innovation and closed-loop recycling systems rather than volume expansion.

Europe

Europe has been at the forefront of sustainable packaging initiatives, driven by strict regulations and eco-conscious consumers. In CY20, the market stood at approximately USD 246.49 billion, expanding modestly through regulatory alignment under the EU’s Green Deal and Packaging Waste Directives. In CY25, the demand is estimated to remain stable from the food, beverage, and personal care sectors keeps growth at around 3.86% CAGR between CY20-CY25. By CY30, the market could touch USD 346.84 billion, reflecting stable growth anchored by circular economy policies and advanced recycling infrastructure.

Asia-Pacific

Asia-Pacific represents the largest and fastest-growing packaging market globally, driven by rising incomes, urbanisation, and rapid expansion in the FMCG and e-commerce sectors. In CY20, the region’s market was valued at roughly USD 368.03 billion, growing rapidly through manufacturing-led economies like China, India, and Indonesia. In CY25, the market is estimated to have surpassed USD 461.19, registering a CAGR of 4.62%, supported by strong demand for

flexible packaging and increasing localisation of production. Looking ahead to CY30, Asia-Pacific is expected to reach USD 557.07 billion, growing at a steady 3.85% CAGR, between CY25-CY30, firmly positioning it as the global growth engine for packaging.

Latin America

In CY20, Latin America’s packaging industry was valued at just over USD 31.73 billion, with growth tied to food processing, beverages, and household products. The region has gradually recovered from pandemic-driven disruptions, supported by local manufacturing and export-oriented industries. In CY25, the market is estimated to have reached almost USD 39.89 billion, driven by flexible and paper-based packaging formats. By CY30, moderate economic recovery and regional trade expansion could take the market to about USD 48.32 billion, representing a 3.91% CAGR, between CY25-CY30.

Middle East and Africa (MEA)

MEA’s packaging industry remains smaller in comparison but offers long-term potential. In CY20, it was valued at around USD 37.70 billion, supported by the food, beverages, and personal care sectors. Industrial growth, urbanisation, and rising consumption are helping the region steadily expand. In CY25, the market is estimated to have reached USD 44.32 billion, and by CY30 is projected to reach about USD 49.74 billion. The focus in MEA is shifting towards localisation of packaging production and investments in recyclable materials to meet sustainability goals.

3.4 Overview and Market Size of the Global Rigid Packaging Industry- by Material

The global rigid packaging industry is essential within the packaging landscape, providing strength, durability, and product protection across various applications. It primarily includes materials such as plastic, metal, paper and paperboard, and glass, each serving distinct purposes.

Plastic

Rigid plastic packaging, which includes bottles, jars, containers and Co-Ex bottles is the most widely used material due to its versatility, cost-effectiveness, and lightweight nature. However, the production of rigid plastics involves significant fossil fuel consumption, as most polymers are derived from petroleum or natural gas. This results in notable carbon emissions during the manufacturing of resins and the processing of products. The increasing adoption of recycled resins, such as recycled PET (rPET) and recycled HDPE (rHDPE), is helping to reduce reliance on virgin materials and lower the carbon footprint. Rigid plastic packaging is extensively used in beverages, personal care products, household items, and food packaging.

Metal

Metal packaging, primarily made from aluminium, is valued for its durability, tamper-resistance, and excellent barrier properties. The production of primary metals involves energy-intensive smelting processes that contribute to high carbon emissions and fossil fuel consumption. However, metals can be recycled repeatedly without loss of quality, and recycling consumes only a fraction of the energy compared to primary production. This recyclability supports the circular economy and helps offset the sector’s carbon intensity. Key end-use sectors for metal packaging include beverages (cans), canned foods, aerosols, paints, and industrial lubricants.

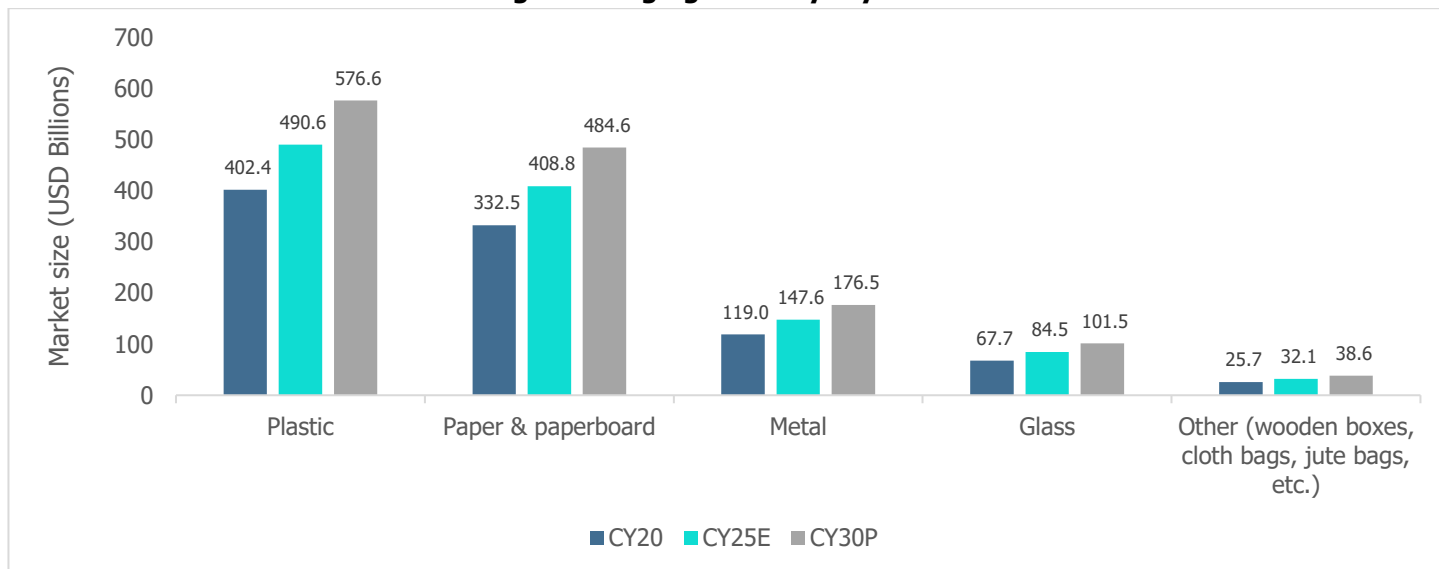
Paper & Paperboard

This segment includes cartons, corrugated boxes, and moulded fibre products, and is gaining momentum as a sustainable alternative to plastics. While paper manufacturing does involve fossil fuel-based energy and emits CO₂ during pulping and drying processes, the increasing use of recycled and responsibly sourced fibre has reduced overall emissions. The biodegradability and recyclability of paper make it suitable for environmentally conscious applications, supported by ongoing investments in low-carbon energy sources within paper mills. Key end-use sectors for paper and paperboard packaging include food and beverage cartons, ready-to-eat packaging, e-commerce and logistics, pharmaceuticals, and personal care products.



Glass is a preferred choice in premium sectors such as alcoholic beverages, cosmetics, and pharmaceuticals due to its non-reactive, inert, and fully recyclable nature. However, glass production requires high-temperature furnaces that rely heavily on fossil fuels, resulting in substantial CO₂ emissions. Incorporating cullet (recycled glass) in production helps lower melting temperatures, which in turn reduces both energy use and carbon emissions. While the weight of glass results in higher transport and energy costs, its recyclability makes it a long-term sustainable option.

Chart 20: Market Size of the Global Rigid Packaging Industry- by Material



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

3.5 Overview and Market Size of the Global Rigid Plastic Packaging Industry

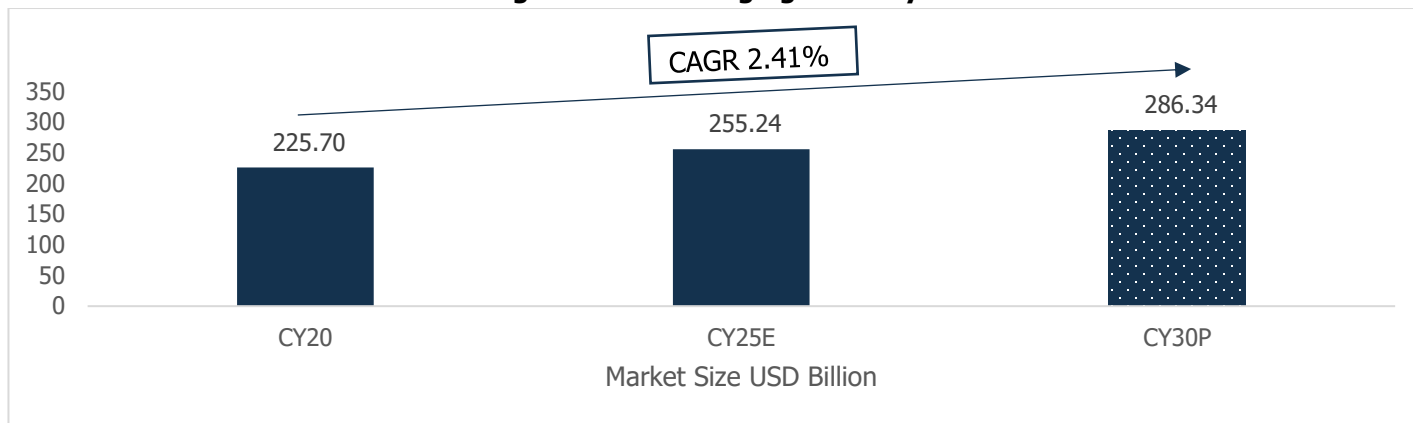
The global rigid plastic packaging industry revolves around durable formats like bottles, jars, and tubs, primarily made from PET, HDPE, and PP. These materials are favoured in beverages, food, personal care, pharmaceuticals, and industrial applications for their protection, lightweight design, and cost-effectiveness.

Recently, the industry has shifted focus beyond volume growth, with increased demand for recycled content, especially in PET, driving investments in rPET and closed-loop initiatives. Innovations such as lightweight designs and mono-materials are also reshaping product development. Demand remains steady in hygiene-sensitive sectors, while consumer goods are influenced by economic cycles.

The Asia-Pacific region leads in volume growth due to rising consumption and e-commerce, while North America and Europe emphasise circularity and regulatory compliance. Key challenges include fluctuating feedstock prices, varying recycling infrastructure, and developing viable sources of recycling. The future of rigid plastic packaging centres on transforming how plastics are produced, used, and recovered.

In CY25, the global rigid plastic packaging industry is estimated to be USD 255.24 billion and is expected to grow further to USD 286.34 billion by CY30. This represents a compounded annual growth rate of 2.41% from CY20 to CY30.

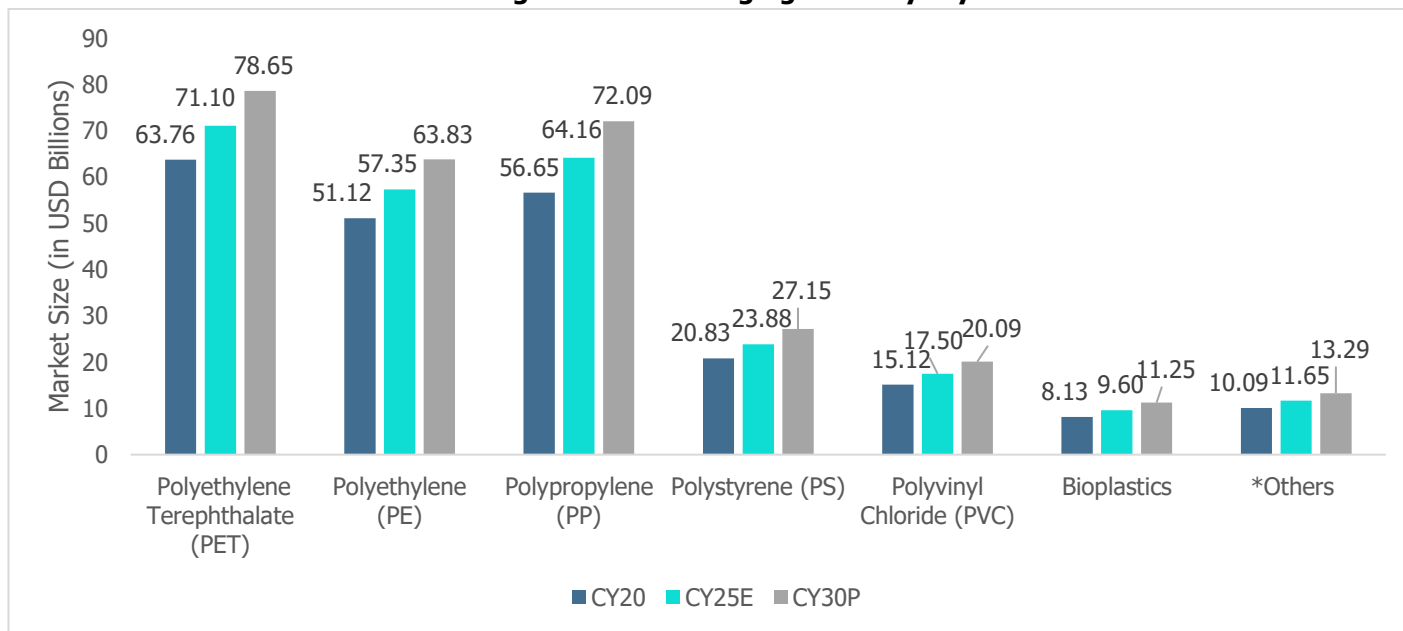
Chart 21: Market Size of the Global Rigid Plastic Packaging Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

3.6 Overview and Market Size of the Global Rigid Plastic Packaging Industry- by Material

Chart 22: Market Size of the Global Rigid Plastic Packaging Industry- by Material



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected, *Others include plastics like Polycarbonate (PC), Expanded Polystyrene (EPS), etc

Polyethylene Terephthalate (PET) has the maximum share in the Rigid Plastic segment and was valued around USD 63.76 billion in CY20 and further is expected to grow to around USD 78.65 billion by CY30. All other materials are expected to grow at a CAGR of around 2-3% between CY25-CY30. Plastics account for the largest share of packaging value by volume, followed by paper and paperboard, which are significant in retail and e-commerce. Although metal and glass represent smaller volumes, they have higher value in premium and specialised segments. Overall, the market is evolving rather than shrinking, as plastics continue to grow in absolute terms while products with recycled content and paper alternatives gradually capture additional market share.

Polyethylene Terephthalate (PET)

PET is a popular choice for clear bottles and food trays due to its lightweight nature, strength, and recyclability. The industry is focused on thinning out the material and increasing the use of recycled PET to achieve its sustainability goals.

Polyethylene (PE — LDPE / HDPE)

PE is the primary material for films and many bottles, valued for its flexibility and cost-effectiveness. With growing scrutiny on single-use films, there's a shift toward recyclable mono-materials and a greater emphasis on incorporating recycled content.

Polypropylene (PP)

PP is preferred for tubs, caps, and microwave-safe trays because of its heat resistance and rigidity. There's a growing move towards recyclable designs, and it is increasingly the focus of chemical recycling initiatives.

Polystyrene (PS)

PS and EPS are used for cushioning and low-cost rigid applications, but they are under pressure due to regulations and shifting consumer preferences against single-use items. Where they remain in use, the emphasis is on enhancing reuse or improving recovery systems.

Polyvinyl Chloride (PVC)

PVC finds niche applications in clear films and blister packs but is losing ground in many markets due to concerns over recycling and disposal. Many brand owners are opting for alternative materials when feasible.

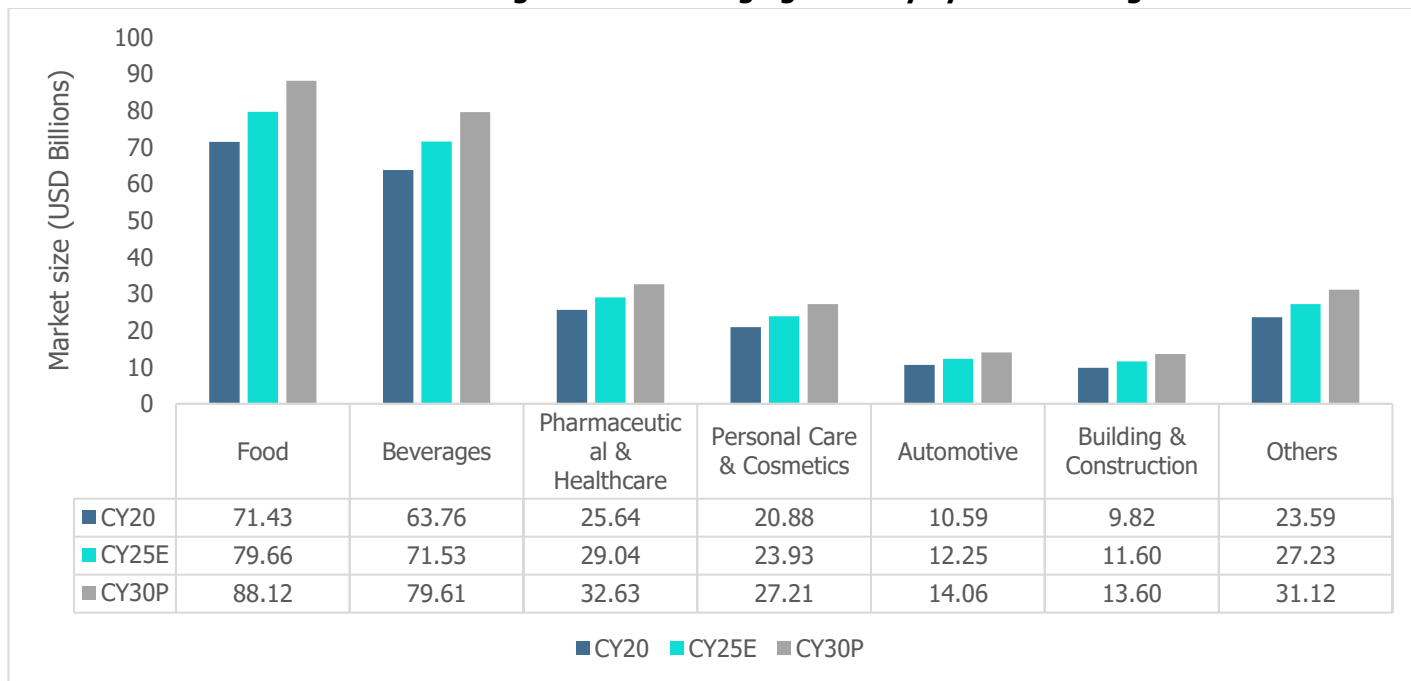
Bioplastics

Though starting from a small base, bioplastics are gaining traction for compostable and lower-carbon applications, particularly in high-end and regulated markets. The main challenges to broader adoption are scale and infrastructure.

3.7 Overview and Market Size of the Global Rigid Plastic Packaging Industry- by End User Segment

The food and beverage sectors are the main end users, followed by pharmaceuticals, personal care, and various industrial applications. Each end market has unique performance and regulatory requirements that influence the choice of materials.

Chart 23: Market Size of the Global Rigid Plastic Packaging Industry by End User Segment



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

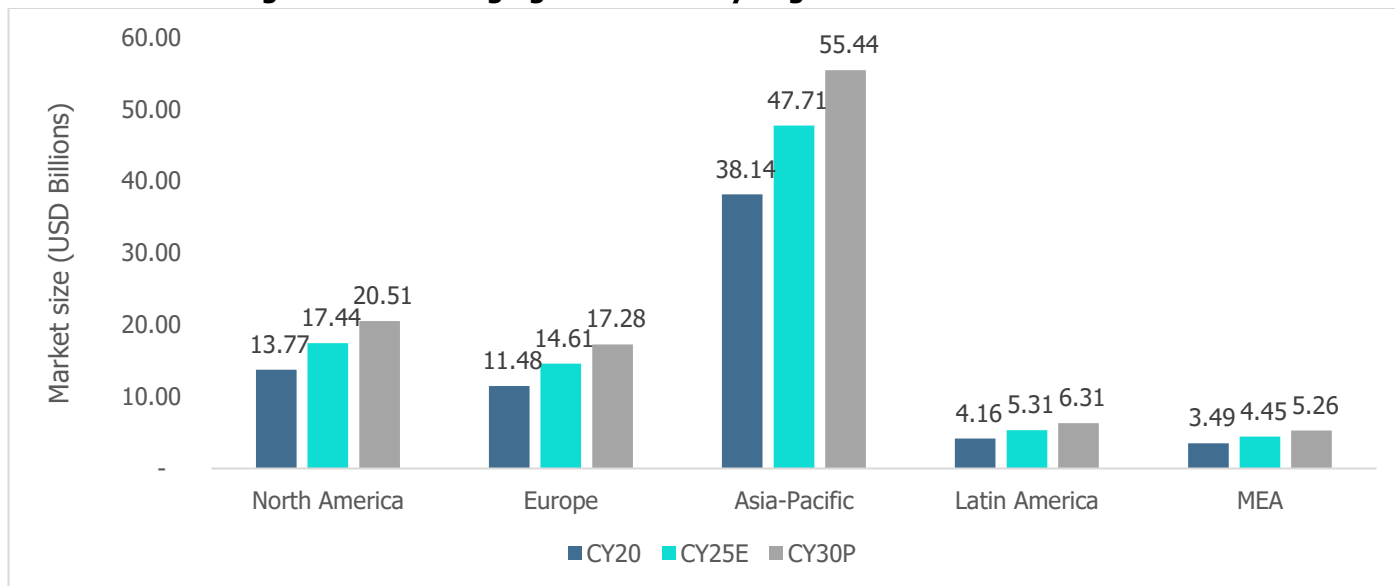
The Food and Beverages sector holds the largest share in the Rigid Plastic segment, valued at approximately USD 135.19 billion in CY20. This value is expected to grow to around USD 167.73 billion by CY30. Other materials in this segment are anticipated to grow at a CAGR of about 2-3% from CY25-CY30. Bottles, jars, tubs, and trays designed for packaged foods and drinks account for the biggest portion of demand. In the pharmaceuticals and healthcare industries, high-value applications are prominent due to the need for sterile, tamper-evident, and traceable formats, such as vials, medical bottles, and specialised containers.

The personal care and cosmetics sectors also contribute significantly to premium spending, driven by attractive finishes, pumps, and refillable systems. Additionally, industrial sectors, including chemicals, lubricants, and bulk containers, provide steady but more cyclical demand. Overall, growth is strongest in areas where convenience, hygiene, and single-serve formats are emphasised, particularly in food and beverages and healthcare. Furthermore, there is an increasing focus on circularity, with the adoption of materials like recycled PET (rPET), recycled HDPE, and mono-PP being either mandated or embraced.

3.8 Overview and Market Size of the Global Rigid Plastic Packaging Industry- by Region

The Asia-Pacific region is the largest and fastest-growing market, while North America and Europe are more mature markets focusing on sustainability and innovation. Latin America and the Middle East/Africa (MEA) are smaller markets but are expanding.

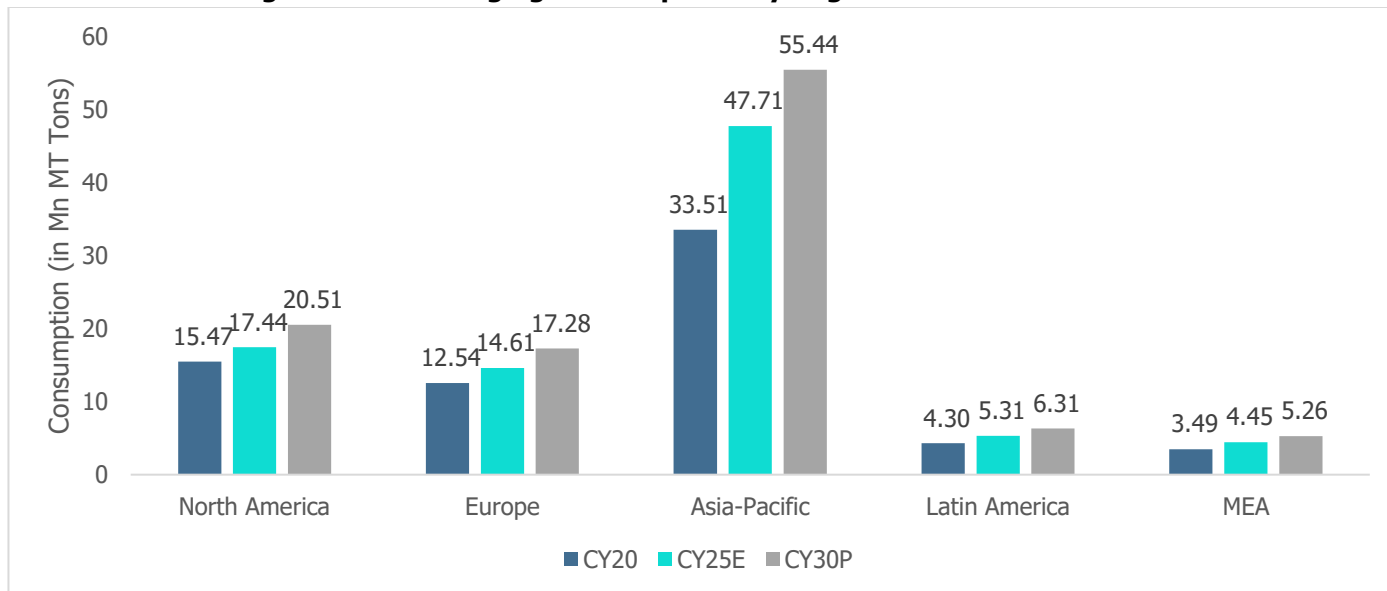
Chart 24: Global Rigid Plastic Packaging Production-By Region



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The chart shows steady growth in the production of rigid plastic packaging across major regions. Asia-Pacific remains the clear leader, with production rising from around 47.71 Mn MT in CY25 to a projected 55.44 Mn MT in CY30, representing a CAGR of 3.05%. This growth is driven by expanding consumer markets and strong manufacturing activity. North America and Europe show moderate production increases, supported by stable demand in packaged food, beverages, and personal care. Latin America and MEA, though smaller, continue to see gradual production growth in line with rising consumption of packaged goods. Overall, the global industry’s production trajectory underscores the enduring reliance on rigid plastic packaging.

Chart 25: Global Rigid Plastic Packaging Consumption- By Region



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The chart highlights rising consumption of rigid plastic packaging across all major regions. Asia-Pacific remains the largest consumer, increasing from 41.98 Mn MT in CY25 to a projected 48.72 Mn MT by CY30, implying a CAGR of 3.02%. North

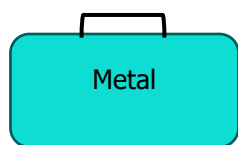
America and Europe show steady growth in consumption as packaged food, beverages, and personal care products continue to drive demand. Emerging markets such as Latin America and MEA also exhibit gradual increases in consumption, supported by urbanisation and rising household purchasing power. Overall, the global consumption trend reinforces the strong and sustained reliance on rigid plastic packaging.

3.9 Overview and Market Size of the Global Flexible Packaging Industry- by Material

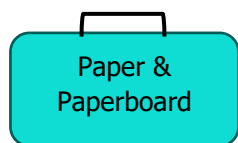
The global flexible packaging industry has become the fastest-growing segment within the packaging sector, driven by convenience, cost efficiency, and sustainability efforts. It includes plastic films, metal foils, paper and paperboard laminates, and other speciality materials, each offering unique performance benefits.



Plastic films, laminates and pouches are the primary materials used in flexible packaging, commonly found in snacks, dairy, confectionery, beverages, and personal care products. These materials mainly come from petroleum-based polymers, which contribute to significant fossil fuel use and carbon emissions during resin production and film extrusion. However, their lightweight, high-barrier properties help reduce food waste, thereby indirectly lowering lifecycle emissions. Currently, efforts are focused on developing recyclable mono-material structures (like PE-PE and PP-PP laminates) and increasing the use of post-consumer recycled content to decrease reliance on virgin polymers and meet global sustainability standards.

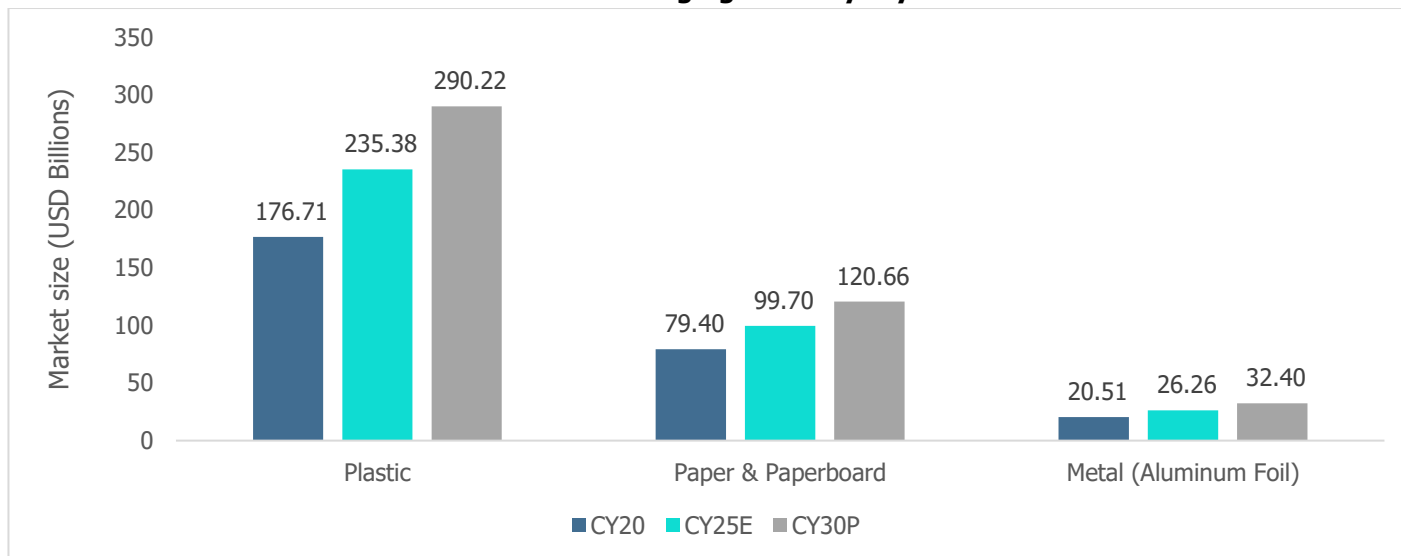


Aluminium foil and in some cases tin-based foils is a crucial material in flexible packaging, especially for pharmaceuticals, dairy, ready-to-eat meals, and dry snacks. It effectively protects products from light, oxygen, and moisture, preserving quality and extending shelf life. The production of primary aluminium is energy-intensive, leading to high carbon emissions and fossil fuel consumption. However, recycling aluminium requires up to 95% less energy than producing it from bauxite ore. Challenges like recycling infrastructure and material separation exist, particularly when the foil is laminated with plastics or paper.



Paper and paperboard are gaining traction in the flexible packaging sector as renewable and biodegradable materials. Commonly used in pouches, wraps, and sachets for dry foods, bakery items, and personal care products, they typically have a lower carbon footprint when sourced from sustainably managed forests compared to fossil fuel-based plastics. However, the conversion processes, especially with polymer or aluminium layers, can still lead to high fossil fuel use and energy consumption. While these materials are recyclable and compostable, their resistance to moisture, grease, and oxygen poses challenges. Researchers are working on enhancing these barrier properties sustainably, aligning with the industry's shift toward circular, low-carbon packaging solutions.

Chart 26: Market Size of the Global Flexible Packaging Industry- by Material



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The global packaging market shows steady growth across materials, led by plastics, followed by paper and metal. Plastic packaging remains the largest segment, expanding from USD 176.7 billion in CY20 to USD 235.4 billion in CY25, and is projected to reach USD 290.2 billion by CY30, supported by strong demand for flexible formats such as pouches and sachets. Paper packaging also records consistent growth, driven by sustainability-led substitution and wider use in FMCG and e-commerce. Metal packaging, while smaller in scale, continues to grow steadily, supported by its critical role in high-barrier applications, particularly aluminium foil, where performance requirements outweigh cost considerations.

3.10 Overview and Market Size of the Global Metal Packaging Industry

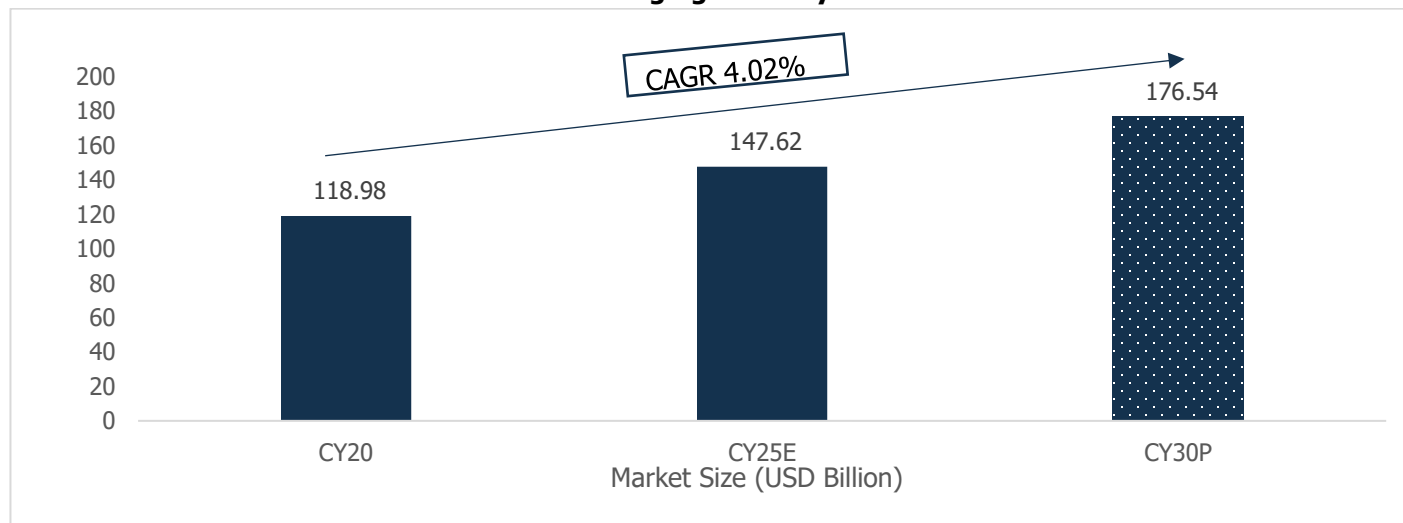
The global metal packaging industry includes various rigid formats such as tinplate (tin-coated steel) and aluminium cans, aerosols, tubes, drums, and speciality tins used for food, beverages, aerosols, paints, and industrial goods. Metal is valued for its durability and recyclability; cans and tins can be recycled endlessly without degrading in quality, making metal a key player in circular-economy initiatives and brand sustainability efforts.

In CY25, the global metal packaging industry is estimated to reach USD 147.62 billion, with projections to grow further to USD 176.54 billion by CY30. This indicates a compound annual growth rate of 4.0% from CY20 to CY30. The demand for aluminium beverage cans has been a significant growth driver, as breweries, soft drink manufacturers, and emerging functional drink brands favour cans for their convenience, shelf stability, and recycling benefits. Additionally, aluminium bottles are gaining traction for on-the-go consumption.

Food cans and aerosol tins continue to perform well, supported by the demand for pantry staples and personal care products, respectively. Manufacturers across the value chain are focusing on lightweight designs, improved coatings, and closed-loop systems, like recycled aluminium supply agreements. At the same time, customers and regulators are advocating for higher recycled content and better collection systems. However, fluctuations in commodity costs and the energy-intensive nature of metal production remain important challenges.



Chart 27: Market Size of the Global Metal Packaging Industry

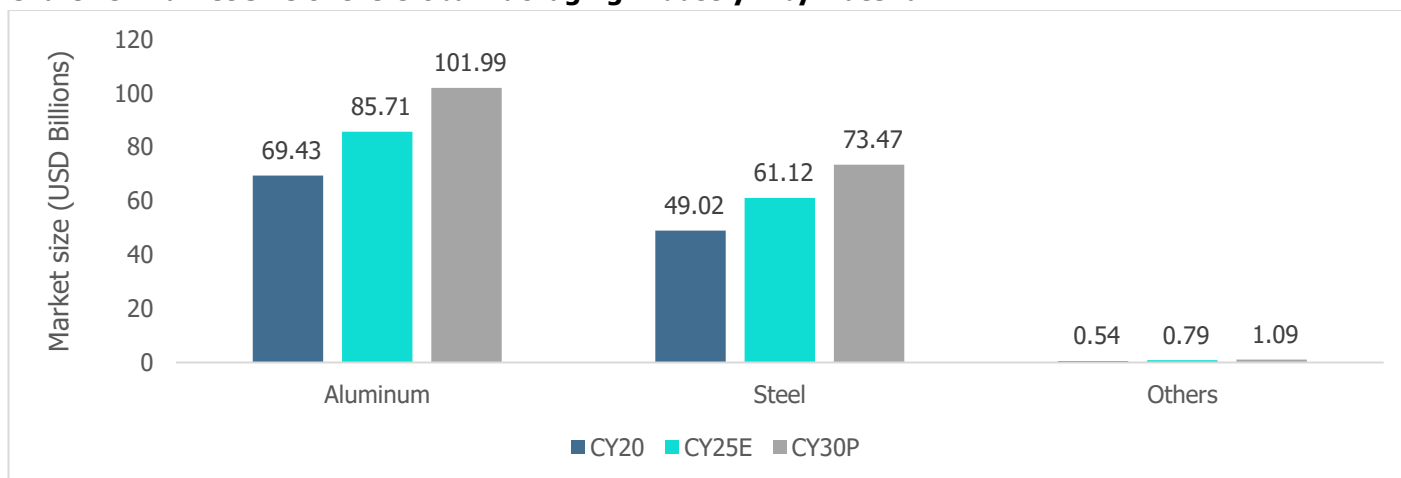


Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected
 Note: This includes both rigid and flexible packaging

3.11 Overview and Market Size of the Global Metal Packaging Industry- by Material

The metal packaging sector is primarily dominated by aluminium and steel (tinplate), with smaller contributions from niche metals and coated alloys. Aluminium is favoured for its lightweight, excellent corrosion resistance, and ease of recycling, making it the preferred material for beverage cans and many on-the-go formats. Steel (tinplate) remains crucial for food cans, large drums, and industrial containers due to its strength and cost-effectiveness. The category labelled "others" includes speciality tins, composite metal packs, and thin-gauge alloys used for aerosols, premium tins, and certain industrial closures.

Chart 28: Market Size of the Global Packaging Industry – by Material



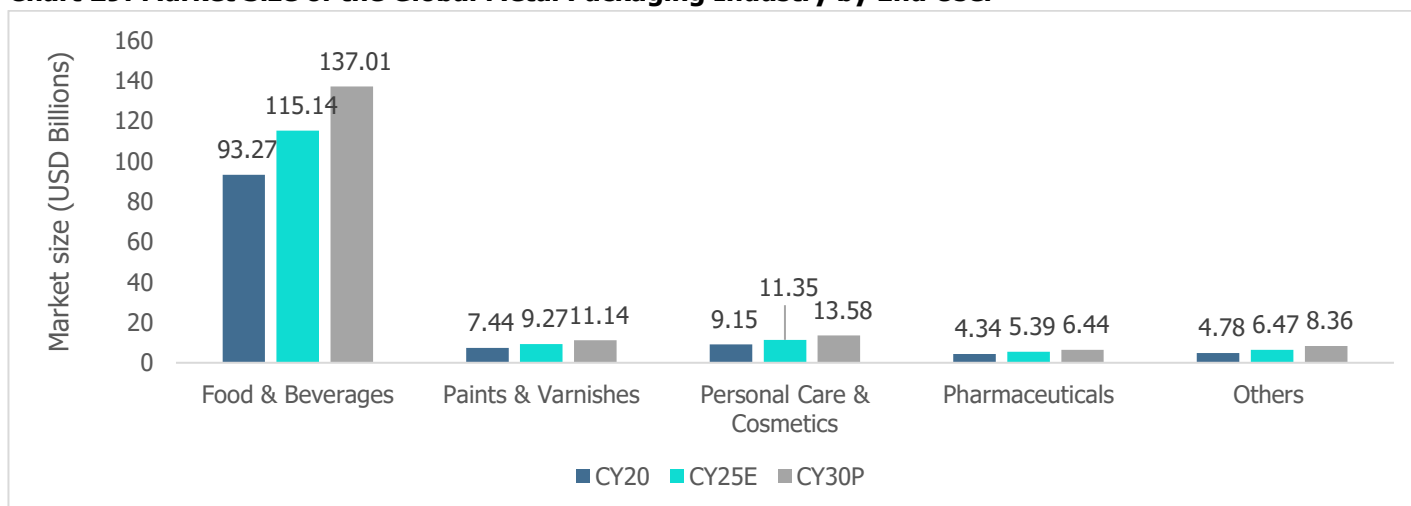
Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

Aluminium is the fastest growing subsegment in the metal packaging sector and is expected to grow to USD 101.99 billion by CY30, driven by sustained demand for beverage cans, lightweighting trends, and strong recycling economics. Many markets have recently experienced double-digit growth in can volumes. In contrast, steel/tinplate exhibits steady performance rather than rapid growth; food canning and bulk industrial uses maintain resilient volumes, although growth is slower as some beverage categories transition to aluminium. The "others" category grows more slowly from a smaller base, driven by premium confectionery tins, aerosols, and specialised industrial uses.

3.12 Overview and Market Size of the Global Metal Packaging Industry- by End User Segment

Metal packaging caters to a diverse range of end users, including food and beverages (cans and bottles), paints and varnishes (tins and drums), personal care and cosmetics (aerosol cans and decorative tins), pharmaceuticals (specific closures and speciality containers), and various industrial applications. Metals are preferred for their excellent barrier properties, mechanical strength, and recyclability. For instance, canned food requires a long shelf life, while aerosols need specialised valves and coatings. The wide reach of this sector means that metal packaging trends often mirror consumption patterns in both fast-moving consumer goods and heavy industry.

Chart 29: Market Size of the Global Metal Packaging Industry by End User



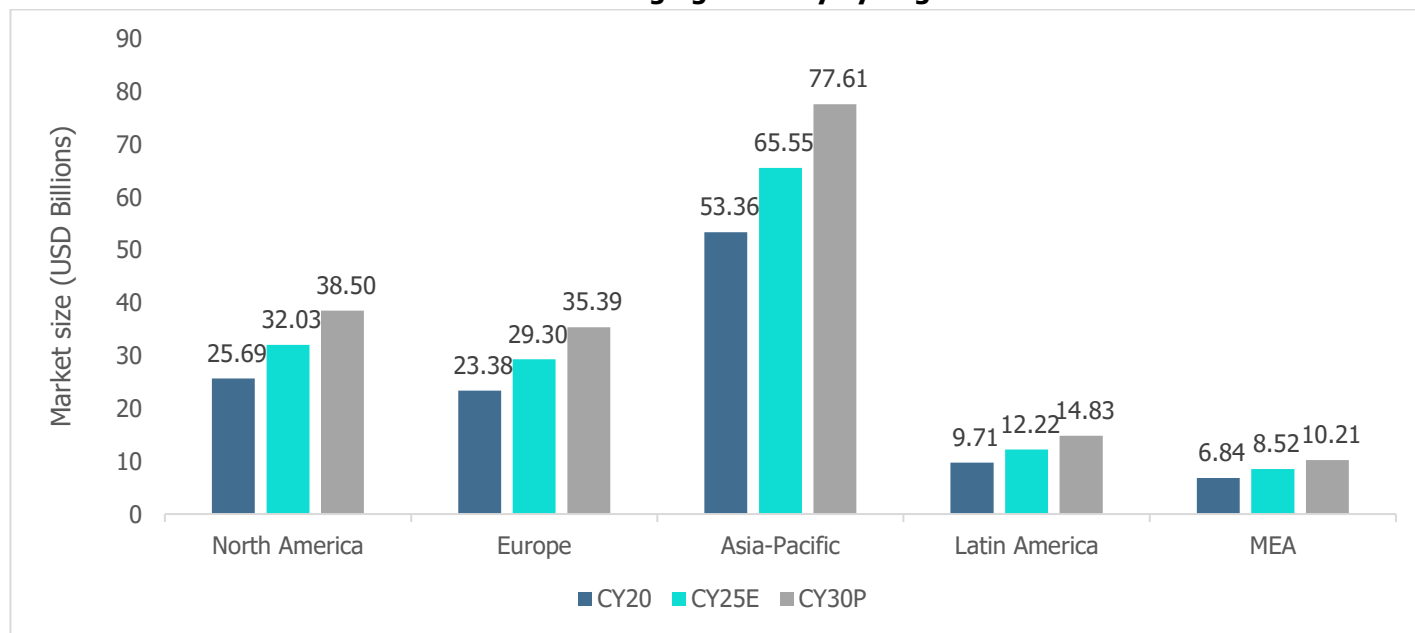
Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected
Others: Includes agrochemical industry

The metal packaging used in the food and beverages industry is expected to reach around USD 137.01 billion by CY30, showing a CAGR of 3.54% between CY25-CY30. The food and beverage sector is the largest demand driver, with a notable shift towards aluminium for drinks and high-quality steel for shelf-stable foods; growth in beverage cans is particularly strong compared to other subsegments. The paints and varnishing market grows in conjunction with construction and renovation cycles, reflecting trends in infrastructure and housing activity. The personal care and cosmetics sector experiences steady premium growth, especially in aerosols and decorative tins. Pharmaceuticals and industrial users also contribute a stable, often contract-based demand, with modest growth linked to healthcare and manufacturing trends.

3.13 Overview and Market Size of the Global Metal Packaging Industry- by Region

The Asia-Pacific region stands out as the largest and fastest-growing market for metal packaging, driven by increasing beverage consumption and the expansion of food processing. In contrast, North America and Europe are established markets that emphasise recycling initiatives, product innovation, and premium packaging formats. Latin America is experiencing moderate growth as packaged goods consumption evolves, while the Middle East and Africa (MEA) represent a smaller yet emerging market, characterised by pockets of rapid urban development and investments in local manufacturing. The market dynamics in each region are influenced by local diets, regulatory measures, and the strength of metal recycling infrastructure

Chart 30: Market Size of the Global Metal Packaging Industry by Region



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

In the Asia-Pacific region, aluminium cans and processed food tins are the primary drivers of growth, and the market size is expected to reach USD 77.61 billion, showing a CAGR of 3.44% between CY25-CY30. Meanwhile, North America and Europe are growing at a slower pace, focusing more on enhancing circularity and increasing the recycled content of products rather than boosting volume. Latin America shows steady, moderate progress in beverage and food consumption, although this growth is sensitive to fluctuations in currency and commodity prices. In the MEA region, steady and consistent, Gulf states are contributing feedstock and investment that favour aluminium production, while other markets face challenges with their collection systems. Overall, regional growth is positive but varies significantly across different areas.

3.14 Sustainability Profile Segment for the Packaging Industry

Biodegradability

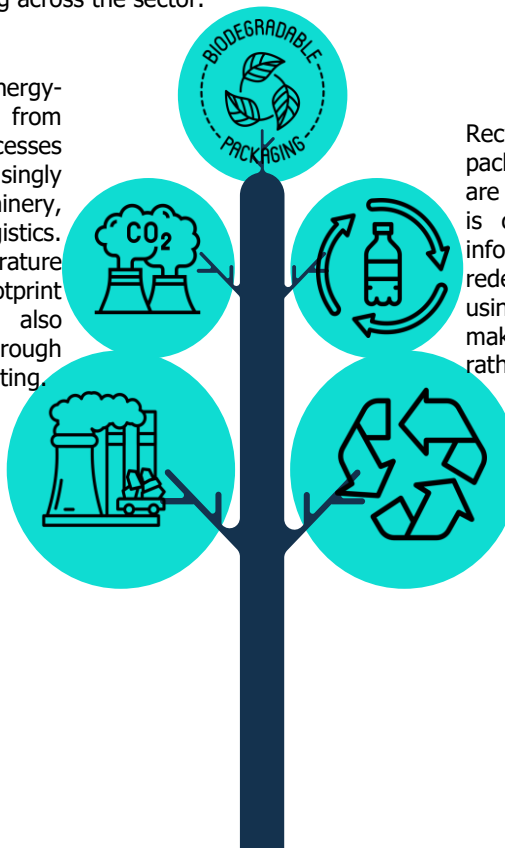
Biodegradable packaging is gaining traction, especially for short-use applications. Companies are developing compostable and natural fibre-based materials to tackle waste leakage. While infrastructure for large-scale composting is still evolving, a balanced approach combining recyclable and biodegradable solutions is emerging across the sector.

Carbon Emissions

Packaging production has been energy-intensive, but the focus has shifted from offsetting emissions to redesigning processes for efficiency. Manufacturers are increasingly adopting energy-efficient machinery, renewable power, and optimized logistics. Lightweight materials and low-temperature inks are helping reduce the carbon footprint per ton of output. Companies are also assessing material-level emissions through lifecycle analyses and transparent reporting.

Fossil Fuel Consumption

The industry's reliance on petrochemical feedstocks is steadily decreasing as companies shift toward bio-based and recycled materials. Many are also using renewable energy in production and sourcing recycled inputs to reduce dependence on crude oil, stabilize costs, and make their operations more sustainable over the long term.



Recyclability

Recyclability has become a key pillar of sustainable packaging. Under the EPR framework, producers are responsible for ensuring that their packaging is collected and reused. With India's strong informal recycling network, companies are redesigning packaging for easier segregation using mono-materials and solvent-free laminates, making recycling an integral part of product design rather than a post-use process.

Recycled Content

The use of recycled materials is becoming mainstream rather than symbolic. Manufacturers are setting up in-house recycling capabilities to ensure quality and consistency. Advanced blending techniques now allow higher use of post-consumer recycled (PCR) content without compromising performance, helping formalize India's recycling value chain.

3.15 Key Growth and Drivers

Key Trends in The Global Packaging Industry

Global Shift Toward Sustainability & Circular Packaging

Global demand for recyclable, lightweight, and recycled-content rigid plastics is rising. India leads this shift, with EPR Guidelines and Plastic Waste Management Rules ensuring recycling.

Technological Advancements in Rigid Plastic Materials

Globally, mono-material, bio-based, and high-barrier PET technologies are enhancing performance and recyclability. India's Plastic Parks Scheme and Petrochemical Innovation Centres promote R&D in lightweight rigid packaging, enabling local firms to achieve global quality benchmarks and export high-value PET/HDPE containers.

Innovation and Automation in Rigid Plastic Packaging

Globally, automation, digital printing, and smart manufacturing are improving efficiency and enabling premium packaging. India is embracing these technologies, allowing local manufacturers to meet international standards, cater to evolving consumer needs, and strengthen its position as a competitive hub for rigid plastic packaging.

Key Growth Drivers in the Global Packaging Industry

E-Commerce & Modern Retail Driving Rigid Packaging Growth

Worldwide e-commerce and omni-channel retailing are spurring demand for durable, tamper-proof rigid plastics. In India, online retail value is growing at a double-digit CAGR, fueling demand for PET and HDPE containers in logistics and D2C fulfilment; converters are adding blow-moulding capacity to serve this boom.

Growth of Direct-to-Consumer (D2C) Brands

The rise of D2C brands is increasing the importance of packaging as a branding and customer experience tool. With limited physical retail presence, packaging plays a key role in storytelling, differentiation and first impressions, driving demand for customised and design-led solutions. At the same time, higher parcel shipping and last-mile delivery needs are pushing demand for durable, transit-ready packaging, increasing packaging value per unit across global markets.

Asia-Pacific Dominance

Asia-Pacific leads global packaging consumption, driven by urbanisation and rising incomes. India outpaces regional trends, supported by a young population, expanding retail, and strong sustainability policies, establishing itself as one of the fastest growing and most attractive markets for rigid plastic packaging.

3.16 Key Threats and Challenges in the Global Packaging Industry

Raw Material Scarcity and Carbon Constraints

Volatility in raw material prices, especially PET, HDPE, and PP, continues to squeeze margins in rigid plastic packaging. Recently, crude-linked polymer prices in various Asian markets have been fluctuating due to supply disruptions, directly impacting input costs. Additionally, manufacturers are facing increasing scrutiny regarding their carbon emissions. To address these challenges, manufacturers need to adopt energy-efficient extrusion technologies, reduce water usage, and increase the recycled content in their products. However, achieving these goals often requires significant investment in advanced equipment, such as wash-line and solid-state polycondensation (SSP) units, which can be a hurdle for smaller companies. Those that cannot upgrade risk falling behind in meeting the sustainability criteria set by multinational FMCG firms.

Global Regulatory Fragmentation

Manufacturers of rigid plastic packaging that operate internationally are facing a fragmented regulatory landscape. The definition of "recyclable packaging" varies significantly; Europe's mechanical recyclability criteria are quite different from those in Southeast Asia or the United States. For example, over 30 countries have implemented their own Extended Producer Responsibility (EPR) rules, many of which set distinct recycled-content requirements or mandate producers to take-back programs.

Disruptive Consumer Behaviour

Consumer behaviour is rapidly evolving, driven by sustainability concerns and the desire for convenience. Minimalist, refillable, or reusable packaging formats have gained popularity in premium personal care and household categories. Brands that do not adapt to these changing preferences risk losing their shelf appeal, especially in mature markets. Many beverages and FMCG companies have initiated refill-and-return programs across Europe and Asia, placing pressure on rigid plastic packaging providers to innovate with lightweight formats or higher recycled content. The shift towards "eco-conscious" packaging is no longer just a trend; it has become a competitive advantage that influences retailer acceptance and consumer loyalty.

Rising Inflationary Pressures

Inflation poses a challenge to the global packaging industry by increasing costs of key inputs such as polymers, paper, aluminium, energy and freight. Since packaging is often supplied under annual or fixed-price contracts, immediate cost pass-through is limited, leading to margin pressure. Elevated inflation also prompts FMCG and beverage companies to pursue lightweighting, pack-size optimisation and cost rationalisation, which can reduce packaging volumes and limit pricing flexibility for manufacturers.

High Entry Barrier

High entry barriers significantly challenge the global packaging industry due to capital-intensive operations, advanced machinery, and strict quality and regulatory standards in sectors like food and pharmaceuticals. Establishing manufacturing lines for materials such as plastics and paper requires substantial investment in technologies like extrusion and printing. Established companies benefit from long-term agreements, integrated sourcing, and economies of scale, making it difficult for new entrants to compete on price and reliability. Additionally, global brands require proven technical capabilities and certifications from suppliers, further complicating market entry for new firms, which limits competition and maintains dominance by well-capitalised manufacturers.

Regulatory challenges

The regulatory environment for plastic and bio-plastic packaging is becoming increasingly stringent, requiring companies to adapt to evolving environmental, quality, and safety norms. Compliance often involves higher spending on testing, certifications, product redesign, and process upgrades, increasing operating complexity and costs. These requirements can act as an entry barrier for smaller players, while favouring scaled players with established compliance capabilities.

Key global regulatory frameworks include:

- UK / International: Standards developed by the British Retail Consortium in collaboration with the Institute of Packaging Professionals set widely accepted benchmarks for packaging quality, hygiene, and safety.
- United States: Compostable plastics are evaluated under standards issued by the American Society for Testing and Materials, such as ASTM D6400, which assesses compostability under controlled conditions.
- European Union: EN 13432 defines criteria for packaging recoverable through composting and biodegradation, including suitability for organic recovery routes.
- India: Plastic packaging is regulated through Food Safety regulations, Extended Producer Responsibility (EPR) norms under the Plastic Waste Management Rules, and standards issued by the Bureau of Indian Standards.

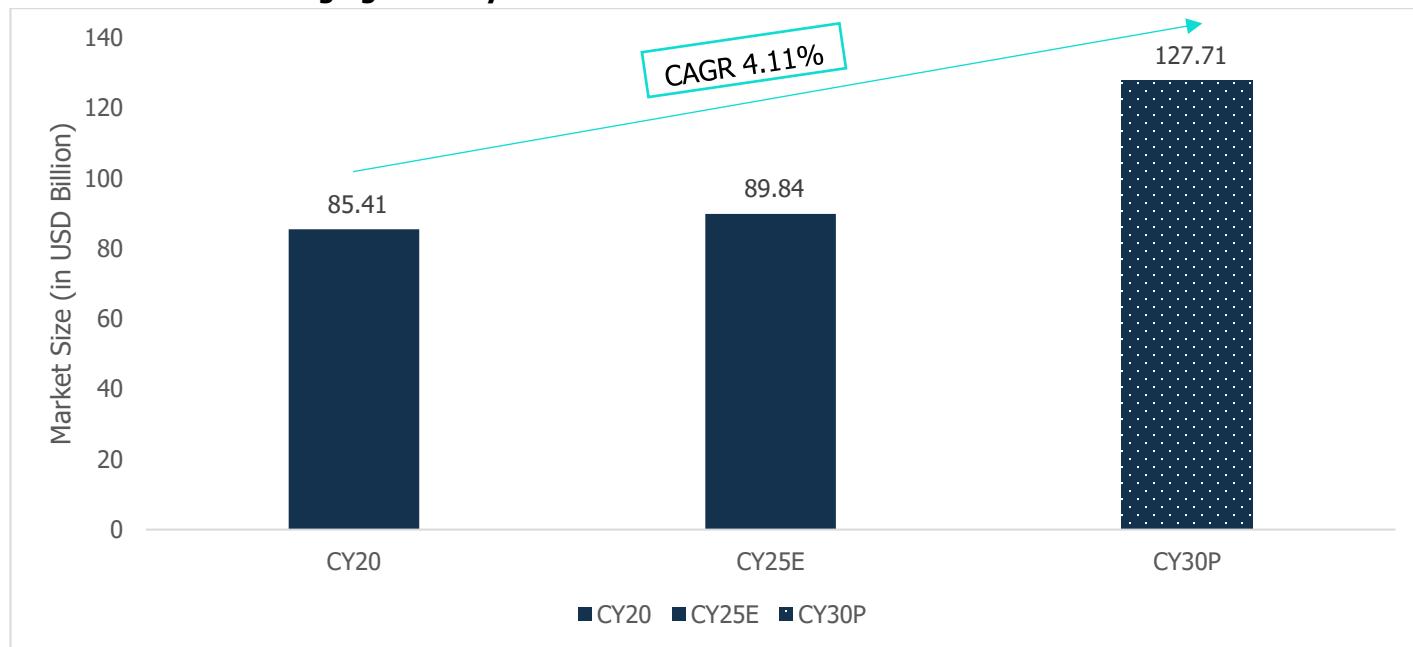
4 Overview of the Indian Packaging Industry

4.1 Overview & Market Size of the Indian Packaging Industry

The Indian packaging industry is one of the fastest-growing sectors in India, driven by increasing consumer demand, urbanisation, the growth of e-commerce, and a heightened preference for sustainable packaging. This sector plays a vital role across various industries, including fast-moving consumer goods (FMCG), food and beverages, pharmaceuticals, retail, and industrial applications, making it an integral part of India’s consumption and manufacturing ecosystem.

The industry is currently transitioning from traditional packaging to more lightweight, flexible, and sustainable solutions. This shift is being driven by the integration of technology and automation, which are transforming production processes.

Chart 31: Indian Packaging Industry Market Size

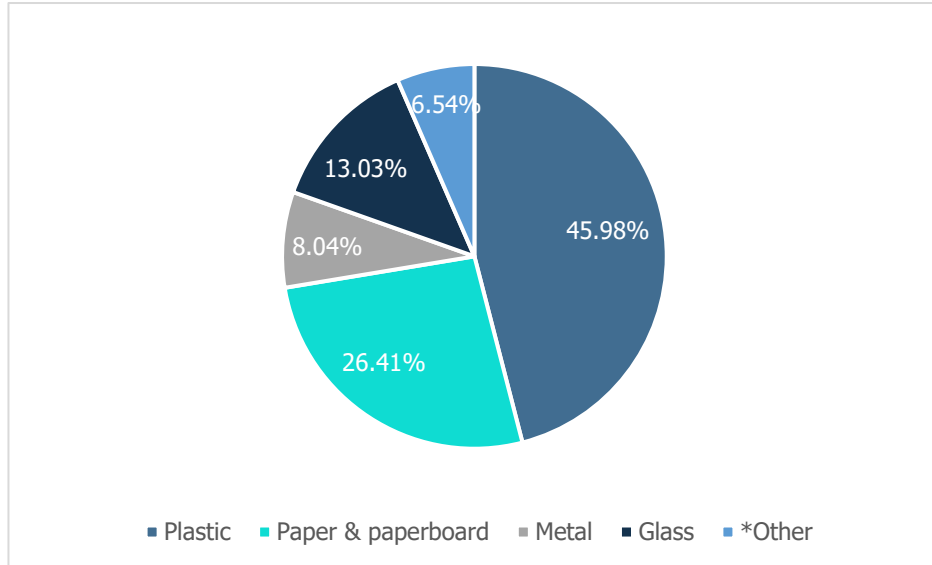


Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

In CY25, the Indian packaging industry is estimated to reach USD 89.8 billion (INR 7,739.61 billion), and it is further anticipated to reach USD 127.71 billion (INR 11,131.20 billion) by CY30, showing a compounded annual growth rate of 7.29% between CY25-CY30. This growth is supported by factors such as rising per capita income, the premiumisation of products, the E-commerce and quick commerce boom, and increasing exports that require packaging to meet global standards.

4.1.1 Segmentation of the Packaging Industry by Material Type

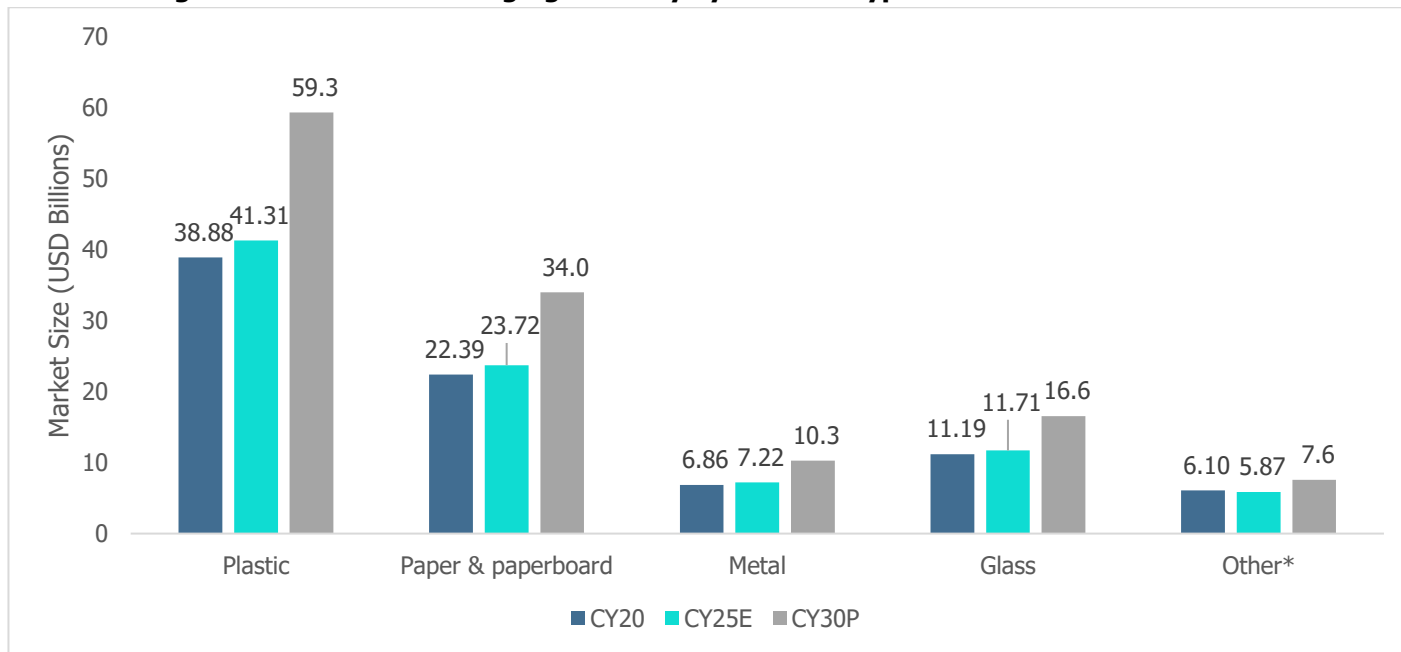
Chart 32: Market Share Breakup of Packaging Industry by Material Type (CY25E)



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected, *Others include wood, cloth, jute etc.

Plastic dominates India’s packaging landscape, making up about 46% of the market thanks to its affordability and wide use across food, FMCG, and pharma. Paper and paperboard follow at around 26%, and this segment is growing quickly as e-commerce expands and brands push for more sustainable packaging. Metal packaging holds a smaller 8% share, but demand for cans and aerosols is expected to keep growing at roughly 7% CAGR through CY25–30. Glass accounts for about 13%, supported by premium beverages and pharmaceutical uses where quality and safety are critical. The remaining 6.5% comes from other materials such as jute, wood, and an emerging biodegradable option.

Chart 33: Segmentation of the Packaging Industry by Material Type



Source: Cervicorn Consulting, CareEdge Research; E denotes estimated P denotes projected; *others include wood, cloth, jute, etc.

• Plastic Packaging

Plastic packaging remains the largest segment in the Indian packaging market because it's versatile, affordable, and applicable across a wide range of industries, with an expected market size of USD 41.31 billion (INR 3,558.44 billion) in CY25, contributing 46% of the total market. By CY30, the plastic packaging market is estimated to reach USD 59.3 billion (INR 5,169.18 billion), implying a CAGR of 7.50% from CY25 to CY30. The industry has been gradually transitioning toward recyclable materials and higher recycled content over the past decade, with this shift gaining momentum due to regulatory push, brand sustainability commitments, and improving recycling infrastructure.

In India, plastic packaging demand continues to rise alongside growing disposable incomes, urbanisation, and higher consumption of packaged food, beverages, dairy, snacks, and personal care products. Increasing preference for convenient, lightweight formats such as pouches, bottles, and rigid containers is driving higher unit volumes, with closures and caps growing in line with the expanding installed base of packaged products.



• Paper & Paperboard Packaging

Paperboard packaging includes cartons, boxes, and corrugated containers used for secondary and tertiary packaging. Paper & Paperboard packaging is expected to constitute around 26% of the total market in CY25 and is projected to grow by 7.47% and become USD 34 billion in CY30. This segment has experienced rapid growth, particularly with the expansion of e-commerce and the increasing preference for sustainable, recyclable materials. Paper-based packaging is easy to print on, making it suitable for branding and product display, while corrugated boxes offer strong protection for transit and storage. Indian manufacturers are investing in lightweight, high-strength paperboard to achieve a balance between durability and cost efficiency. Despite facing competition from plastics, paperboard remains the preferred choice for environmentally conscious consumers and businesses. Paper packaging is renewable, biodegradable, and widely recovered, with 70–85% recycling rates in many markets. It naturally decomposes within a few months under environmental conditions. While production requires substantial water and energy, its strong circularity and composability enhance its sustainability appeal.



• Metal Packaging

Metal packaging, primarily composed of aluminium and tinplate, is recognised for its strength, durability, and excellent barrier properties. Metal packaging is expected to constitute around 8% of the total market in CY25 and is projected to grow by 7.36% and become USD 10.3 billion in CY30. It is commonly used for beverages, canned foods, aerosols, paints, and industrial products. In India, the market remains stable, supported by the beverage and FMCG industries, alongside increasing demand for energy drinks and ready-to-drink products. Metal packaging aligns well with circular economy goals, as it is fully recyclable without losing quality. However, higher production costs and energy consumption present significant challenges for this segment.

Metal packaging (steel and aluminium) offers high recyclability, with strong scrap value driving collection rates typically between 60–80%. Recycled metal can be reused repeatedly with minimal quality loss, supporting robust circularity. Key challenges include high resource use during primary production and the need for clean, well-sorted scrap to ensure efficient recycling across different metal grades.



- **Glass Packaging**

The glass packaging industry was valued at USD 11.19 billion in CY20 and is expected to reach USD 11.71 billion in CY25, reflecting steady demand from core end-use segments. Supported by premiumisation trends, recyclability, and rising use in alcoholic beverages and pharmaceuticals, the market is projected to grow further and reach USD 16.6 billion by CY30, making up about 13% of the total market.

Glass packaging is primarily used for premium food items, alcoholic beverages, cosmetics, and pharmaceuticals. It offers a high level of product safety as it is non-reactive and provides an excellent barrier against contamination. Indian consumers often associate glass with quality and luxury, which reinforces its continued use in premium brands. However, its heavier weight and fragility increase transportation and handling costs compared to other materials, limiting its broader application in mass-market segments.

Glass can be recycled endlessly without quality loss, with 40–60% recycling rates depending on collection systems. It is chemically inert and suitable for repeated reuse cycles. Its heavier weight increases transport intensity, and high-temperature manufacturing makes production more resource-heavy despite strong recyclability.



- **Others:**

The “Others” segment covers smaller, niche packaging materials such as jute bags, wooden crates and pallets, textile packaging, cork, and other speciality formats typically used for industrial goods, agricultural produce, exports, and logistics. While not a large part of the overall market, these materials serve specific use cases where strength, reusability or sustainability matter more than scale.

The segment was valued at USD 6.10 billion in CY20, dipped slightly to USD 5.87 billion in CY25, and is expected to grow steadily to USD 7.60 billion by CY30. By CY30, “Others” is projected to account for approximately 5.95% of the total packaging market. Growth here is driven less by FMCG volumes and more by infrastructure activity, exports and rising preference for natural and reusable materials like jute and wood. Although smaller in size, the segment remains relevant as sustainability and circular-use packaging gain importance across supply chains.

- **Comparing Sustainability Across the Different Forms of Packaging**

Table 7: Comparing Sustainability Across the Different Forms of Packaging

Criteria	Plastic Packaging	Paper and Paper Board Packaging	Metal Packaging	Glass Packaging
Cost per Unit	★★★	★★	★★	★
Barrier requirement	★★★	★	★★★	★★★
Lower lifecycle carbon footprint	★★★	★★★	★★	★
Recycled %	★	★★	★★★	★★
Recyclability	★	★★	★★★	★★★
Biodegradability	★	★★★	★	★

Source: CareEdge Research

Note: ★★★ – Best | ★★ – Good | ★ – Poor

Plastic materials are generally efficient in terms of material usage and cost-effective, offering strong barrier properties. However, they tend to have lower recycling outcomes in practice. On the other hand, paper and paperboard excel in recyclability and biodegradability, but they usually provide limited barrier protection unless enhanced with additional treatments. Metal and glass offer excellent barrier performance and are highly recyclable, but they come with a higher unit cost. Therefore, the choice of packaging should be based on the specific needs for product protection and supply chain requirements, rather than focusing solely on one sustainability factor.

4.2 Key Trends and Growth Drivers

Key Trends in the Indian Packaging Industry

Shift from Unorganised to Organised Manufacturing

The packaging landscape is transitioning from a fragmented, localised supply base to larger, organised converters and integrated suppliers. Key drivers of this change include brand consolidation, retailer and exporter quality requirements, and investments by larger firms in automated converting, recycling, and testing facilities. This trend reduces regional variability in quality and increases scale efficiencies. Additionally, it accelerates partnerships for formal waste management and compliance with national Extended Producer Responsibility (EPR) requirements.

Premiumisation Driving Rigid/PET Formats

The rise of premium product lines in beverages, personal care, and gourmet foods is increasing the demand for high-quality rigid formats that convey value and protection. PET and rigid plastics are often used for premium-positioned beverages and personal care jars because they allow for a premium finish (such as labelling, shrink sleeves, and embossing) while being lighter than glass. Retailers and brands frequently choose rigid plastic when they need a premium look combined with lower transport costs and shatter resistance.

Technology, Automation & Lightweighting

Packaging companies are using better design tools and more automated production lines to use less material in each pack without compromising strength or safety. Thinner walls improved preform designs and optimised closures help cut material costs and make packs lighter to transport. Automation ensures consistent quality even as material usage is reduced.

Lighter packaging also means lower freight loads and fewer transport emissions, while generating less waste at the end of life. This is especially important in markets where recycling is still limited. Everyday examples include lighter PET bottles for drinking water and thinner HDPE drums for non-hazardous industrial liquids, which deliver the same performance using less plastic.

Shift from Glass and Metal

Product formats that traditionally used glass or metal are increasingly shifting towards lighter, more durable plastics in various applications. Edible oils, once commonly sold in glass bottles or metal tins, are now regularly packaged in PET bottles and HDPE containers for larger bulk formats, reducing breakage and transport costs. Shampoo and personal care bottles, which previously included some glass or metal premium options, are now predominantly available in PET or PP rigid bottles, with refill pouches emerging to cut down on single-use waste. Toothpaste packaging is also evolving, moving away from all-metal tubes to laminated PE/PP tubes and increasingly recyclable mono-polymer formats to simplify recovery. While spirits and other premium liquors largely remain in glass for reasons related to shelf presence and perceived quality, ready-to-drink and entry-level products are increasingly using PET. Paints and varnishes, historically packaged in steel tins, are seeing a shift towards more lightweight steel gauges, metal-plastic hybrid packs, and an increase in HDPE pails for smaller volumes to improve handling and reduce weight.

Product	Traditional Material	Current Trend
Edible Oil	Glass / Metal	3-layer / 5-layer flexible film pouches and Tin containers
Toiletries (Soap / Shampoo)	Paper / Glass	Plastic pouches and flexible films
MPCG (Cement / Fertiliser)	Jute	PP / HDPE woven sacks
Toothpaste	Metal	Plastic laminates (lamitubes)
Liquor	Glass	Recycled PET bottles
Aerated Beverages	Glass	PET bottles
Paints and Agrochemicals	Metal	Recycled PET / HDPE containers and Tinplate containers
Packaged Drinking Water	Glass	PET bottles
Snacks and Confectionery	Paper / Foil	Tin and multi-layer plastic laminates
Pharmaceuticals (Syrups)	Glass	PET bottles

Key Growth Drivers in the Indian Packaging Industry

PET and HDPE Dominance

PET and HDPE are gaining wider acceptance due to their cost-effectiveness, ease of processing, durability, and established recycling streams. PET is often preferred when clarity and barrier properties are required for beverages, while HDPE is typically chosen for its chemical resistance and strength (in products like detergents and oils). Their widespread use is supported by a growing domestic converting base and improving collection and recycling infrastructure for common bottle grades.

Growth in Specific End-Use Sectors

Demand for packaging is rising across several key sectors in the Indian market. The pharmaceutical sector requires sterile, tamper-evident, and traceable packaging such as blisters, vials, and sterile bottles to support both domestic demand and exports. The food and beverage sectors are increasing their use of pouches, PET bottles, and aseptic cartons to extend shelf life and reach distant markets. The FMCG sector demands small, convenient formats like sachets, pouches, and small rigid bottles to cater to urban and rural consumers.

Rising FMCG and Consumer Consumption:

The primary growth driver of the Indian packaging industry is the steady expansion of FMCG, food & beverages, pharmaceuticals and e-commerce. Rising disposable incomes, urbanisation and changing lifestyles are increasing demand for packaged, branded and convenience-oriented products. This directly drives higher demand for reliable, scalable and compliant packaging across formats, with manufacturers increasingly focusing on shelf-ready, transport-efficient and regulatory-compliant solutions to support growing volumes and wider distribution reach.

Rapid Growth of Food Delivery & Quick Commerce

The rapid expansion of food delivery platforms and quick-commerce models offering 10–30-minute delivery has meaningfully increased demand for durable, leak-proof and temperature-resistant packaging. Restaurants, cloud kitchens and grocery platforms increasingly depend on rigid containers, multi-layer packs and tamper-evident solutions to ensure food reaches consumers safely and in good condition.

With orders travelling longer distances and changing hands multiple times, packaging has become a critical part of the customer experience, not just a protective layer. As a result, packaging usage per order has increased, supporting sustained demand growth across foodservice, grocery and last-mile delivery channels.

4.3 Threats and Challenges

Raw Material Price Volatility

The Indian packaging industry is heavily impacted by fluctuations in crude oil derivatives, paper, and metals. These variations directly raise production costs and compress margins, particularly in a price-sensitive market. Flexible packaging faces notable challenges as global demand for plastics continues to rise.

Environmental & Regulatory Pressures

Strict regulations on single-use plastics and extended producer responsibility (EPR) compliance are reshaping the industry. While driving innovation, these measures also increase compliance costs and require investment in sustainable alternatives, often straining smaller players.

Intensifying Market Competition and Innovation Pressure

The Indian packaging industry is becoming increasingly competitive, with both domestic and international players entering key segments. To stay relevant, companies must continuously innovate in product design, material usage, and sustainable solutions. Failure to adapt to changing consumer preferences or industry trends can result in market share loss, pricing pressures, and reduced profitability.

Infrastructure & Logistics Constraints

Strong demand in Tier-2 and Tier-3 cities is often hampered by inadequate cold chain, warehousing, and logistics infrastructure. These inefficiencies raise distribution costs and complicate timely delivery.

Capital-Intensive Transition to Sustainable Materials

Switching to eco-friendly, recyclable materials requires significant investment in new technologies. Balancing sustainability with cost competitiveness remains a major challenge.

Supply Chain Dependency

The industry relies heavily on imports for certain speciality materials and additives. Disruptions in global supply chains, trade restrictions, or geopolitical tensions can lead to shortages, delays, and increased costs. Companies must build resilient sourcing strategies to mitigate these risks and ensure consistent production and delivery.

High Entry Barriers

High entry barriers pose a significant challenge for the Indian packaging industry as it becomes more technology-intensive and compliance-driven. Setting up modern packaging operations requires substantial investments in specialised machinery and quality control systems, which many smaller or new players cannot afford.

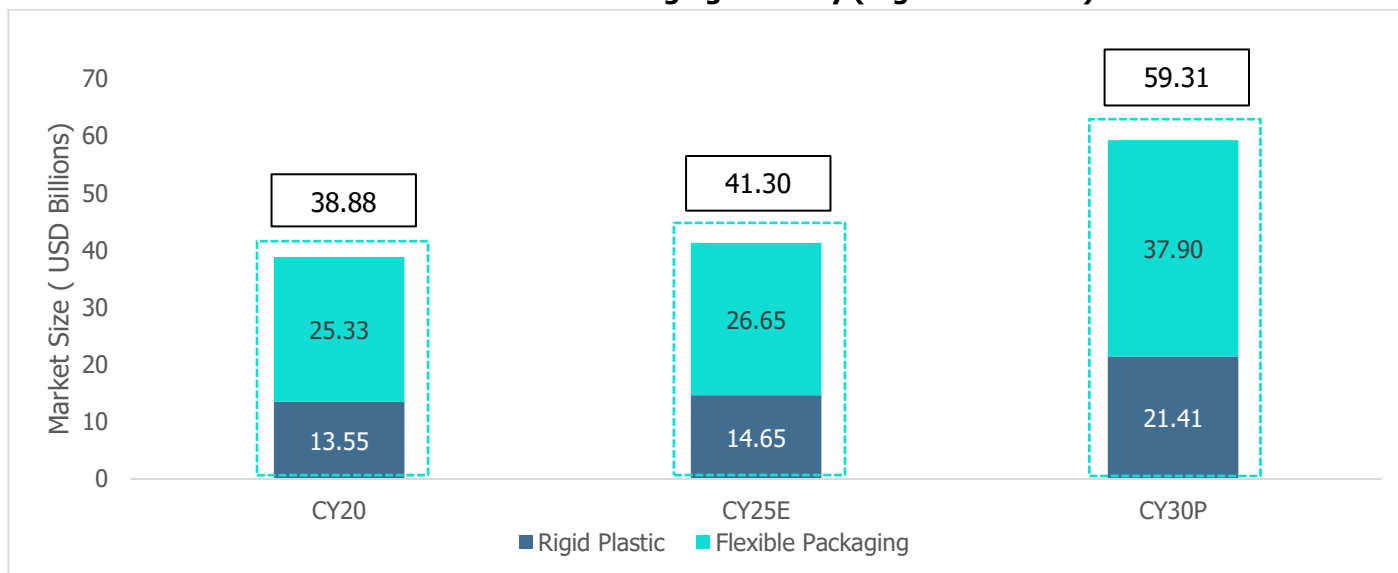
Strict regulatory requirements around food safety, pharmaceutical packaging, and Extended Producer Responsibility (EPR) compliance demand technical expertise and ongoing certifications. Additionally, large FMCG and pharmaceutical companies expect reliable supply and traceability, making it difficult for newcomers to secure long-term contracts. These financial, technological, and compliance demands create a high barrier to entry, limiting competition and reinforcing the dominance of well-capitalised, established players.

5 Overview of the Indian Plastic Packaging Industry

5.1 Overview and Market Size of the Indian Plastic Packaging Industry

The Indian plastic packaging industry is divided into rigid formats, such as bottles, jars, tubs, caps, and drums, and flexible formats, including pouches, sachets, films, and laminates. In recent years, flexible packaging has rapidly gained popularity due to its lightweight nature, affordability, and suitability for single-serve and on-the-go products. It has become the dominant choice in numerous food and snack categories, as well as for e-commerce transit packaging. On the other hand, rigid plastic packaging remains crucial in applications where strength, reseal ability, or thermal performance are important. This includes beverage bottles, edible oil containers, pharmaceutical vials, and drums for industrial liquids.

Chart 34: Market Size of the Indian Plastic Packaging Industry (Rigid vs Flexible)



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

In CY25, the Indian Rigid plastic packaging market is estimated to reach USD 14.65 billion (INR 1,262.09 billion) and USD 26.65 billion (INR 2,295.89 billion) for flexible plastic packaging, with expectations to grow to USD 21.41 billion (INR 1,866.07 billion) and USD 37.90 billion (INR 3303.10 billion) respectively by CY30. This growth reflects a CAGR of 7.88% between CY25-CY30 for Rigid plastic packaging and 7.30% for flexible packaging. The current evolution of the sector is influenced by three main factors: increasing consumer demand and the rise of e-commerce, brand commitments to incorporating recycled content and recyclable designs, and regulatory pressures targeting single-use plastics. In summary, while flexible formats lead in volume growth, rigid formats often command a higher value per unit in key strategic categories.

5.2 Market Size of Rigid Plastic Packaging- by Usage Type

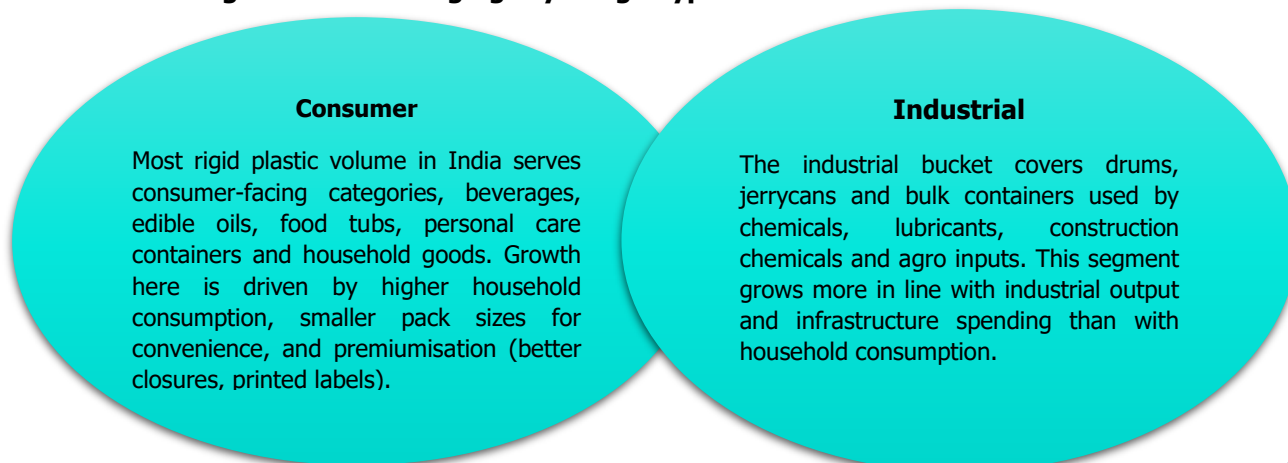
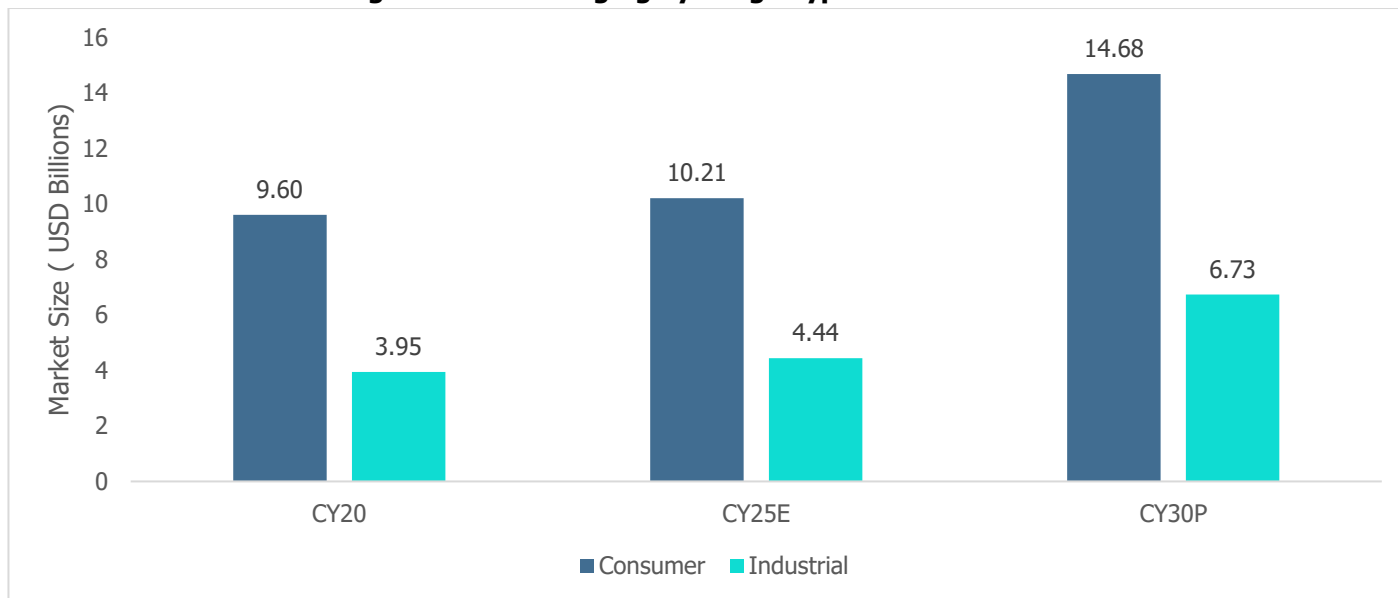


Chart 35: Market Size of Rigid Plastic Packaging by Usage Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The market size for the consumer segment is estimated to be around USD 10.21(INR 879.58 billion) in CY25 and is further expected to show a CAGR of 7.53% in the next 5 years and reach USD 14.68 billion (INR 1279.12 billion) in CY30, whereas the industrial segment is estimated to reach USD 4.44 billion (INR 382.57 billion) in CY25 and then show a CAGR of 8.67% in the next 5 years and reach USD 6.73 billion (INR 586.95 billion). Packaging used in the consumer segment dominates because India’s large FMCG market uses large volumes of bottles and tubs every day; industrial demand is steady but more cyclical, tied to manufacturing and capex cycles. As brands push recycled content into consumer packs, the consumer share is likely to remain the larger of the two even if industrial volumes see periodic upticks.

5.3 Overview and Market Size of the Indian Rigid Packaging Industry- by End User Type

Indian FMCG Industry-Food Segment

This sector is the largest consumer of rigid plastics. Key products like bottles, tubs, and trays for dairy, edible oils, sauces, and prepared foods drive major volumes. The rise of convenience foods and smaller packaging formats is fueling growth in this segment.

Indian FMCG Industry-Non-Food Segment

This includes personal care and household products that utilise rigid bottles and dispensers. Trends like premiumisation and the introduction of refillable packaging options are enhancing value, while brands are striving for greater recyclability in their products.

Indian Alcoholic Beverages Industry

Although glass remains the primary material for alcoholic beverages, rigid plastics are increasingly used in specific categories such as mass-market ready-to-drinks (RTDs), small bottles, and mixers. This sector is experiencing moderate but steady growth, with premium segments leaning towards glass.

Pharmaceutical

This sector requires high-value packaging that meets strict regulatory standards for sterility and traceability. Plastic bottles, closures, and medical containers demonstrate steady demand, supported by the need for reliable and compliant products.

Paints and Industrial Construction Chemicals

- Various containers, such as drums and pails, are used for paints, adhesives, and sealants. This market closely follows the trends in construction and renovation activities, contributing to its growth.

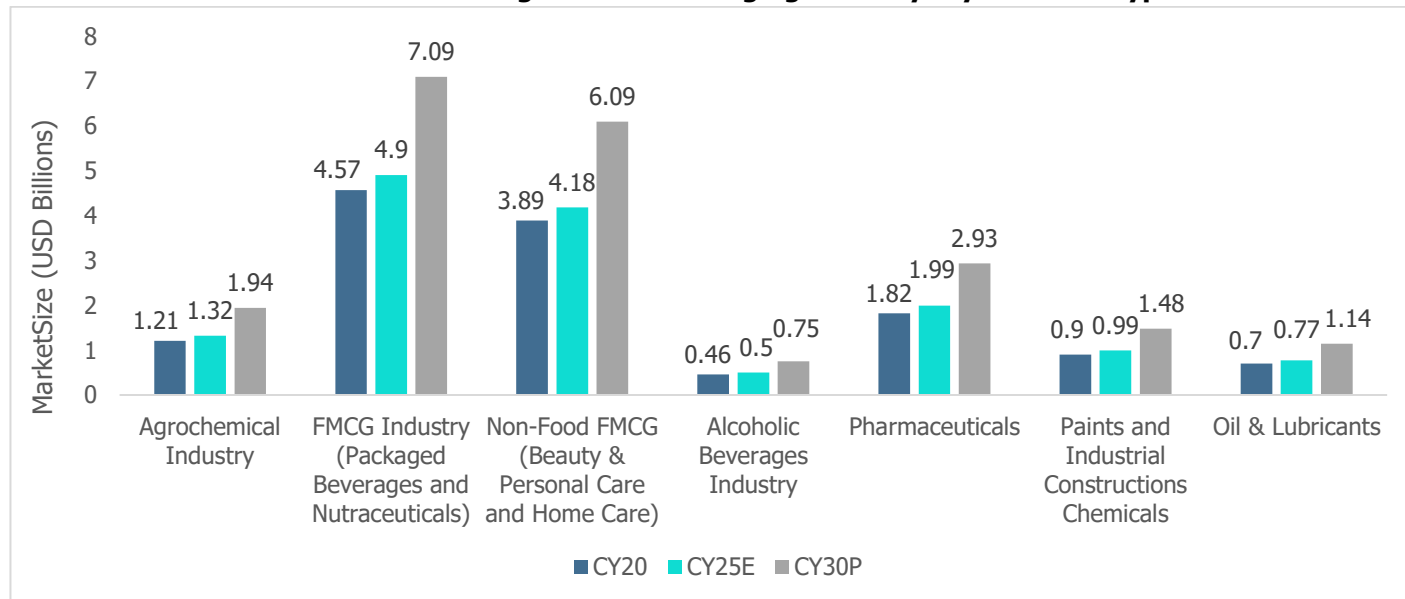
Oil and Lubricants

Significant volumes of rigid plastics are consumed here, particularly for engine oils, industrial lubricants, and multi-litre bottles. Demand in this sector is closely linked to automotive activity and overall industrial output.

Agrochemicals

While this sector has smaller volumes compared to FMCG, packaging for pesticides and fertilisers, along with small jerrycans and measuring bottles, remains vital. Market growth in this area is influenced by agricultural cycles and demand for inputs.

Chart 36: Market Size of the Indian Rigid Plastic Packaging Industry- by End User Type



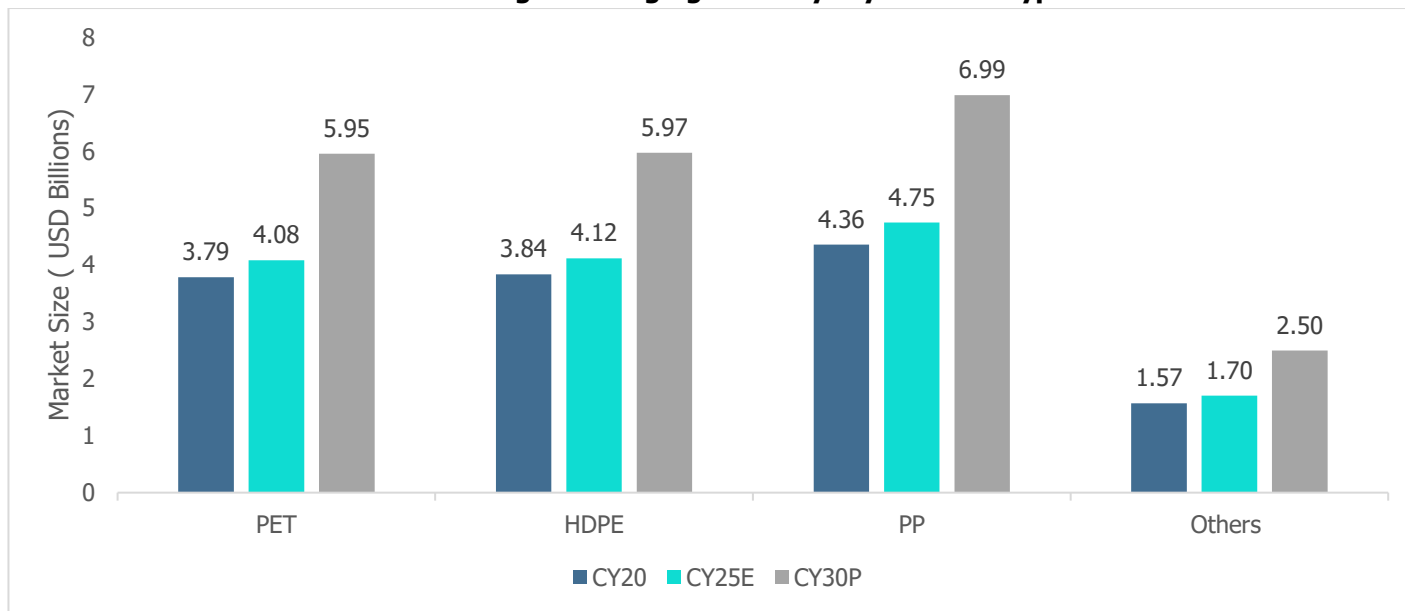
Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The FMCG (packaged food segment) holds the largest share in the Rigid Plastic segment and is expected to be valued at approximately USD 4.90 billion (INR 421.95 billion) in CY25. This value is expected to grow to around USD 7.09 billion (INR 617.94 billion) by CY30, showing a CAGR of 7.68%. Other materials in this segment are anticipated to grow at a CAGR of about 7-8% from CY25-CY30. Rigid plastics play a crucial role in India’s plastic packaging landscape, largely due to the reliance on sturdy, resealable containers for high-frequency consumer goods. The FMCG sector (food and non-food combined) is the primary driver, followed by higher-value segments like pharmaceuticals. Industrial demand adds a stable baseline, though it tends to be cyclical. Future growth will largely hinge on advancements in recyclability initiatives and investments in recycled resin supply.

5.4 Overview and Market Size of the Indian Rigid Packaging Industry- by Material Type

India's rigid plastic packaging industry primarily relies on three materials: PET, HDPE, and PP. These plastics account for most of the market demand. PET is commonly used for bottles and jars in beverages, edible oils, and personal care products, praised for its clarity, strength, and recyclability. HDPE is the preferred choice for household products, industrial containers, and large drums, thanks to its durability and resistance to chemicals. PP is often used for caps, closures, tubs, and thin-walled containers that require good rigidity and heat tolerance.

Chart 37: Market Size of the Indian Rigid Packaging Industry- by Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

PP is the fastest growing subsegment in the Indian rigid packaging sector and is expected to grow to USD 6.99 billion (INR 609.00 billion) by CY30 from USD 4.75 billion (INR 408.84 billion) in CY25, showing a CAGR of 8.04%. While Ethylene-vinyl Alcohol (EVOH) and other speciality resins hold a smaller market share; they are essential in food and pharmaceutical packaging, where enhanced barrier protection is necessary. PET ranks third in the rigid plastic market with an estimated market size of USD 4.08 billion (INR 351.89 billion) in CY25 and is expected to grow to USD 5.95 (INR 518.97 billion) by CY30, showing a CAGR of around 7.83% between CY25-CY30, driven by strong demand in beverages and edible oils. PP materials are supported by a steady demand for food trays, lids, and closures. HDPE, which is expected to reach USD 5.97 billion by CY30, is growing due to its extensive use in industrial drums, detergents, and milk packaging. Overall, India's market reflects a focus on affordability and versatility, with PP, PET, and HDPE maintaining dominance due to their easy availability and recyclability.

PET (Polyethylene Terephthalate)

Widely used for beverage bottles, edible oil, and FMCG packaging due to its clarity, strength, and food safety. PET is highly recyclable in India, supported by a strong bottle-to-bottle and bottle-to-fibre recycling ecosystem. Major demand comes from beverages, packaged water, personal care, and pharma.



HDPE (High-Density Polyethylene)

Preferred for packaging of milk, household chemicals, agrochemicals, and personal care products because of its rigidity and chemical resistance. HDPE is one of India's most recycled polymers, with a mature collection and reprocessing network. It is used heavily in FMCG, lubricants, paints, and industrial packaging.



PP (Polypropylene)

Commonly used in rigid containers, caps and closures, woven sacks, and food packaging due to high heat resistance and versatility. PP offers good recyclability and supports lightweighting trends across packaging. Its demand is strong in food, FMCG, pharmaceuticals, and e-commerce packaging.



Others (PS, PVC, EVOH, Bioplastics)

PS: **Disposable trays, cups**

PVC: **Blister packs, labels**

EVOH: **High-barrier layer**

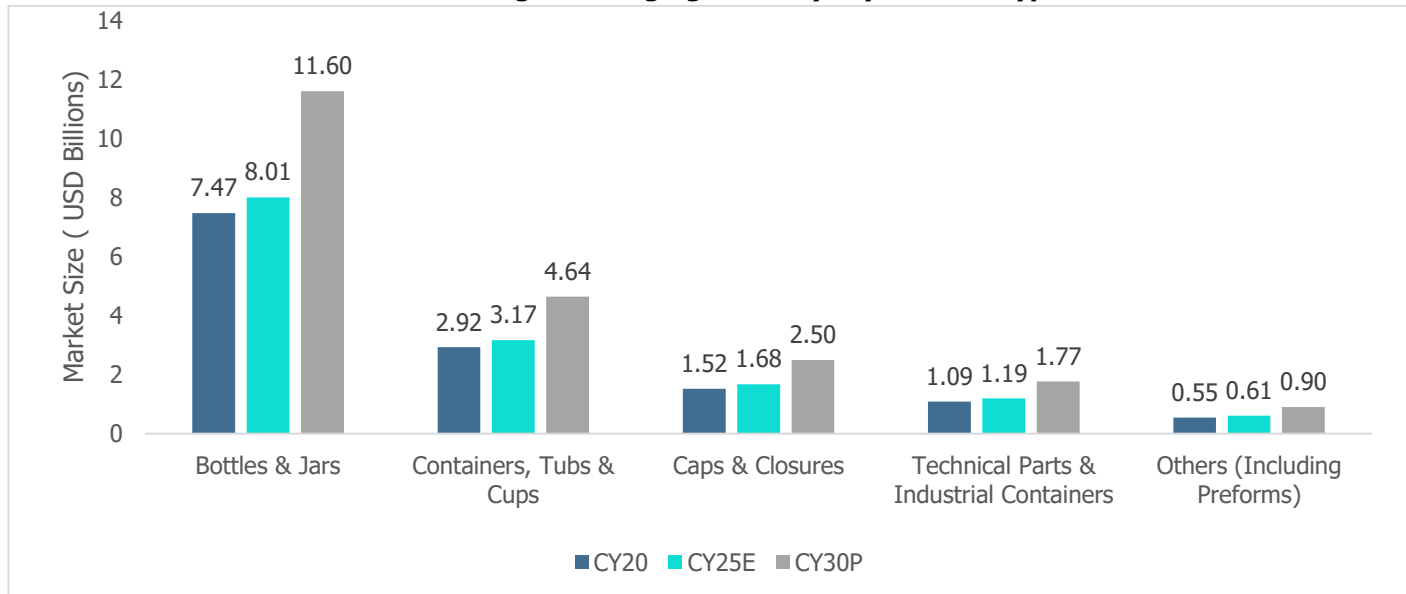
Bioplastics: **Compostable niche packs**



5.5 Overview and Market Size of the Indian Rigid Packaging Industry- by Product Type

The rigid plastic packaging industry in India primarily focuses on several product types, including PET bottles and jars, caps and closures, preforms, and containers used for both industrial and household purposes. PET bottles are widely utilised in sectors such as beverages, edible oils, and personal care products, while preforms represent an essential component in the packaging supply chain. Caps and closures are crucial for ensuring product safety, hygiene, and user convenience. Additionally, industrial and household containers, which range from small jars to large drums, address both consumer and bulk packaging needs.

Chart 38: Market Size of the Indian Rigid Packaging Industry- by Product Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

PET bottles and jars dominate rigid packaging production and are estimated to be valued at USD 8.01 billion (INR 689.72 billion) in CY25 and are further expected to reach USD 11.60 billion (INR 1011.14 billion) by CY30, displaying a CAGR of 7.69%, fuelled by demand from the beverage, edible oil, and dairy industries. Caps and closures are expected to show a CAGR of around 8.31% between CY25-CY30, highlighting their critical role across various packaging formats. Preforms represent a small share of the market, primarily supporting the rapidly growing beverage and bottled water sectors. Overall, demand in this sector is expected to rise steadily as consumer packaging consumption increases and manufacturing sectors expand, particularly in food and industrial goods.

• Bottles & Jars

Bottles and jars are one of the largest product categories in India’s rigid packaging market. This growth is primarily driven by demand from the beverage, home and personal care, pharmaceutical, and food sectors. PET (polyethylene terephthalate) and HDPE (high-density polyethylene) bottles are commonly used in high-volume applications such as water, carbonated soft drinks, edible oils, shampoos, and household cleaners, thanks to their lightweight nature, impact resistance, and cost efficiency. Rigid plastic jars are popular for spreads, confectionery, nutraceuticals, and personal care creams where visibility, resealability, and shelf appeal are essential. In addition to plastic formats, metal and tin-based containers are used in specific applications such as edible oils, speciality food products, and pharmaceutical formulations requiring enhanced barrier protection and extended shelf life. In the agrochemical sector, HDPE bottles and containers are predominantly used for pesticides, herbicides, and liquid formulations due to their chemical resistance and durability, while metal containers are utilised for certain formulations requiring superior protection from light, moisture, and external contamination. In the pharmaceutical sector, bottles made from HDPE, PP (polypropylene), and PET are used for syrups and tablets, meeting requirements for moisture protection, chemical resistance, and regulatory compliance. In addition,

the agrochemical sector is a key contributor, where HDPE and PET bottles are widely used for packaging pesticides, insecticides, and liquid fertilizers, owing to their chemical resistance, durability, and safe handling features. The growth in this category correlates with rising consumption of packaged goods, premiumization, and the expansion of organised retail and e-commerce, which favour durable and tamper-evident packaging formats.



• Containers, Tubs & Cups

This segment includes rigid packaging formats primarily used for dairy products, processed foods, quick-service restaurant (QSR) items, and ready-to-eat meals. Injection-moulded PP and PS (polystyrene) containers, tubs, and cups are commonly used for yoghurt, ice cream, spreads, instant noodles, and takeaway meals. In addition, tin-based packaging formats such as cans and containers are widely used for processed foods, edible oils, and shelf-stable ready-to-eat products due to their superior barrier properties, durability, and extended shelf life. Tin and other metal containers also find application in agrochemicals for storing pesticides, herbicides, and speciality formulations that require protection from moisture, light, and contamination, ensuring product stability and safe handling. These formats offer design flexibility, stackability, and compatibility with automated filling lines. Increasing urbanisation and rising demand for convenience foods have contributed to steady volume growth, while brand owners are focusing on lightweight and recyclable mono-material designs to meet sustainability expectations. Additionally, in-mould labelling (IML) and tamper-evident features are becoming standard in higher-value food applications, enhancing product differentiation and shelf presence.



• Caps & Closures

Caps and closures are critical functional components of rigid packaging systems, ensuring product integrity, leak prevention, and tamper evidence. This category includes screw caps, flip-top caps, dispensing closures, crown caps, and speciality closures used across beverages, personal care products, pharmaceuticals, and household chemicals. Polypropylene (PP) and high-density polyethylene (HDPE) are the primary materials used due to their mechanical strength and ease of molding. In beverages, lightweight closures compatible with PET bottles are commonly used, while child-resistant and induction-sealed closures are increasingly required in pharmaceuticals and chemicals. Innovations in this segment focus on reducing resin use, developing tethered caps, and improving sealing performance, in response to regulatory trends and brand efforts to minimise material use without compromising functionality.



• Technical Parts & Industrial Containers

This category includes rigid plastic components and large-format containers used in industrial, automotive, chemical, and infrastructure applications. Products in this segment include drums, jerry cans, crates, pallets, automotive molded parts, and customised technical components. High-density polyethylene (HDPE) and polypropylene (PP) are extensively used for industrial containers due to their chemical resistance and durability, while engineering plastics are utilized for specialised technical parts. Demand in this segment is closely linked to manufacturing activities, logistics, agriculture,

and chemicals. Key attributes include reusability and long service life, with returnable transit packaging systems increasingly adopted to enhance supply chain efficiency and reduce waste.



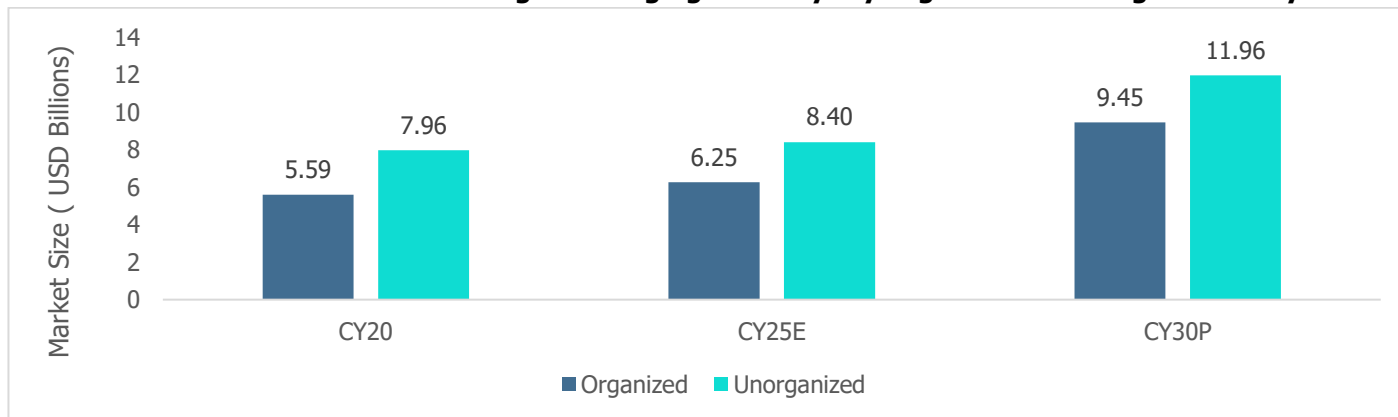
• **Others (Including Preforms)**

This segment encompasses intermediate and niche rigid packaging products, notably PET preforms used to manufacture bottles for beverages, water, and edible oils. Preforms are a critical upstream component, supplied to bottlers for stretch blow molding. Demand trends in this category mirror those of beverage and packaged water consumption. It may also include specialised rigid formats such as measuring cups, scoops, and small molded accessories used alongside primary packaging. Growth is influenced by increased capacity in beverage bottling, lightweighting initiatives, and technological advancements that enhance resin efficiency and output rates.

5.6 Overview and Market Size of the Indian Rigid Packaging Industry- by Organised vs Unorganised Players

India’s rigid plastic packaging market consists of both organised manufacturers with advanced facilities and unorganised local producers targeting price-sensitive customers. Organised players lead the sector in high-quality, large-scale applications such as beverages, pharmaceuticals, and personal care products, where consistency, hygiene, and compliance with regulations are crucial. In contrast, the unorganised sector remains active in low-value consumer and industrial packaging, benefiting from lower operational costs and proximity to regional demand.

Chart 39: Market Size of the Indian Rigid Packaging Industry- by Organised vs Unorganised Players



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The organised sector is estimated to reach around USD 6.25 billion (INR 538.68 billion) by CY25 and touch USD 9.45 billion (INR 823.72 billion) by CY30, displaying a CAGR of 8.62%, highlighting the increasing presence of branded FMCG, pharmaceutical, and export-focused industries that require standardised packaging. The unorganised sector holds most of the market. It is expected to reach USD 11.96 billion (INR 1042.43 billion) by CY30 from USD 8.4 billion (INR 723.57 billion) in CY25, meeting local or small-scale needs, particularly in agrochemicals, lubricants, and economical household products. However, its market share is decreasing as brand owners streamline their supply chains and adopt stricter sustainability and quality standards. The ongoing formalisation of manufacturing, along with investments in recycling and regulatory measures on plastic use, is expected to further increase the growth of organised players in the years ahead.

5.7 Key Growth Drivers and Trends of the Indian Rigid Plastic Packaging Industry

Rising Packaged Food and Beverage Consumption

India's rising demand for convenience foods and beverages is boosting rigid plastic packaging. Its lightweight, durable, and leak-proof design keeps products fresh and safe while making handling easy.

Design Versatility and Branding

Rigid plastics enable innovative shapes, colours, finishes, and closures, including tamper-evident caps and high-quality labelling. These features allow brands to differentiate themselves in crowded retail environments, creating visually appealing, functional packaging that strengthens brand recognition and consumer loyalty.

Cost Efficiency in Logistics and Supply

Rigid plastics offer significant advantages in freight and handling due to their light weight and resistance to breakage, compared to glass or tinplate alternatives. The availability of domestic resin production and recycling infrastructure ensures a consistent supply, reduces reliance on imports, and supports operational efficiency across the supply chain.

Transition to Recycled and Bio-Based Resins

In line with India's Extended Producer Responsibility (EPR) mandates and growing sustainability focus, manufacturers are increasingly using recycled PET (rPET), recycled HDPE (rHDPE), and bio-resin blends. This shift not only enhances environmental credentials but also strengthens the long-term relevance of rigid plastics in a circular economy framework.

E-commerce and Retail Boom

The expansion of e-commerce platforms and organised retail chains has amplified the need for transit-friendly, tamper-evident, and impact-resistant packaging. Rigid plastics safeguard product integrity during long-distance transportation and support efficient logistics, making them essential for modern retail supply chains.

5.8 Innovation and Technology in the Indian Rigid Plastic Packaging Industry

Advanced moulding techniques

Manufacturers are leveraging advanced moulding technologies such as injection moulding, blow moulding and extrusion blow moulding to create precise, consistent and feature-rich containers. These techniques enable high-volume, cost-efficient production with minimal material waste. They also enhance packaging performance across sectors, supporting hygienic food and beverage packs and premium, ergonomic designs in personal care. In the rigid plastic packaging industry, these technologies allow for stronger, lightweight structures and complex geometries that improve durability and functionality. Overall, modern moulding methods are raising quality and design standards across India's packaging industry.

Smart and Safe Packaging Solutions

To strengthen product integrity and ensure consumer safety, companies are increasingly incorporating tamper-evident closures, child-resistant caps, leak-proof structures and smart digital elements such as QR codes or NFC tags. These enhancements not only safeguard the product but also elevate transparency and traceability across the supply chain. By enabling authentication, reducing counterfeiting risks and offering interactive touchpoints for consumers, such features help brands reinforce trust, enhance user engagement and deliver a more secure, connected packaging experience.

Automation and Digitalisation

The integration of automation, robotics and digital monitoring systems is reshaping manufacturing efficiency across the packaging industry. Real-time data analytics, predictive maintenance and AI-enabled quality control are significantly reducing downtime, minimising human error and ensuring precise, repeatable production. Smart sensors and interconnected machines allow manufacturers to track performance minute-by-minute, optimise energy usage and respond instantly to deviations on the shop floor. This digital ecosystem not only boosts throughput and consistency but also supports scalable, future-ready operations that meet global standards for speed, accuracy and reliability.

Customisation and Brand Differentiation

Advances in high-resolution printing, embossing and premium decorative finishes are empowering brands to create packaging that truly stands out on the shelf. These technologies enhance visual appeal, elevate brand recognition and enable intricate, design-rich surfaces that reflect a product's identity and value. They also offer greater flexibility in shaping packaging formats to match evolving consumer preferences, from minimalist premium aesthetics to vibrant, youth-focused designs. Additionally, the ability to personalise small batches and adapt graphics quickly supports limited editions, seasonal launches and targeted marketing campaigns, giving brands a powerful edge in a highly competitive marketplace.

Barrier and Multi-Layer Technologies

The adoption of multi-layer plastic structures with enhanced resistance to oxygen, moisture and UV exposure is significantly improving product protection across food, beverage and pharmaceutical categories. These engineered materials deliver better performance comparable to glass or metal while remaining lightweight, cost-efficient and easier to transport and store. Advanced co-extrusion and layering techniques also allow manufacturers to combine different polymers, creating packaging that preserves freshness, safeguards sensitive formulations and supports longer shelf life even under demanding environmental conditions. This approach not only improves product stability but also enhances overall supply-chain efficiency

5.9 Investments in the Indian Rigid Plastic Packaging Market

The Indian rigid plastic packaging industry is attracting robust investment activity, emphasising its strong growth potential and evolving market landscape. Strategic mergers and acquisitions have been a key theme, aimed at achieving scale, expanding technological capabilities, and deepening market presence. Companies are also channelling capital into R&D and process innovation, adopting advanced technologies such as injection stretch blow moulding, thermoforming, and multi-layer barrier systems. These advancements are helping manufacturers produce lighter, more durable, and sustainable containers, particularly for high-demand sectors like food, beverages, pharmaceuticals, and personal care.

On the capacity front, the industry continues to see significant capital expenditure. Leading players in Packaging are setting up new plants to enhance production capabilities and meet rising domestic demand. In addition, joint ventures and strategic collaborations are emerging as important growth enablers, facilitating knowledge exchange, product diversification, and market expansion. Government initiatives, including the proposed Production Linked Incentive (PLI) scheme for packaging materials, are expected to further boost domestic manufacturing, reduce import reliance, and generate employment. Collectively, these investments are driving the industry toward greater technological sophistication, operational efficiency, and long-term competitiveness, positioning India as a key global hub for rigid plastic packaging solutions.

5.10 Threats and Challenges for the Indian Rigid Plastic Packaging Industry

Raw Material Price Volatility & Margin Pressure

Fluctuating prices of key resins such as PET, HDPE, and PP, driven by crude oil trends and import dependency, create pricing instability, squeeze margins, and particularly strain smaller players.

Regulatory Pressure & Compliance Costs

Tightening Plastic Waste Management Rules and Extended Producer Responsibility (EPR) mandates are restricting single use plastics and enforcing recycled content targets. Compliance adds complexity, monitoring costs, and operational burdens for manufacturers.

Competition from Alternative Materials & Brand Perception Risks

Glass, paperboard, and metal are increasingly being positioned as eco-friendly alternatives across food, personal care, home care, pharmaceuticals, and industrial packaging. At the same time, heightened consumer and regulatory scrutiny around plastic waste continues to shape material choices. Negative perceptions of plastic packaging compel brands to invest more in sustainability credentials, recyclable designs, and consumer education, adding to costs and influencing long-term substrate selection.

Sustainability Expectations & Environmental Scrutiny

With consumers, investors, and regulators all pushing for greener practices, companies are under pressure to adopt sustainable packaging and cut down their carbon footprint. Those that don't move fast enough risk losing trust, credibility, and ultimately, market share.

Market Fragmentation & Intense Price Competition

Since the industry is made up of many small and regional players, competition is intense and pricing is highly aggressive. This makes it hard for companies to raise prices when costs go up, as consumers are very sensitive to even small changes in price trust, credibility, and ultimately, market share.

Recycling Infrastructure & Technological Gaps

India still lacks a strong collection and recycling network, especially outside major cities, making it difficult for manufacturers to source good-quality recycled materials. At the same time, the high cost of modern moulding and equipment makes it harder for many players to upgrade and improve

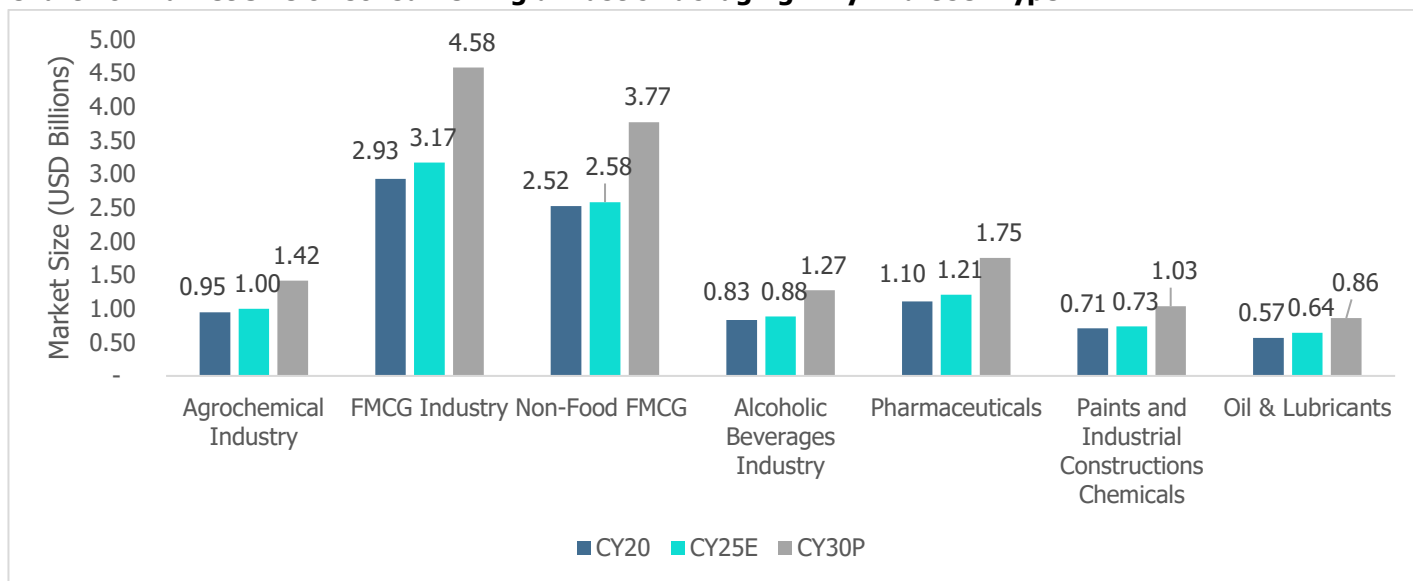
Entry Barrier

A major threat and challenge for the Indian rigid plastic packaging industry is the high entry barrier created by heavy capital requirements, strict regulatory norms, and the stronghold of established players. New firms struggle to match the economies of scale, distribution strength, and customer trust enjoyed by incumbents. Limited access to raw materials and long qualification cycles makes market entry even harder, posing a continued challenge to industry growth and competition.

6 Overview of End-User Segments of the Indian Packaging Industry

India’s consumer rigid plastic packaging market is expected to grow steadily through 2030, led by FMCG and pharmaceuticals. FMCG remains the largest segment, estimated to grow from USD 2.93 billion in CY20 to USD 4.58 billion by CY30, while non-food FMCG growth is expected to reach USD 3.77 billion by CY30 on the back of premiumisation. Pharmaceutical packaging is expected to reach USD 1.75 billion by CY30, driven by higher healthcare spending and stricter regulations. Other segments such as agrochemicals, alcoholic beverages and paints show moderate growth, while oil & lubricants remain relatively small.

Chart 40: Market Size of Consumer Rigid Plastic Packaging – By End User Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

Note: FMCG Industry includes Food & Beverages, Non-Food FMCG includes Beauty, Personal Care and Home Care

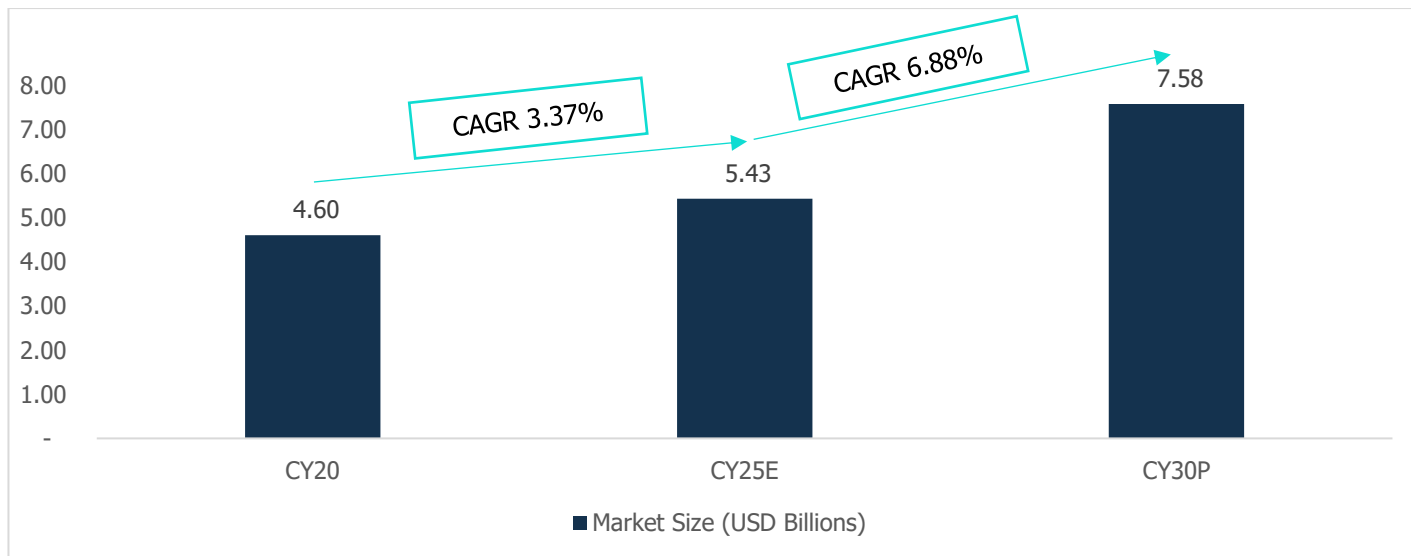
6.1 Overview of the Indian Agrochemical Industry

Agriculture is the primary source of livelihood for about 58% of India’s population. As a result, the share of agriculture and allied sectors to the total economy’s Gross Value Added (GVA) has been significant and has increased over the years. The expansion in the share of agriculture and the allied sector’s GVA is backed by an upward trend in the GVA of agricultural activities. The growth in agriculture GVA has been supported by various measures on credit, market reforms, and food processing. Moreover, in addition to several measures aimed at increasing productivity and improving the marketing of agricultural produce, the government also carries out a large food management programme with significant financial implications in terms of food subsidies. The growth in the agriculture sector is expected to result in more demand for agrochemicals in India, thus aiding its overall production and consumption.

6.1.1 Market Size of the Indian Agrochemical Industry

The Indian agrochemical industry is a multifaceted sector that includes active ingredients (technicals), formulated products such as pesticides, herbicides, fungicides, and bio-pesticides, as well as pack-level services that encompass filling, labelling, and small-pack distribution. This industry not only caters to domestic crop protection needs but also serves a significant export market, comprising large formulators, active ingredient manufacturers, and a network of co-packers and packaging suppliers that provide both rigid and flexible containers to ensure compliance with safety and handling standards.

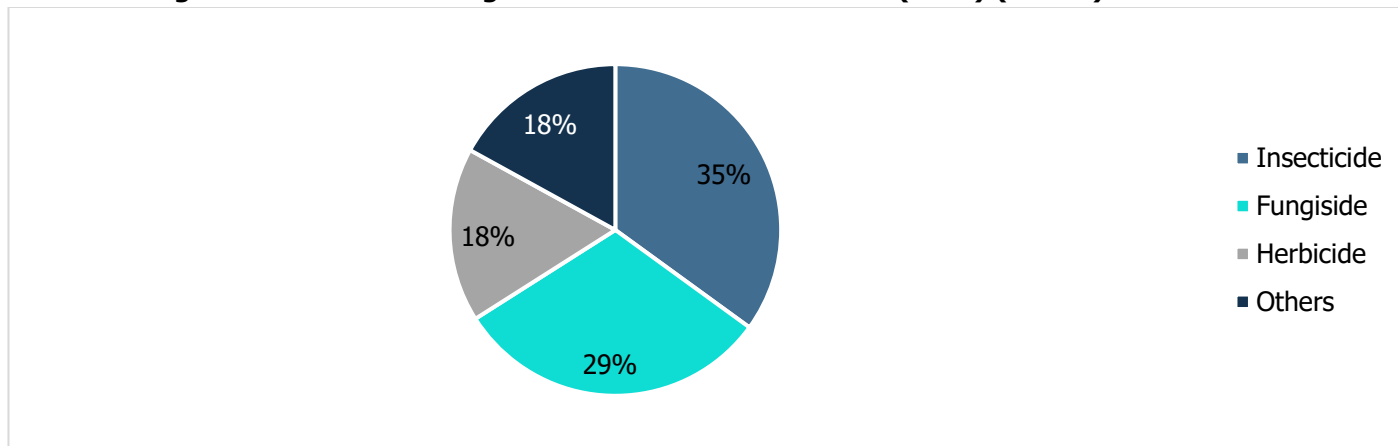
Chart 41: Market Size of the Indian Agrochemical Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

In CY25, the Indian Agrochemical market is estimated to reach USD 5.43 billion (INR 468.15 billion), with expectations to grow to USD 7.58 billion (INR 660.50 billion) by CY30. This growth reflects a CAGR of 6.88% between CY25-CY30. Factors like regulatory oversight, crop patterns, and seasonal demand heavily influence production and packaging cycles within this sector. The complexity of agrochemical production necessitates a sophisticated approach to packaging, ensuring that products are stored and transported safely while also being accessible to consumers and agricultural professionals alike.

Chart 42: Segment-Wise Share of Agrochemicals in Indian Market (in %) (CY25E)

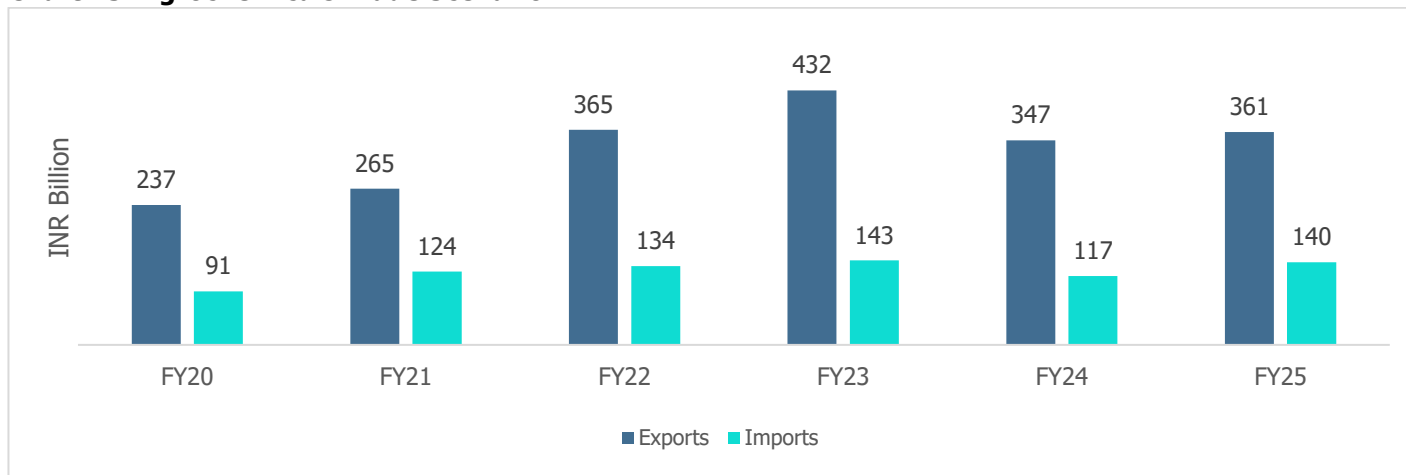


Source: Based on Industry sources, CareEdge Research estimates, Directorate of Plant Protection, Quarantine & Storage
Note: Others include- Rodenticides, PGR and Bio- Pesticide

6.1.2 Trend of Domestic vs Export

India's agrochemical trade has witnessed significant shifts over the past five years, driven by global demand dynamics, supply chain disruptions, and pricing trends. Exports surged in FY23, benefiting from China's supply constraints, higher global agrochemical prices, and strong demand from Latin America and North America. However, the decline in FY25 reflects market corrections, inventory adjustments, and moderating prices. Imports have remained stable but saw a slight dip in FY25, possibly due to local production expansion and reduced reliance on foreign raw materials.

Chart 43: Agrochemicals Trade Scenario

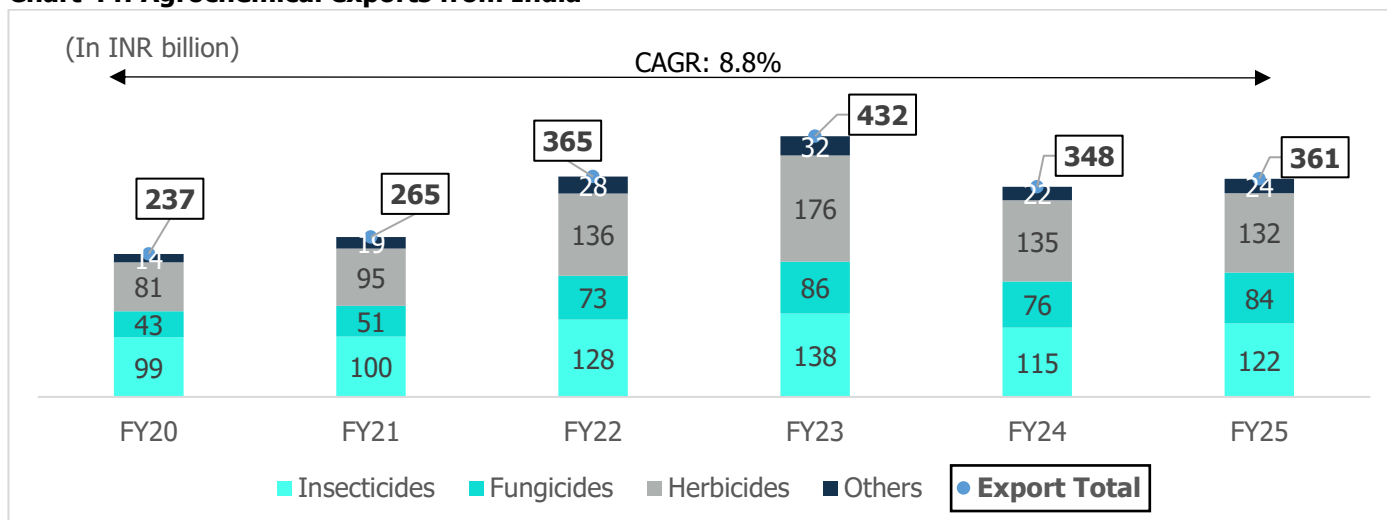


Source: Ministry of Trade & Commerce, CareEdge Research

Exports scenario

India’s agrochemical exports have grown at a CAGR of 8.78% from FY20 to FY25, driven by rising global demand, competitive manufacturing, and China’s supply constraints. The export surge in FY22 and FY23 was fuelled by higher herbicide and insecticide demand, favourable pricing, and supply chain shifts. However, FY24 saw a correction, reflecting inventory adjustments, price stabilisation, and reduced global demand. Insecticides and herbicides continue to dominate exports, while fungicides have shown consistent growth.

Chart 44: Agrochemical exports from India

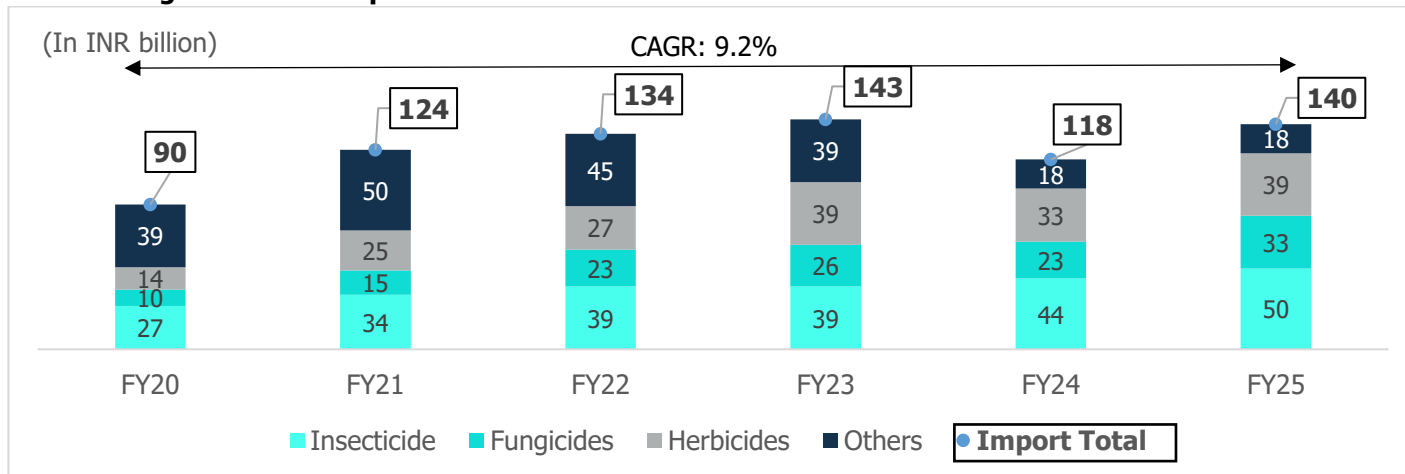


Source: Ministry of Trade & Commerce, CareEdge Research

Imports Scenario

India’s agrochemical imports grew at a CAGR of 9.24% from FY20 to FY25, rising from Rs 90 billion to Rs 140 billion, reflecting the country’s continued reliance on key raw materials and intermediates. The increase in imports was driven by rising domestic demand, higher input costs, and dependence on China for key agrochemical ingredients. However, the growth rate remained moderate as Indian manufacturers are emphasising backward integration efforts. The slight decline in FY24 imports suggests a shift towards domestic sourcing and improved supply chain resilience.

Chart 45: Agrochemical Imports in India

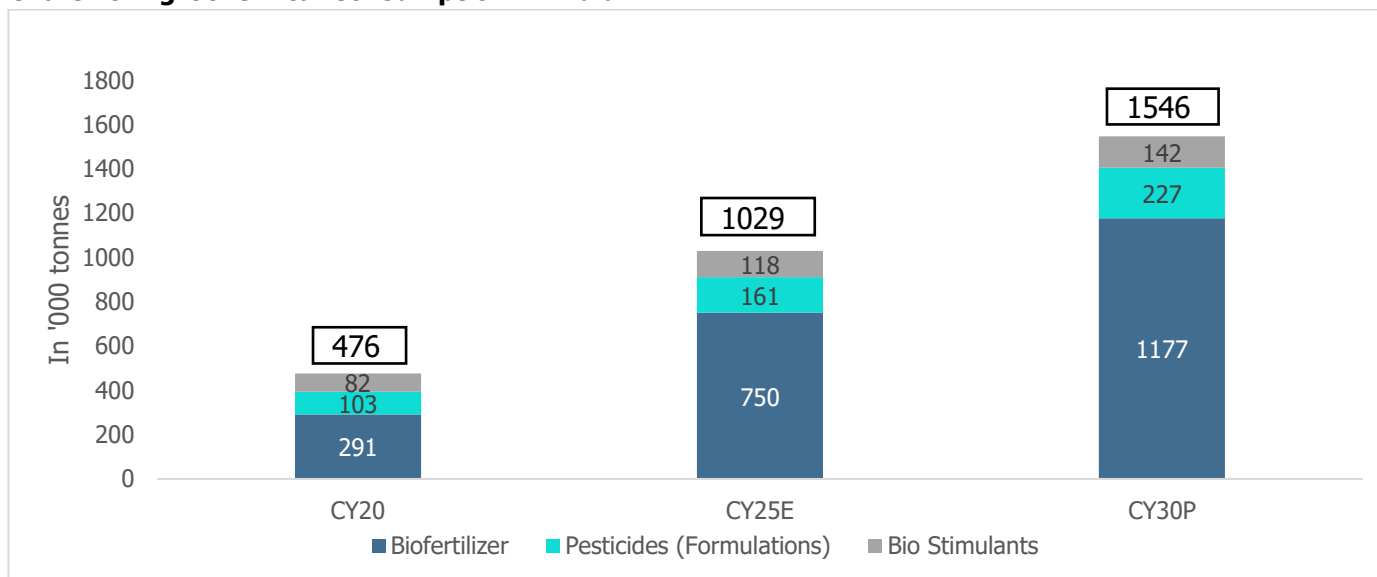


Source: Ministry of Trade & Commerce, CareEdge Research

Consumption & Penetration of Agrochemicals in India

The consumption of agrochemicals in India has witnessed steady growth, estimated to reach 1029 thousand tonnes in CY25, up from 476 thousand tonnes in CY20. The demand is expected to be primarily driven by biofertilizers, which account for 750 thousand tonnes in CY25, followed by pesticide formulations (161 thousand tonnes) and bio stimulants (118 thousand tonnes). The trend is expected to continue, with total consumption projected to touch 1,546 thousand tonnes by CY30, growing at a CAGR of 9%. The growth is attributed to increasing adoption of sustainable farming practices, government incentives, and rising awareness of soil health.

Chart 46: Agrochemical Consumption in India

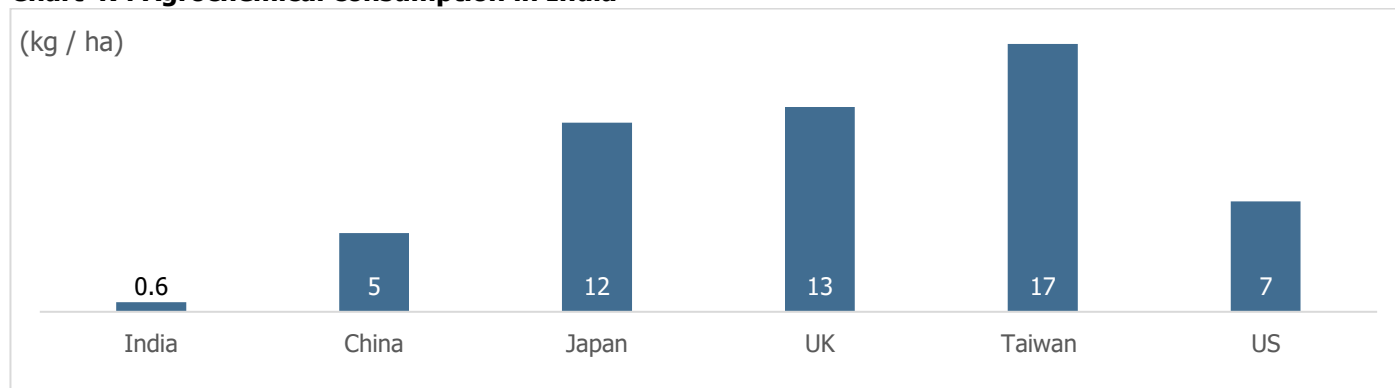


Source: CareEdge Research, Maia Research, E denotes estimated

The per-hectare consumption of pesticides in India is among the lowest globally, at just 0.6 kg/ha, compared to 5–7 kg/ha in the UK and 13 kg/ha in China. In India, pesticides are applied to about 40% of the total cultivated area, with nearly 65–70% of this treated land being irrigated. This lower pesticide usage may be attributed to a combination of factors, including diverse cropping patterns, regulatory policies, and the prevalence of rainfed agriculture. In contrast,

countries like Taiwan, the UK, and Japan have higher application rates, likely due to intensive farming practices and the need for greater crop protection.

Chart 47: Agrochemical consumption in India

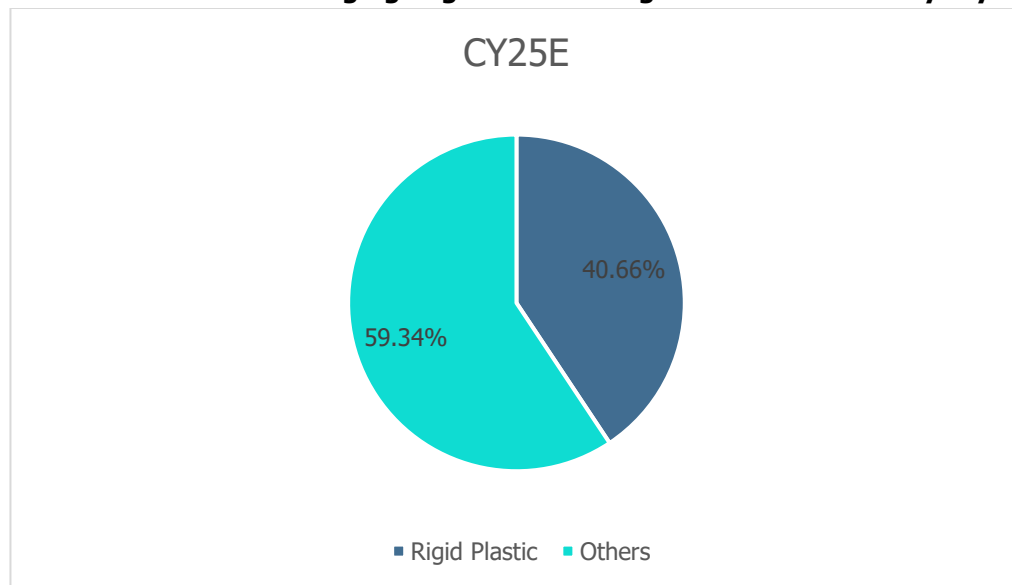


Source: Secondary sources, CareEdge Research

6.1.3 Share of Packaging Segment in the Agrochemicals Industry - By Material Type

Overall, Packaging expenses consists of around 5% cost of the Agrochemical players. Hence, the Agrochemical Packaging Market is estimated to be around INR 23.39 Billion in CY25 growing from INR 21.33 Billion in CY24.

Chart 48: Share of Packaging Segment in the Agrochemicals Industry- by Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated Note: Others include Other Includes flexible plastic, metal, paper & paperboard, and others

Rigid plastics make up 40.66% of packaging in the agrochemicals sector, driven by their ability to resist corrosion, prevent chemical reactions, and maintain product stability during storage and transport. Materials such as HDPE and PET are widely used in bottles, jerry cans, and containers for liquid formulations where safety, durability and barrier performance are critical. The remaining 59.34%, grouped as “others,” includes flexible plastics, metal, and paper-based packaging used for powders, granules, and sachets, catering particularly to smaller SKUs and cost-sensitive rural markets.



6.1.4 Key Trends and Growth Drivers in Packaging in the Agrochemicals Industry

Key Trends in the Agrochemical Packaging Industry

- **Regulatory Push for Traceability and Enhanced Labelling**

Regulators are placing greater focus on batch traceability, clear labelling and the use of QR codes to ensure product authenticity and safety. This is increasing demand for high-quality rigid containers that can support detailed printing and durable labels. These measures also help reduce counterfeit products, thereby encouraging the use of compliant and standardised packaging solutions.

- **Packaging is increasingly used as a branding and communication tool**

Agrochemical companies increasingly use packaging to communicate brand identity, product information, and safety features, making containers an important tool for strengthening brand visibility and customer trust.

- **High-Quality Printing and Distinct Packaging for Product Differentiation**

Advanced printing, durable labels, and distinctive bottle designs help agrochemical brands differentiate their products on shelves while improving product recognition and supporting stronger market positioning.

- **Technological Advancements in Rigid Packaging Manufacturing**

Adoption of advanced blow-moulding and injection-moulding technologies has improved consistency, scale and cost efficiency in rigid packaging. In addition, the use of barrier technologies in rigid containers helps protect agrochemical products from moisture, UV exposure and contamination, supporting premium and higher-margin packaging products.

- **Shift Towards Plastic-Based Packaging Solutions**

Agrochemical manufacturers are increasingly adopting HDPE, PET, and multilayer plastic containers due to their chemical resistance, durability, and cost-effectiveness. Plastic packaging is also replacing metal and glass in select formulations, supporting higher volumes for plastic packaging players.

Key Growth Drivers in the Agrochemical Industry

- **Government Support**

The government provides aid to the rural economy through various budget announcements that aim at reviving rural areas and raising farmers' income. In addition, growth in credit facilities to farmers through institutional credit mechanisms and low-interest-rate farm loans is likely to motivate farmers towards the usage of pesticides that help

increase the productivity and yields of crops. Besides, the increased minimum support price (MSP) of crops may also contribute to pesticide usage. Policies such as fertiliser subsidies, credit support through Kisan Credit Cards (KCC), and income support under PM-KISAN improve farmers’ purchasing capacity, indirectly supporting demand for crop protection products.

• **Increased Emphasis on Product Authenticity and Quality Assurance**

Counterfeit and substandard agrochemicals negatively impact farmers' outcomes and damage brand credibility. To safeguard market share and meet buyer expectations, companies are investing in packaging that facilitates product identification, batch traceability, and supply chain transparency.




• **Growing Agrochemical Consumption and Formulation Intensity**

Rising crop protection needs, increasing pest resistance, and the greater use of speciality formulations are driving both the volume and variety of agrochemicals available in the market. As the number of formulation types expands, such as liquids, suspensions, emulsions, and granules, the demand for packaging not only increases in volume but also becomes more technically complex. This requires containers that offer higher chemical compatibility and stability.

• **Expansion of Domestic Manufacturing and Export Orientation**

India is a significant producer and exporter of generic agrochemicals. Export markets often impose stricter packaging standards, including labelling requirements, transport safety compliance, and traceability. As manufacturers increase their global presence, there is a rising demand for higher-quality packaging that meets international standards for handling, storage, and shipping.

6.1.5 Key players in the market

Company	Description
	<p>Syngenta is one of the world’s leading crop protection companies, with a wide range of herbicides, fungicides, insecticides and seed products. Its products are supplied in standard agrochemical packaging such as HDPE or PET bottles, jerrycans, drums and bulk containers, depending on product type and market. The company has been working on improving packaging safety and sustainability, including pack designs that support closed transfer systems to reduce spills and operator exposure. Packaging decisions are closely linked to global regulatory requirements, safe handling, and the company’s environmental commitments.</p>
	<p>PI Industries Limited operates in the agrochemical segment, supplying crop protection and speciality chemicals, including products such as fungicides (e.g., Mancozeb formulations), insecticides (e.g., Chlorpyrifos blends) and herbicides. The company uses rigid packaging formats such as HDPE drums and jerrycans for liquid formulations, multilayer flexible pouches for smaller packs, and cartons/labels for regulatory and safety information. PI Industries’ packaging priorities include safe containment for hazardous chemistries, improved closure systems, material efficiency, and efforts toward recyclability and compliance with environmental and transport regulations.</p>
	<p>Rallis India, part of the Tata Group, offers a broad range of crop protection products and seeds through an extensive distribution network. Its products are packed in farmer-friendly sizes such as small bottles, sachets, cans and larger containers. The company operates multiple manufacturing and processing sites with integrated packaging lines to handle large volumes. Packaging choices are mainly driven by regulatory labelling norms, product stability, and ease of handling and storage in rural markets.</p>

	<p>Dhanuka Agritech manufactures and markets a wide portfolio of insecticides, herbicides and fungicides. Products are sold in standard pack sizes such as bottles, jerrycans and sachets suited to small and medium farmers. The company’s packaging approach focuses on safety, product shelf life and clear instructions for use. While no major packaging overhaul has been highlighted publicly, its packaging practices follow industry standards for compliance and efficient retail distribution.</p>
	<p>Coromandel International Limited operates in the agrochemical segment with crop protection products such as lambda-cyhalothrin insecticides and glyphosate herbicides. The company uses rigid packaging formats including HDPE drums and jerrycans for liquid formulations, multilayer flexible pouches for smaller retail packs, and cartons/labels for regulatory and safety information. Packaging efforts focus on safe containment for hazardous chemistries, closure reliability, material efficiency and compliance with environmental and transport regulations.</p>
	<p>Sharda Cropchem Limited operates in the agrochemical segment, supplying herbicides, insecticides and fungicides such as imidacloprid and profenofos. Packaging is dominated by HDPE drums and jerrycans for liquid products, multilayer pouches for smaller packs, and cartons/labels for traceability and regulatory compliance. Sharda places emphasis on secure, chemically compatible packaging, lightweight containers and material efficiency for distribution and storage safety.</p>
	<p>Bharat Rasayan Limited operates in the agrochemical segment with products such as chlorpyrifos formulations and cypermethrin insecticides. The company uses HDPE drums and jerrycans for liquid formulations, flexible pouches for smaller sizes, and cartons/labels for regulatory and safety information. Packaging design focuses on chemical compatibility, safe containment, material efficiency and adherence to transport and environmental norms.</p>
	<p>Meghmani Organics Limited operates in the agrochemical segment with products including quinalphos insecticide and endosulfan alternatives. The company uses HDPE drums and jerrycans for bulk liquids, multilayer flexible pouches for smaller retail packs, and cartons/labels for compliance and branding. Packaging priorities include safe, chemically compatible containers, optimize material usage, and compliance with hazardous goods transport and environmental standards.</p>
	<p>Gharda Chemicals is a research-focused company producing crop protection technicals and formulations. Packaging includes bulk industrial formats for technical products and standard retail packs for formulations. With a strong export presence, its packaging systems are designed to meet international safety, storage and transport standards. Packaging is treated as an operational requirement linked to compliance and safe handling.</p>
	<p>IIL manufactures a wide range of insecticides, herbicides and fungicides for domestic and export markets. Products are packed in small and medium retail sizes suitable for farmers, supported by formulation plants with integrated packaging facilities. The company places importance on safe usage and clear labelling, which influences pack design and information provided on containers. Packaging supports product protection, user safety and distribution efficiency.</p>



Crystal Crop Protection markets various crop protection products and seeds across India and export markets. Packaging includes common retail agrochemical formats as well as export-compliant packs. With regular product launches and market expansion, packaging needs to be adaptable to different regulations and customer requirements. Decisions around packaging are mainly product-specific and focused on compliance, shelf life and smooth logistics.

Source: Cervicorn Consulting, CareEdge Research, Company Websites

6.1.6 India's emergence as a hub for agrochemicals

The Indian crop protection & nutrition market is poised for growth due to the growing demand for food products. The demand has grown substantially over the last decade on account of increased agricultural output, growing population, and favourable government initiatives such as Make in India and Aatmanirbhar Bharat Abhiyan. Despite challenges such as a slowdown in global demand, crop failures due to erratic monsoons, high energy costs, geopolitical tensions, etc., the consumption of nutrients and crop protection chemicals increased. Overall, the consumption of agrochemicals in India has witnessed steady growth, estimated to reach 1029 thousand tonnes in CY25, up from 476 thousand tonnes in CY20. India's agrochemical manufacturing is concentrated in a few regional clusters, with the strongest city-level hubs visible in Ankleshwar, Ahmedabad/Vatva, and Hyderabad/Pashamylaram.

Further, the rising population and depleting arable land are increasing the demand for food grains. The usage of nutrients and crop protection chemicals has increased to produce good quality crops and protect them from damage caused by pests and weeds. Also, environmental factors such as weather and rainfall patterns and warmer temperatures in various regions of the country have led to increased consumption of nutrients and crop protection chemicals and are expected to continue in future.

Moreover, the cost of manufacturing nutrients and crop protection chemicals in India is comparatively low because of low cost of labour and tax benefits for the manufacturers. The production capacity in India not only meets domestic demand but also largely fulfills global demand. In addition, exports from India are increasing to cater to the demand across foreign countries, and they contribute to a larger share of the market.

India became 3rd largest exporter of agrochemicals in the world, after exporting around USD 4 billion worth of agrochemicals in FY25. Various initiatives, such as 'Make in India' and the Production Linked Incentive (PLI) scheme, have been taken by the government to increase production capacities in the country. The PLI scheme is also expected to strengthen domestic manufacturing and reduce imports in the country. This, in turn, is evaluated to bring more investments from the global nations.

Furthermore, nutrients and crop protection chemicals will continue to boost economic growth through improvements in agricultural output. Also, government support to develop the crop protection & nutrition industry is expected to aid market growth.

6.1.7 Key advantages of India over China

While China continues to dominate global chemicals and technical agrochemical production, India's relative advantage lies in lower supply-chain risk, formulation-led manufacturing, and alignment with global buyers' China+1 sourcing strategies. These factors drive structurally higher packaging intensity and customisation requirements in India, making it an increasingly attractive hub for agrochemical packaging compared to China.

1. Lower regulatory and supply-chain risk for global buyers

- China's chemicals sector faces frequent environmental inspections, plant shutdowns, and policy-driven capacity curbs, which have led to supply disruptions and price volatility in the past.
- India's regulatory environment, while stringent, is less prone to abrupt nationwide shutdowns, making it a lower supply-risk sourcing base for agrochemicals and packaging.

2. Formulation-heavy, customer-specific manufacturing (India's relative strength)

- China dominates large-scale technicals and intermediates, while India has built strength in formulations, custom synthesis, and small-batch, customer-specific products.
- Agrochemical packaging demand is higher per unit in formulation-led businesses due to:
 - Smaller SKUs
 - Multiple pack sizes
 - Regulatory labelling requirements

3. China+1 is not about replacing China, but de-risking

- Global agrochemical companies are not exiting China but are adding India as a parallel sourcing base.
- India benefits from incremental capacity addition, not substitution, which directly expands domestic demand for packaging.

4. Trade, geopolitical, and tariff considerations

- Chinese chemical exports face:
 - Higher scrutiny
 - Anti-dumping duties
 - Trade restrictions in several markets (US, EU)
- Indian exports generally face fewer trade barriers and are often perceived as policy-aligned with Western buyers.

5. Environmental compliance is becoming a cost disadvantage for China

- China's environmental enforcement has raised operating costs for chemical manufacturers, especially smaller players.
- India's compliance costs are rising gradually, allowing manufacturers and packaging suppliers to scale in a more cost-balanced manner.

6. Packaging ecosystem maturity vs. flexibility

- China has scale and integration, but India offers:
 - Faster customization
 - Shorter product changeover cycles
 - Better alignment with evolving regulatory and customer requirements

These are critical in agrochemicals where labels, dosage formats, and compliance vary by crop and geography.

6.1.8 Threats and Challenges for the Agrochemicals Industry

- **Research & Development (R&D) Costs:**

Companies are required to invest in R&D to develop new molecules, which usually involves high costs. Also, developing a new molecule takes around 9 years on average. While R&D is important to introduce innovation, the investment and time it demands restrict the development of R&D.

- **High Dependence on Monsoons and Climatic Conditions:**

Agrochemical demand in India is closely linked to monsoon performance and weather patterns. Weak or uneven rainfall can reduce sowing activity and crop acreage, leading to lower product usage and higher inventory levels. Increasing climate variability also makes demand less predictable, affecting sales planning and cash flows.

- **Export Market and Regulatory Risks:**

While India is a major exporter of agrochemicals, dependence on highly regulated global markets exposes companies to risks such as changing residue norms, registration delays, and trade restrictions. Stricter Maximum Residue Limits (MRLs) in developed markets can limit product approvals or reduce export volumes, increasing compliance costs and uncertainty for exporters.

- **Lack of Awareness:**

Lack of awareness and training on safe agrochemicals, use remains a challenge in India's agriculture sector. There are multiple training programmes going on by the government, which aim to educate farmers on correct application, label instructions and integrated pest management to reduce improper use and hazards. The emphasis on such training reflects that without structured extension support, many farmers may not fully understand safe handling practices, contributing to misuse, increased health risks and environmental impacts across farming communities.

- **Organic Farming:**

With growing health consciousness among people, there has been an increase in demand for organic food and, thus, organic farming. These developments indicate a need for the agrochemical industry to monitor changing cultivation practices and consumer preferences, and to work toward mitigating the potential adverse impact that the growing shift toward organic and low-chemical-input farming may have on demand in specific product categories.

- **Competition:**

The agrochemical industry has high entry barriers due to strict regulations, long approval timelines, and high compliance costs. However, the real challenge is not entering the industry but surviving and sustaining operations over time. Companies must continuously meet regulatory requirements, renew approvals, follow safety and environmental norms, and manage documentation across markets. In this space, competition is less about new players and more about who can stay compliant, resilient, and consistent in the long run.

- **Poor Infrastructure**

Non-availability of proper production facilities is a major infrastructure constraint. In addition, irregular supply of key raw materials such as active ingredients, chemicals, additives, and packaging materials affects production. Shortages of essential equipment, unreliable power supply, and limited laboratory space further add to operational challenges.

- **Lack of skilled labour**

The lack of technically qualified staff in production units is a serious problem, and this constraint is in direct connection with the lack of proper training and the adoption of technical qualifications to produce bio-fertilisers. Improving the technical and human capacity for quality control of bio-fertilisers has also been identified as critical for adequate biofertilizer market realisation.

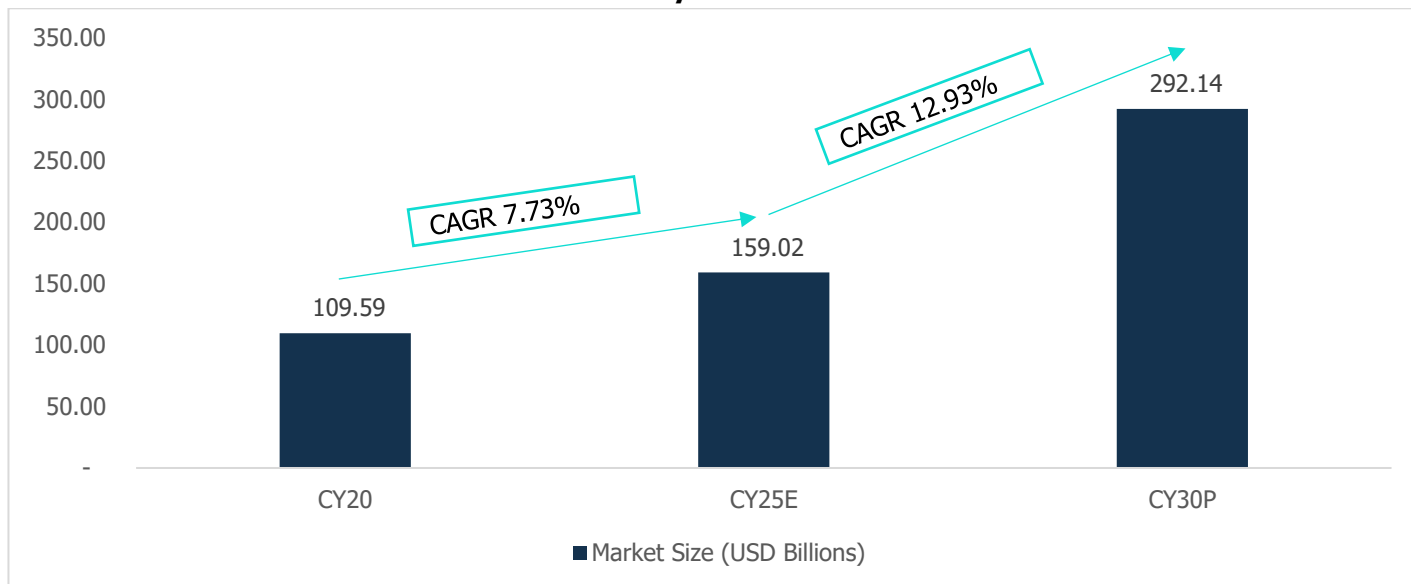
6.2 Overview of the Indian FMCG Industry

6.2.1 Market Size of the FMCG Industry

The Indian fast-moving consumer goods (FMCG) sector encompasses a wide range of products, including food and beverages, household items, personal care products, and health and wellness items. These consumer staples are available through both modern and traditional retail channels. The market features a mix of well-known national brands alongside a diverse array of regional and local manufacturers. Distribution networks include traditional kirana stores, modern retail outlets, and an expanding landscape of e-commerce and quick-commerce platforms.

Consumer demand in India varies significantly between urban and rural areas and across different income brackets. This diversity influences product formats, such as single-use sachets, family-sized packs, and premium variants, as well as the choices made in packaging.

Chart 49: Market Size of the Indian FMCG Industry

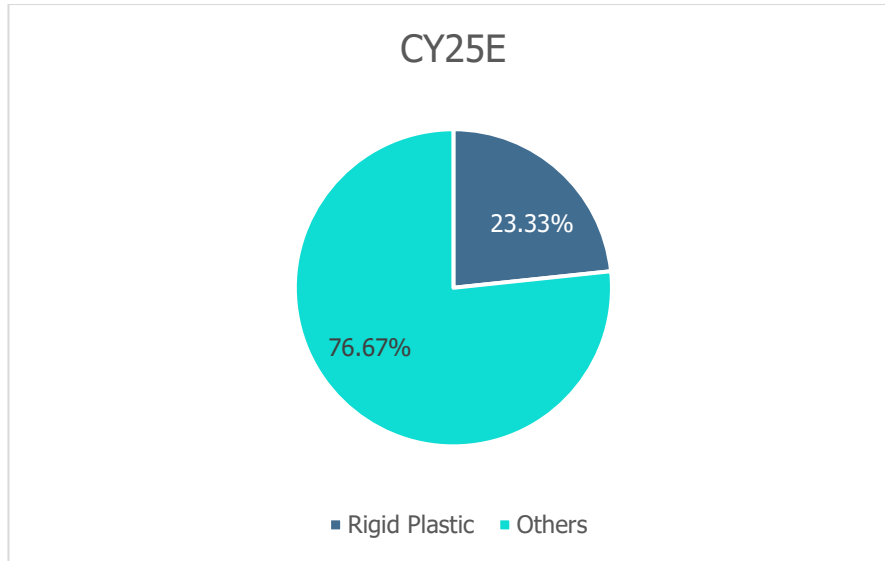


Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

As per current estimates, the Indian FMCG market is valued at approximately USD 159.02 billion (INR 13,699.56 billion) for CY25 and it is expected to reach USD 292.14 billion (INR 25,462.80 billion) by CY30, registering a CAGR of 12.93% from CY25 to CY30. A noteworthy portion of this packaging demand is driven by flexible packaging and plastics, particularly for food and household products. Packaging plays a crucial role for FMCG companies, contributing not only to shelf life and convenience but also enhancing branding and logistical efficiency. As such, it constitutes a significant part of the overall supply chain expenditure, although the proportion of spending on packaging can vary by product category and company.

6.2.2 Share of Packaging Segment for the FMCG Industry

Chart 50: Share of Packaging Segment for the FMCG Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated *Others include Other Includes flexible plastic, metal, paper & paperboard, and others

The FMCG packaging market in CY25 is valued at USD 159.0 billion, and most of this comes from the “other” materials category, which makes up approximately 76.67% of the total share. This mainly includes flexible plastics, laminates, metal cans, carton board and foil packs. These formats are widely used because they are lightweight, cost-effective and suitable for high-volume products such as snacks, personal care items, home-care products and daily essentials.

Rigid plastics account for the remaining 23.33% and are used in bottles, jars and containers that need better durability, ease of handling and stronger shelf presence. These formats work well for products like shampoos, detergents, creams and food storage categories.



6.2.3 Key Trends and Growth Drivers in the FMCG Packaging Industry

Key Trends in the FMCG Packaging Industry

- **Preference for Specialised Packaging Partners**

FMCG companies increasingly prefer working with specialised rigid packaging manufacturers that offer scale, consistency and technical expertise. Packaging partners with strong design capabilities, quality control and compliance standards help FMCG brands manage large volumes efficiently while meeting regulatory and ESG requirements. This preference supports steady demand for organised and specialised rigid packaging players.

- **Convenience-Driven Packaging Formats**

In the FMCG sector, consumers prefer packaging that is easy to use and carry. This is driving demand for rigid packs with flip-top caps, pumps, dispensers and resealable closures. At the same time, rising on-the-go consumption is increasing the use of small and single-serve rigid packs, supporting steady growth in rigid packaging across FMCG categories.

- **Regulatory and ESG Push**

Stricter regulations, such as Extended Producer Responsibility (EPR) norms and plastic waste management rules, are influencing packaging design and material choices in the FMCG sector. At the same time, FMCG brands are increasingly aligning their packaging strategies with ESG commitments by focusing on recyclability, material reduction and compliance. This is driving demand for well-designed, compliant and sustainable rigid packaging solutions.

- **Sustainability Pressures on Packaging**

Brands and regulators are placing greater emphasis on recyclable, recyclable-ready and material-efficient packaging. This is driving increased adoption of mono-material rigid packaging, lightweight bottles and containers that use less plastic per unit, and higher use of recycled content such as rPET and rHDPE. These shifts are influencing material choices and supplier strategies, supporting demand for compliant and sustainable rigid packaging products and raw materials.

Key Growth Drivers in the FMCG Packaging Industry

- **Increasing Incomes and Consumption**

Rising per-capita incomes and the expansion of the middle class are improving purchasing power across India, leading to higher consumption of both essential and discretionary FMCG products. This is driving demand for a wider range of packaged goods, including value-added and premium offerings. As product volumes and varieties increase, the need for attractive, durable and functional packaging is also rising, supporting steady growth in the packaging industry.

- **E-commerce and Quick Commerce**

The rapid growth of e-commerce and quick-commerce platforms in the FMCG sector is reshaping distribution and consumption patterns. Online grocery and fast-delivery services are driving demand for rigid packaging with higher strength and leakage resistance, as products undergo multiple handling and transportation cycles. Packaging that can withstand frequent movement while maintaining product integrity is becoming increasingly important, supporting the growing use of durable, rigid packaging solutions across FMCG categories.

- **Supply Chain Modernisation**

Advances in warehousing, logistics and cold chain infrastructure are improving the distribution of perishable and premium food products across India. As supply chains become more organised and efficient, there is a growing need for packaging that can protect products during storage, handling and transportation. This is increasing demand for

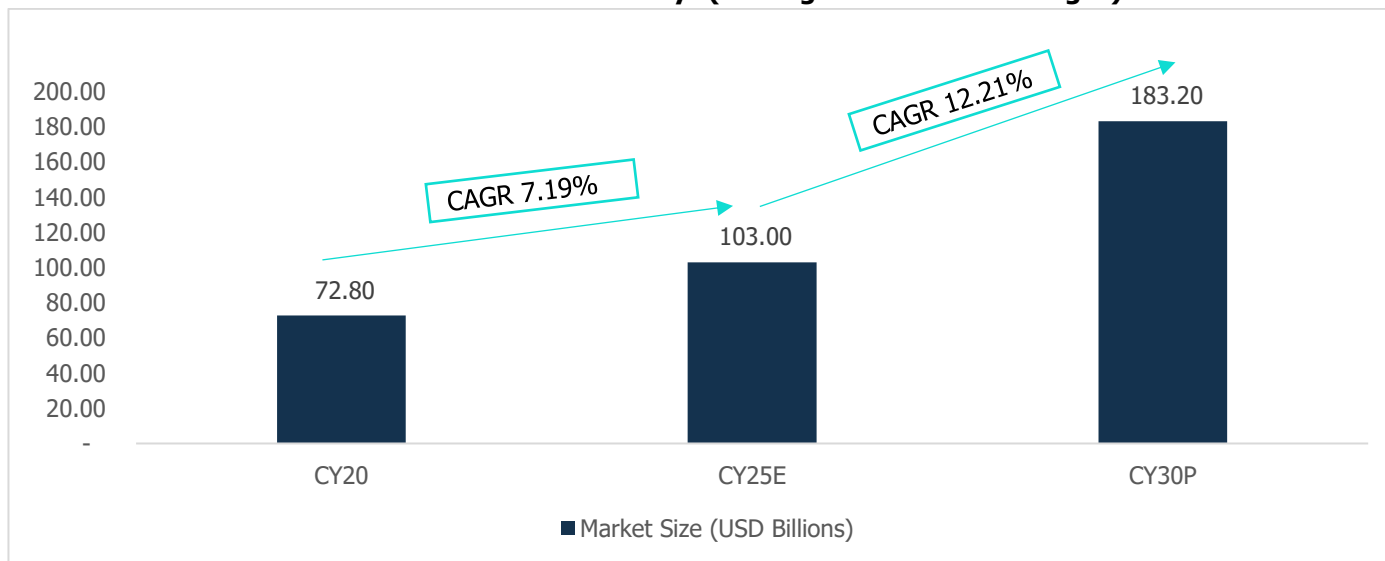
high-quality and durable packaging solutions that offer better strength, hygiene and shelf-life extension, thereby supporting growth in the packaging industry, particularly for food and beverages.

6.3 Overview of the Indian FMCG Industry- Focus on Packaged Foods & Beverages

6.3.1 Market Size of the Packaged Food & Beverages in the FMCG Industry

The packaged food and beverages sector includes processed and ready-to-eat foods, snacks, dairy, and grocery items sold in sealed packs, as well as bottled and ready-to-drink beverages. Packaging in this sector protects products, extends shelf life, and enables distribution across modern and traditional retail channels, including the rapidly growing online grocery and quick-commerce sectors. Product formats range from affordable single-serve sachets and pouches to premium bottled and canned beverages, reflecting consumer income, urbanisation, and the retail landscape.

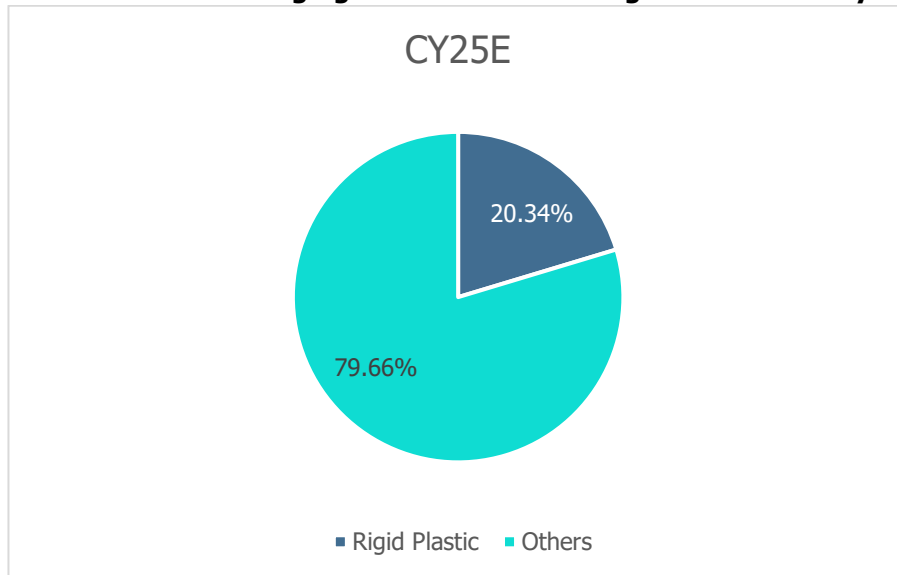
Chart 51: Market Size of the Indian FMCG Industry- (Packaged Foods & Beverages)



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The Indian packaged food and beverages market is estimated to be around USD 103 billion (INR 8,873.45 billion) in CY25, and it is expected to reach USD 183.20 billion (INR 15,967.71 billion) by CY30, registering a CAGR of 12.21%. These numbers are driven by increased household consumption, greater availability of processed foods, expansion of organised retail and e-commerce, and improvements in cold chain logistics that facilitate the distribution of perishable goods. Growth forecasts for the remainder of the decade predict continued expansion, fueled by urbanisation, higher disposable incomes, and a growing demand for convenience.

6.3.2 Share of Packaging Market in the Packaged Food Industry - By Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated, Note: *Other Includes flexible plastic, metal, paper & paperboard, and others

In the packaged food industry, about 79.66% of the packaging comes from the “others” category. This includes flexible plastic pouches, multilayer laminates, paper cartons, metal cans and foil packs. These materials are widely used because they keep food fresh, protect it from moisture and are cost-effective for high-volume products like snacks, biscuits, noodles, dairy and ready-to-eat meals. Rigid plastics make up the remaining 20.34%. They are mostly used for bottles, jars and tubs in categories such as edible oils, sauces, spreads and some dairy items, where sturdiness, ease of use and a better shelf presence matter



6.3.3 Key Trends and Growth Drivers in Packaging in the FMCG Industry (Packaged Foods & Beverages)

Key trends in the FMCG packaging Industry

- Premiumisation and Shelf Differentiation

In the packaged food and beverage segment, brands are increasingly focusing on premiumisation to stand out on crowded retail shelves. This is driving the use of innovative bottle shapes, improved aesthetics and high-quality moulding to enhance shelf appeal and brand recall. Such requirements are best met through customised rigid packaging, which offers better design flexibility, consistency and product presentation, thereby supporting growth in rigid packaging demand within the FMCG sector.

- **Shift Towards Lightweight and Durable Materials**

FMCG companies, particularly in the food and beverage segment, are increasingly adopting lightweight materials such as PET, HDPE and PP to improve logistics efficiency and reduce costs. These materials offer better durability, lower breakage and greater design flexibility than glass and metal. With wider distribution and growing e-commerce penetration, this shift is driving gradual substitution in beverages, edible oils and packaged foods, supporting sustained demand for plastic packaging.

- **Convenience and 'Snackification' of Diets**

Shifts in eating patterns, more meals eaten outside the home or in short time windows, raise demand for single-serve and ready-to-eat formats. Manufacturers respond by launching pouches, resealable tubs and microwavable trays that fit urban lifestyles. Convenience formats also support premium pricing and new product variants (flavour lines, fortified products), enabling manufacturers to capture higher margins. An example is the growth in single-serve packaged breakfast options and on-the-go snack pouches sold through convenience stores, which in turn leads to an increase in demand for rigid and other forms of packaging, mainly plastic.

Key Growth Drivers in the FMCG Packaging Industry

- **Modern Retail, E-commerce and Cold-Chain Expansion**

The growth of modern retail, online grocery and cold-chain infrastructure is increasing the need for better FMCG packaging. Wider distribution and e-commerce require stronger, tamper-proof and shelf-ready packs, while cold chains are driving demand for packaging that preserves freshness and extends shelf life. This is enabling FMCG brands in the Food and Beverages segment to scale premium, refrigerated and niche products beyond local markets.

- **Technological Advancements in Rigid Packaging Manufacturing**





Advances in blow-moulding and injection-moulding are helping packaging suppliers deliver high-quality, food-grade packs at scale for FMCG food and beverage brands. Improved efficiency, consistency and lightweighting are reducing costs and enabling wider adoption of rigid packaging products in beverages, dairy and packaged foods, thereby supporting steady growth in FMCG packaging demand.

- **Urbanisation and Rising Disposable Income**

Urban population growth and higher household incomes increase demand for processed and packaged foods as consumers trade convenience for time savings. Urban households tend to purchase a higher share of branded and packaged products compared with rural households, creating larger, denser retail demand centres. This drives larger pack formats in modern trade and smaller single-serve packs for on-the-go consumption. For example, sales of ready-to-eat meals and packaged snacks have grown faster in metropolitan areas where working households value convenience.

6.3.4 Key Players in the Market

Company	Description
	<p>Nestlé India Limited operates across packaged food and beverage categories, including instant noodles, coffee, dairy, infant nutrition and confectionery under brands such as Maggi, Nescafé, KitKat and Milkybar. The company uses a mix of flexible and rigid packaging formats. Multilayer laminates and sachets are widely used for noodles, confectionery and mass-market SKUs, while rigid plastics such as HDPE and PP tubs are used for dairy and culinary products. Coffee products such as Nescafé are sold in glass jars and other rigid containers, and metal tins are used for infant nutrition and select premium or bulk packs where higher barrier protection is required. Nestlé India is progressively optimising packaging through lightweighting and greater use of recyclable structures as part of its sustainability and cost-efficiency initiatives.</p>
	<p>ITC Limited operates across packaged foods, personal care and agarbatti categories under brands such as Aashirvaad, Sunfeast, Bingo, Yippee and Fiana. The company uses a broad range of flexible packaging formats, including multilayer laminates for foods and snacks, along with rigid plastic and paperboard packaging for select personal-care products. ITC has undertaken packaging optimisation initiatives, including lightweighting, reduction in material usage and increased adoption of recyclable and paper-based packaging, aligned with its sustainability objectives.</p>
	<p>Hindustan Unilever Limited (HUL) uses PET and HDPE bottles extensively for liquid detergents, shampoos, conditioners and household cleaners under brands such as Surf Excel, Dove, Sunsilk and Vim, alongside multilayer flexible sachets and pouches for mass and refill packs. PET packaging is a key focus area for the company's sustainability actions, with HUL increasing the use of post-consumer recycled (PCR) PET in select brands and lightweighting bottles to reduce resin consumption. In parallel, the company is gradually redesigning flexible packs to improve recyclability, directly influencing demand for both rigid PET and advanced flexible packaging solutions.</p>
	<p>Parle Products operates across biscuits, snacks, confectionery and beverages with key brands such as Parle-G, Monaco, Krackjack, Mango Bite and Kismi. The company uses multilayer flexible packaging extensively for biscuits and confectionery, including high-barrier laminates to preserve freshness, and PET bottles for select beverage SKUs. Parle has undertaken packaging optimisation initiatives such as lightweighting of flexible pouches, improved barrier structures to extend shelf life, and gradual adoption of recyclable mono-material films in high-volume packs, influencing demand patterns for flexible packaging suppliers.</p>
	<p>Varun Beverages Limited (VBL) is a major bottler of carbonated soft drinks and non-carbonated beverages under franchise agreements with global brands (e.g., PepsiCo). The company's packaging is predominantly PET bottles across small, medium and bulk SKUs, supported by lightweighting initiatives to reduce resin use and enhance sustainability. In addition to PET, Varun uses HDPE returnable crates for bottle logistics and shrink-wrap films for multipack configurations. VBL has undertaken packaging optimisation through increased use of PCR (post-consumer recycled) PET content and design improvements to enhance recyclability and operational efficiencies across its packaging supply chain.</p>
	<p>Bisleri International is a leading packaged drinking water company in India best known for its Bisleri brand. The company's packaging is dominated by PET bottles across a range of sizes (e.g., 250 ml, 500 ml, 1 L, 2 L+), with a focus on lightweighting to reduce plastic usage and improve transport efficiency. Bisleri also uses shrink-wrapped multipack formats for retail</p>

	units and HDPE crates for returnable logistics. The company has undertaken packaging optimisation efforts, including increasing the use of post-consumer recycled (PCR) PET content and improving bottle design for enhanced recyclability.
	Dabur India Limited operates across healthcare, personal care and food & beverage categories with brands such as Dabur Chyawanprash, Honey, Vatika, and Real juices. The company uses a mix of rigid and flexible packaging formats, including PET and HDPE bottles for juices, health tonics and hair oils; multilayer flexible pouches and sachets for smaller SKUs and sample packs; and tube laminates for pastes and creams. Dabur has undertaken packaging optimisation initiatives such as lightweighting of bottles, increased use of post-consumer recycled (PCR) content, and trials of recyclable mono-material films for select flexible packs, aligned with its sustainability commitments.
	Amway India Enterprises Pvt. Ltd. operates across personal care, health & nutrition and home care categories with brands such as Nutrilite, Satinique, LOC and Glister. The company uses a mix of rigid and flexible packaging formats, including PET and HDPE bottles for liquid personal care and home care products, tube laminates for creams and gels, and multilayer pouches/sachets for sample and travel SKUs. Amway has undertaken packaging optimisation efforts focused on lightweighting of containers, increased use of recyclable materials, and adoption of designs that improve recyclability and reduce material usage, supporting its broader sustainability commitments.
	The Himalaya Wellness Company operates across personal care, health care and nutrition categories with brands such as Himalaya Herbals, Himalaya Wellness, and Pure Herbs. The company uses a range of rigid and flexible packaging formats, including PET and HDPE bottles for liquids (shampoos, lotions, tonics), tube laminates for creams and gels, and multilayer flexible pouches/sachets for sample and smaller SKUs. Himalaya has undertaken packaging optimisation initiatives such as lightweighting of rigid containers, increased use of recyclable materials, and adoption of designs that enhance recyclability and reduce material usage, aligned with its sustainability strategy.
	Amul is a large user of rigid packaging in packaged foods, reflecting the storage and shelf-life needs of dairy products. Butter, cheese, curd, and spreads are sold in rigid plastic tubs, while ghee is extensively packed in metal tins, along with PET jars and pouches. The continued use of tins for ghee supports demand for food-grade metal packaging, while value-added dairy products drive steady demand for HDPE, PP, and PET containers.

Source: Cervicorn Consulting, CareEdge Research, Company Websites

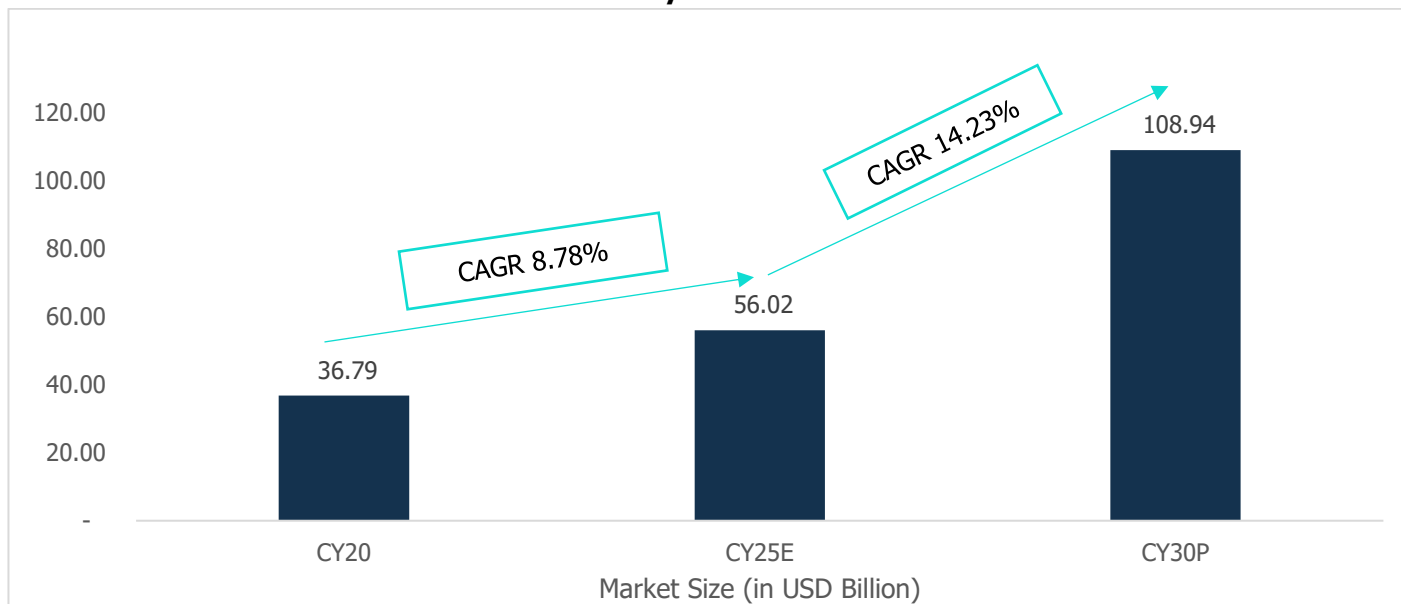
6.4 Overview of the Indian FMCG Industry- Non-Food Segment

The non-food FMCG sector includes beauty & personal care and home care, sold through traditional stores, modern retail, and online channels. Within this, the cosmetics and personal care segment is a major driver of rigid packaging, as these products rely heavily on bottles, jars, pumps, dispensers, and aerosol cans. Packaging here is not just functional, it shapes brand appeal, ease of use, and perceived quality.

While sachets remain important for low-price entry, growing premiumisation and online sales are pushing demand toward strong, attractive, and safe rigid packaging. Features such as precise dosing, leak resistance, and child-safe closures further reinforce the importance of rigid formats, making cosmetics a key growth area within non-food FMCG

6.4.1 Market Size of the Indian FMCG Industry-Non-Food Segment

Chart 52: Market Size of Non-Food FMCG Industry

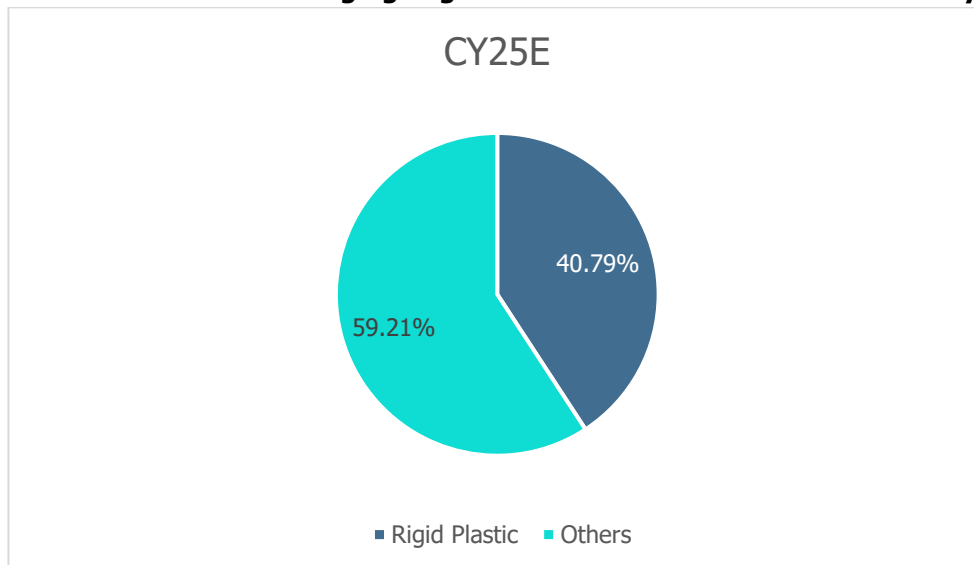


Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The non-food FMCG segment is estimated to be around USD 56.02 billion in CY25 (INR 4,826.11 billion) and is estimated to reach around USD 108.94 billion (INR 9495.09 billion) by CY30, registering a CAGR of 14.23%. While personal care and cosmetics form a larger value pool when combined with premium grooming and skincare categories. Growth in non-food FMCG is driven by premiumisation, hygiene awareness and greater penetration of branded products in rural areas.

6.4.2 Share of Packaging Market in Non-Food FMCG - By Material Type

Chart 53: Share of Packaging Segment for the Non- Food FMCG Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated, Note: Other Includes flexible plastic, metal, paper & paperboard, and others

Non-food FMCG relies heavily on “other” packaging materials, contributing 62.12%, due to the growing use of flexible laminates, tubes, and carton-based formats across categories like detergents, household cleaners, and hygiene products. Rigid plastics form 37.88% of the mix, primarily for items such as lotions, shampoos, and home-care liquids that require defined structures, controlled dispensing, and stronger visual branding on the shelf.



6.4.3 Key Trends and Growth Drivers in Non-Food FMCG Packaging Industry

Key Trends in Non- Food FMCG Packaging Industry

- **Rising Hygiene Awareness and Health concerns**

Public focus on hygiene, driven notably by health events and continuous communication to public , increases purchase frequency of soaps, sanitisers, surface cleaners and related products. Consumers prioritise products with perceived efficacy and validated safety claims, which supports premium pricing and branded launches. Packaging choices therefore shift to dispensing pumps, trigger sprays and single-dose sachets that emphasise convenience and measured use. For instance, demand for hand sanitiser in travel-size pump bottles rose sharply during Covid and has stabilised at elevated levels compared with pre-covid baselines.

- **Premiumisation and Beauty & Grooming Trends**

Higher disposable incomes and changing fashion and grooming habits lead consumers to trade up to more expensive personal-care products and cosmetics. This supports demand for aesthetically differentiated packaging, airless pumps, glass jars, and decorative tubes, and for refillable or premium boxed sets. Premiumisation tends to increase per-unit packaging value even if volumes grow more slowly. An example is the expansion of higher-end skincare ranges that use sturdier jars and specialised caps to convey quality.

- **Convenience-Led Consumption and On-the-Go Usage**

Increasingly busy urban lifestyles and a growing working population are driving demand for convenient, easy-to-use non-food FMCG products such as personal care, home care, and cleaning solutions. Consumers prefer spill-proof, portable, and resealable formats, which has led to higher usage of rigid plastic bottles, flip-top caps, pump dispensers, and travel-friendly containers. This trend supports wider adoption of HDPE and PET rigid packaging, as these formats

offer durability, product protection, and ease of repeated use. For example, shampoos, liquid detergents, and surface cleaners are increasingly sold in ergonomic bottles designed for daily handling and storage.

Key Growth Drivers in the Non-Food FMCG packaging Industry

• **Rural Penetration and Small-Pack Formats**

As rural incomes rise and distribution improves, small sachets and sachet-based promotions remain important to introduce brands and capture first-time users. These low-cost formats lower purchase barriers and drive trial, eventually supporting conversion to larger packs as incomes increase. The persistence of sachets in hair oil, shampoos and detergents shows how small formats enable broad market coverage. For example, single-use sachets of shampoo are widely used in rural and low-income urban segments to deliver affordable access.



• **E-commerce and Omnichannel Availability**

Online retail expands choice and supports niche personal-care brands with targeted marketing and subscription options, increasing total category spend. Packaging for e-commerce must withstand transit damage and returns logistics, so sellers favour rigid secondary packaging and tamper-evident seals. D2C brands often use distinct packaging to convey the brand story and encourage social-media visibility. An example is direct-to-consumer skincare brands that use branded boxes and inserts to build customer experience and reduce return rates.

• **Regulatory and Sustainability Pressures**

Policies and consumer preference for recyclable and reduced-waste packaging prompt brands to redesign packs (mono-materials, refill pouches, recyclable PCR content). Compliance with labelling, safety and chemical regulations also affects packaging specifications and material choices, particularly for cleansers and household chemicals. These requirements increase R&D and supplier coordination but can open pathways to shelf differentiation. For instance, several household cleaner brands have launched refill pouches that reduce plastic use and lower the consumer cost per use.

6.4.4 Key Players in the Market

Company	Description
	<p>Godrej Consumer Products Limited (GCPL) operates across personal care and household segments with brands such as Good Knight, Cinthol, Godrej Expert, and Godrej No.1. The company uses a mix of rigid and flexible packaging formats, including PET and HDPE bottles for liquids (e.g., household insecticides, shampoos, body washes), aerosol cans for sprays and deodorants, and multilayer flexible pouches and sachets for smaller SKUs and sample packs. GCPL has undertaken packaging optimisation efforts such as lightweighting of rigid containers, increased use of recyclable materials, design improvements to enhance recyclability, and trials of mono-material flexible solutions, aligned with its sustainability commitments</p>
	<p>Dabur India Limited operates in the non-food FMCG segment, primarily across personal care, health & hygiene and home care categories under brands such as Vatika, Dabur Red, Odonil and Gulabari. The company uses PET and HDPE bottles for liquids, tube laminates for creams and gels, and multilayer flexible pouches and sachets for smaller SKUs. Dabur has undertaken packaging optimisation through lightweighting and selective adoption of recyclable and mono-material structures.</p>

	<p>Hindustan Unilever Limited (HUL) has a large presence in the non-food FMCG segment, spanning personal care and home care brands such as Surf Excel, Dove, Lux, Lifebuoy and Vim. Packaging formats include PET and HDPE bottles, aerosol cans, and multilayer sachets and pouches across mass and refill packs. HUL has focused on lightweighting, increased use of PCR content (notably in PET), and improving the recyclability of flexible packaging.</p>
	<p>Nirma Limited operates largely in the non-food FMCG segment, with a focus on home care products such as Nirma Washing Powder and detergents. The company predominantly uses multilayer flexible pouches and sachets, alongside HDPE/PET bottles for liquid cleaners. Packaging initiatives have centred on lightweighting, flexible formats and improving material efficiency and recyclability.</p>
	<p>Reckitt Benckiser India operates in the non-food FMCG segment with brands such as Dettol, Harpic, Lysol and Finish. The company uses PET and HDPE bottles for liquids and surface cleaners, aerosol cans for sprays, and multilayer flexible pouches and sachets for smaller SKUs and refills. Reckitt has focused on lightweighting, the use of recyclable materials, and enhancing pack design for recyclability as part of its packaging optimisation.</p>
	<p>Procter & Gamble (P&G) India operates in the non-food FMCG segment, with brands such as Ariel, Pampers, Head & Shoulders and Gillette. Packaging formats include PET and HDPE bottles for liquids, tube laminates for creams and gels, rigid cartridges for shaving products, and multilayer flexible sachets/pouches for smaller and sample packs. P&G has undertaken lightweighting, increased use of recyclable formats, and innovations in mono-material flexible films to improve recyclability.</p>
	<p>Wipro Consumer Care & Lighting operates in the non-food FMCG segment with brands such as Enchanteur, Santoor, and Portfolio home care products. The company uses PET/HDPE bottles for liquids (e.g., body washes, shampoos), tube laminates for creams, and multilayer flexible pouches for smaller SKUs. Wipro has focused on lightweighting of rigid containers, improvement of recyclable packaging solutions, and adoption of designs that enhance material efficiency.</p>
	<p>Marico Limited operates in the non-food FMCG segment, with brands such as Parachute, Nihar, Livon, Set Wet and Mediker. The company uses PET/HDPE bottles for oils and liquid products, flexible pouches and sachets for smaller SKUs, and laminated tubes for select personal care items.</p> <p>Marico focuses on lightweighting rigid packaging, improving recyclability, and optimising pack designs to reduce material use and costs. These initiatives also support better logistics efficiency and alignment with sustainability goals, while maintaining product protection and shelf appeal.</p>

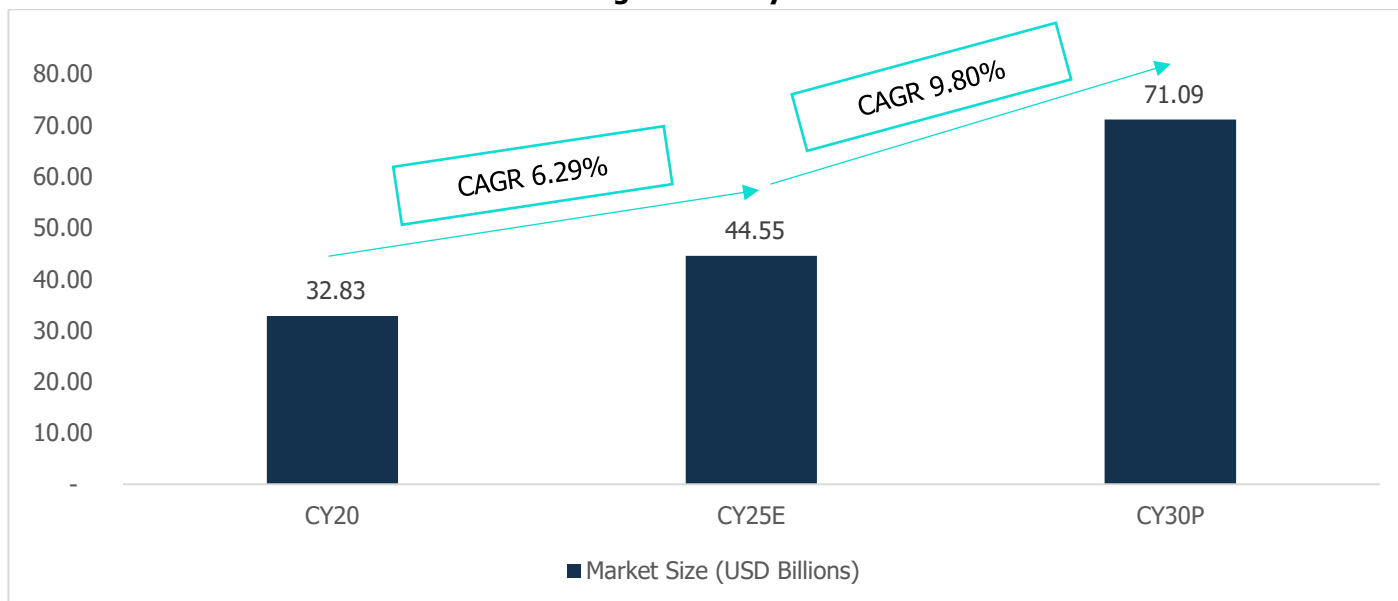
Source: Cervicorn Consulting, CareEdge Research, Company Websites

6.5 Overview of the Indian Alcoholic Beverages Industry

6.5.1 Market Size of the Alcoholic Beverages Industry

India is the world's biggest whisky-drinking country. Increased alcohol intake is seen in states and union territories like Daman & Diu, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Arunachal Pradesh, Sikkim, and Puducherry, followed by Goa, Andhra Pradesh, Kerala, and Karnataka. Tier-I and tier-II cities continue to drive most sales, ably backed by growing incomes and greater availability of alcohol in restaurants and liquor outlets. Alcohol is still a large source of income for state governments. The proportion of alcohol consumption in the upper-middle-income segment has risen from 7% to 21% and will reach 44% by 2030, based on ICRIER estimates. This rising wealth, coupled with changing social attitudes and increased availability, will redefine India's alcohol market dynamics.

Chart 54: Market Size of the Alcoholic Beverages Industry

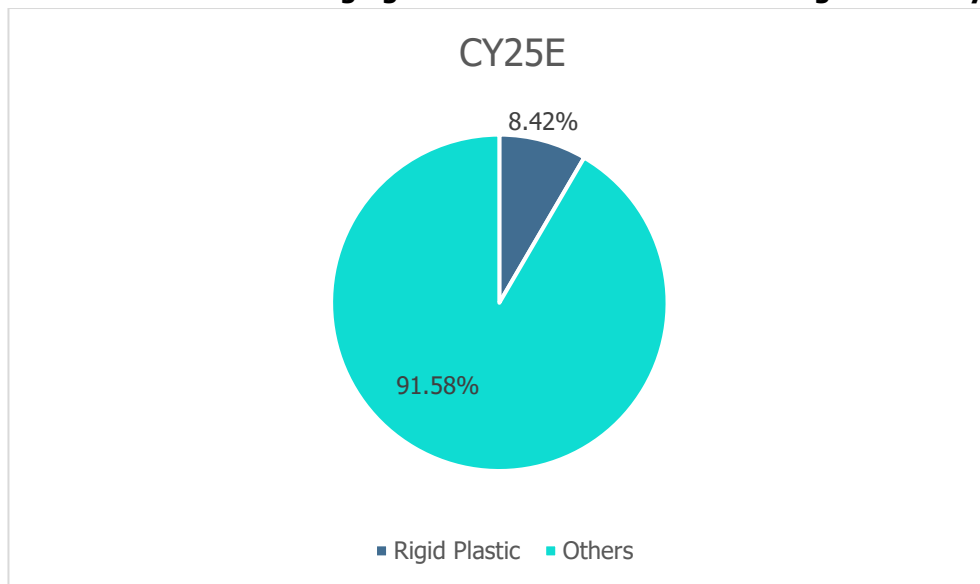


Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

India's alcohol market is estimated to be USD 44.55 billion (INR 3,837.64 billion) in CY25 and is expected to touch USD 71.09 billion (INR 6,196.38 billion), registering a CAGR of 9.80%, making it one of the fastest-growing alcoholic beverage markets globally by CY30. Favourable demographic trends, globalisation, and an expanding economy are fuelling strong market growth. The increasing need for alcoholic drinks is fuelled by a vast youth population, evolving lifestyles, and rising disposable incomes. India's 1.45 billion population makes it one of the world's largest consumer markets. Approximately 50% of the population is under 25, and 65% is under 35, with most of the alcohol consumption among people aged 18 to 40. Urbanisation in tier-II cities is also fuelling market growth.

6.5.2 Share of Packaging Market in the Alcoholic Beverages

Chart 55: Share of Packaging Market in the Alcoholic Beverages Industry - By Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated, *Others include flexible plastic, metal, paper & paperboard, and others

Rigid plastics represent a very small 8.42% share in alcoholic beverage packaging, reflecting strict regulatory norms, consumer preference for premium materials, and the industry's reliance on formats that preserve taste and product identity. The overwhelming 91.58% share of "others" is dominated by glass, metal closures, and paperboard cartons, which collectively deliver the required safety, tamper resistance, and premium aesthetics essential for the category. This also highlights the segment's slow adoption of plastic-based alternatives despite global experimentation with PET bottles in select low-alcohol beverages.



6.5.3 Key Trends and Growth Drivers in Packaging in the Alcoholic Beverages Industry

Key Trends in the Alcoholic Beverages Industry

- **Dominance of Glass Bottles in Alcoholic Packaging:**

Glass remains the preferred rigid packaging material for spirits, wine and premium beer due to its inert properties, ability to preserve taste and quality, and strong premium appeal. Continued growth in the alcoholic beverage segment, driven by premiumisation, wider availability and rising urban consumption, is directly supporting higher demand for rigid glass bottles. As new brands, variants and SKUs are launched, glass packaging volumes are expected to rise steadily alongside alcohol consumption trends.

- **Growing Adoption of Alternative Rigid Packaging**

Along with glass, formats such as PET bottles and aluminium cans are increasingly being used in segments like beer, RTDs and value spirits. These packs are lighter, easier to transport and less prone to breakage, helping brands reduce costs and improve distribution efficiency. As more brands adopt these formats for mass-market and on-the-go consumption, demand for alternative rigid packaging is steadily increasing.

- **Technological Advancements in the Alcoholic Packaging Industry:**

Advances in glass forming, blow-moulding and can-manufacturing technologies are enabling higher precision, better consistency and greater design flexibility in alcoholic beverage packaging. These technologies support lightweighting, improved strength and premium finishes, helping brands balance cost efficiency with shelf appeal. Improved automation and scalability also allow packaging suppliers to meet rising volumes and frequent SKU launches, directly supporting steady growth in rigid packaging demand within the alcoholic beverages segment.

- **Premiumisation and Changing Consumer Preferences:**

Alcohol consumers in India are increasingly shifting towards better-quality and premium products as incomes rise and brand awareness improves. This is driving more launches of premium spirits and craft beers. Premium products typically carry higher margins and require high-quality glass bottles and well-designed rigid packaging, supporting both higher packaging demand and better realisations.

Key Growth Drivers in the Alcoholic Beverages Industry

- **Regulatory and Compliance Requirements:**

Alcoholic beverage brands must follow strict state excise rules and labelling norms, which makes compliant and tamper-proof rigid packaging a necessity. Packaging also needs to support traceability and product safety across different markets. As regulations continue to evolve, the need for reliable, regulation-ready packaging remains strong and consistent.





- **Increased Alcohol Accessibility and Availability:**

The wider availability of alcohol across government-licensed outlets, state-run shops, private retail chains, restaurants and bars has improved consumer access and supported higher sales volumes. This trend is reinforced by India's large and young population, with a significant share in the legal drinking age bracket, particularly in urban and semi-urban markets. Rising consumption across channels is indirectly driving higher demand for rigid packaging, as brands scale up production to meet growing volumes.

- **Changing Social Norms:**

Over the years, attitudes toward alcohol consumption in India have become more accepting, with drinking increasingly common at social gatherings, family occasions and among women and younger consumers in urban areas. This shift is supported by rising disposable incomes, rapid urbanisation, evolving social preferences and a growing population within the legal drinking age. Together, these factors are driving higher alcohol consumption and supporting sustained demand for rigid packaging as brands scale volumes and expand product offerings.

6.5.4 Key Players in the Market

Company	Description
	<p>Pernod Ricard India operates in the alcoholic beverages segment with brands such as Blenders Pride and Royal Stag. The company uses predominantly glass bottles across spirits SKUs, supported by closures, labels and secondary cartons for protection and branding. Packaging initiatives include lightweighting of glass bottles, improved label and carton designs for enhanced sustainability, and greater use of recyclable materials, reflecting industry trends toward reduced material use and improved end-of-life recoverability.</p>
	<p>United Breweries Limited (UBL) operates in the alcoholic beverages segment, primarily in beer, with brands such as Kingfisher, Kingfisher Ultra and UB Export. The company predominantly uses glass bottles and aluminium cans across its beer portfolio, supported by labels, closures and secondary cartons for protection and branding. UBL has pursued lightweighting of glass and aluminium formats, optimised shrink sleeves and labels for recyclability, and packaging design improvements to enhance logistics efficiency and material recovery.</p>
	<p>Radico Khaitan Limited operates in the alcoholic beverages segment with brands such as 8 PM, Magic Moments and Jaisalmer Indian Craft Gin. The company uses predominantly glass bottles for spirits and craft gin, with closures, labels and secondary cartons integral to packaging. Radico has undertaken lightweighting of glass bottles, improvements in labelling and secondary packaging designs, and increased use of recyclable materials to support sustainability and material-use efficiency.</p>
	<p>United Spirits Limited (USL) operates in the alcoholic beverages segment with brands such as McDowell's No.1, Royal Challenge and Signature. The company's packaging is predominantly glass bottles across its portfolio, supported by closures, labels and secondary cartons for protection and consumer appeal. USL has focused on lightweighting of glass formats, optimised decorative sleeves and labels, and adoption of more recyclable packaging materials, aligned with broader industry sustainability trends.</p>

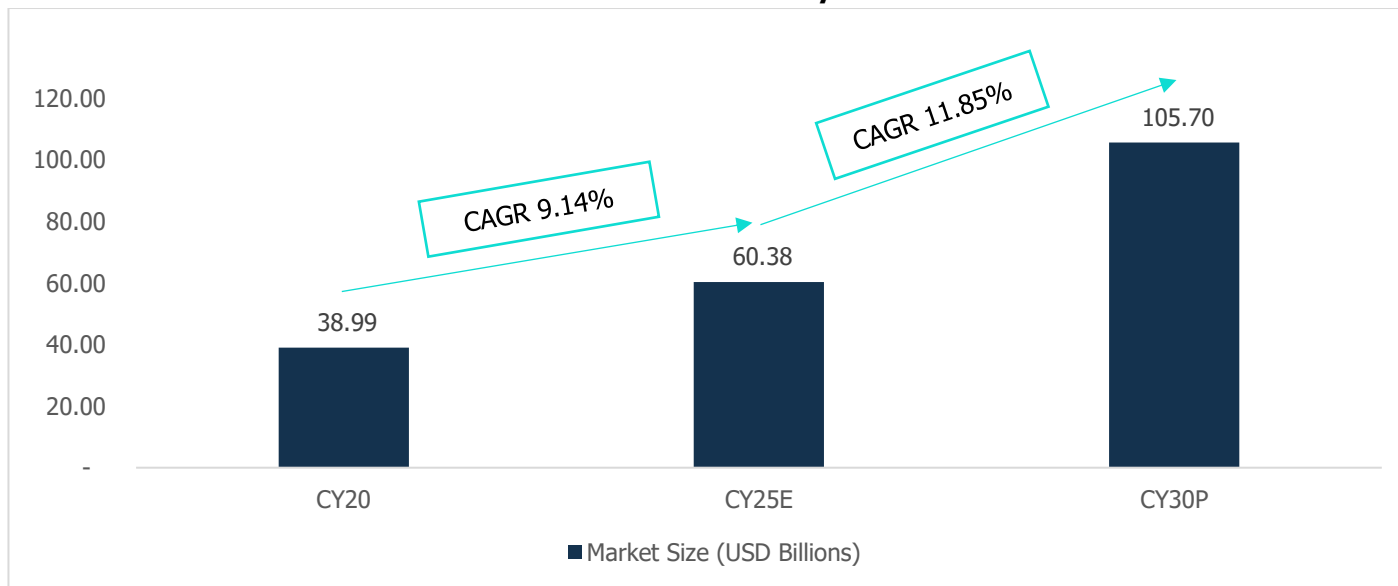
Source: Cervicorn Consulting, CareEdge Research, Company Websites

6.6 Overview of the Indian Pharmaceuticals Industry

6.6.1 Market Size of the Indian Pharmaceutical Industry

The Indian pharmaceutical industry (IPI) ranks 3rd globally in terms of volume and 14th in terms of value. Its lower market share by value is due to the dominance of generic medicines, which make up around 70% of the industry's revenue and are priced lower. The IPI is highly fragmented, with over 10,000 manufacturers in both the organised and unorganised sectors. Pharmaceutical manufacturing is primarily concentrated in Maharashtra, Gujarat, Andhra Pradesh, Telangana, Uttarakhand, and Himachal Pradesh. As per the Confederation of Indian Industries (CII), approximately 8,000 small and medium enterprises (SMEs) make up about 70% of the total pharmaceutical units in India.




Chart 56: Market Size of the Indian Pharmaceuticals Industry







Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

India's pharmaceutical sector has seen significant growth and is estimated to be USD 60.38 billion (INR 5,201.65 billion) in CY25 and is expected to reach USD 105.70 billion (INR 9,212.61 billion) by CY30, registering a CAGR of 11.85%. Low cost of production without compromising on quality, along with the highest number of USFDA-approved pharmaceutical plants (outside the USA), has placed India strategically to emerge as one of the leading producers for pharma products, which has led to robust growth. The main drivers of growth are the rising incidence of non-communicable diseases like cardiovascular disease, stroke, cancer, diabetes, and chronic lung diseases. Population growth and rising demand for pharmaceuticals are expected to further accelerate industry expansion, positioning India as one of the largest pharmaceutical markets globally in the coming years.

6.6.2 Key players in the market

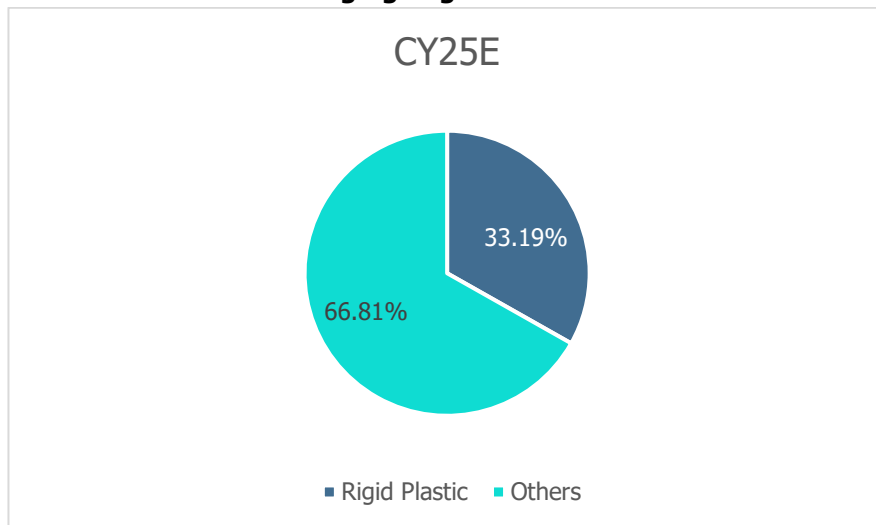
Company	Description
	Cipla Limited operates in the pharmaceutical sector, with packaging formats including blister packs for tablets and capsules, HDPE/PET bottles for syrups, tube laminates for creams, and cartons for secondary packaging. The company focuses on regulatory-compliant, tamper-evident and child-resistant packaging, along with ongoing efforts to improve material efficiency and recyclability
	Sun Pharma uses blister packs for tablets and capsules (e.g., Revital, Pantocid), HDPE/PET bottles for liquids and syrups, and tube laminates for dermatology products such as Ilumax and Moisturex, supported by cartons for secondary packaging. Packaging is designed for regulatory compliance, tamper evidence and material efficiency.
	Zydus Lifesciences primarily uses blister packs for oral solids such as Zifi and Ecosprin, bottles for syrups, and tube laminates for topical products like Glimisave Cream, with cartons for labeling and compliance. Packaging focuses on child-resistant features, serialisation, and material optimisation

 <p>Abbott</p>	<p>Abbott India uses blister packs for tablets (e.g., Thyronorm, Brufen), PET/HDPE bottles for syrups and liquids, and rigid canisters for nutritional products such as Ensure, supported by secondary cartons. Packaging priorities include product stability, safety compliance and shelf-life protection.</p>
 <p>Mankind <i>Serving Life</i></p>	<p>Mankind Pharma relies on blister packs for tablets and capsules such as amlokind, HDPE/PET bottles for syrups like Asthakind, and tube laminates for ointments, with cartons for secondary packaging. The company focuses on tamper-evident, regulation-compliant and cost-efficient packaging formats.</p>
 <p>AUROBINDO <i>Committed to healthier life!</i></p>	<p>Aurobindo Pharma Limited uses blister packs for solid oral dosages such as Losartan, Metformin and Atorvastatin, HDPE/PET bottles for syrups and liquid formulations, and tube laminates for topical products, supported by cartons for secondary labelling and compliance. Packaging is designed for regulatory safety, serialization, tamper evidence and material efficiency.</p>
 <p>Dr.Reddy's</p>	<p>Dr. Reddy's Laboratories Limited uses blister packs for tablets and capsules (e.g., Pantoprazole, Telmisartan), HDPE/PET bottles for syrups and liquids, and tube laminates for creams and gels, with cartons for secondary protection and regulatory labelling. The company focuses on compliance with pharma packaging standards, tamper-evident designs, and material optimisation.</p>

Source: Cervicorn Consulting, CareEdge Research, Company Websites

6.6.3 Share of Packaging Market in the Pharmaceuticals Industry - By Material Type

Chart 57: Share of Packaging Segment for the Pharmaceuticals Industry



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated *Other Includes flexible plastic, metal, paper & paperboard, and others

Pharmaceuticals depend heavily on the “others” category (66.81%), which includes blister packs, aluminium foils, glass vials, syringes, and paperboard cartons, all of which offer sterility, moisture protection, and compliance with stringent regulatory standards. Rigid plastics, at 33.19%, still play an important role in oral syrups, HDPE/PP containers, and OTC

products where durability, childproofing, and ease of use matter. The material mix reflects the industry's dual need for both high-barrier performance and patient convenience across multiple dosage forms.



6.6.4 Key Trends and Growth Drivers in the Pharmaceutical Packaging Industry

Key Trends in the Pharmaceutical Packaging Industry

- **Shift Towards High- Performance Materials:**

Pharmaceutical companies in India are increasingly adopting high-grade glass, HDPE, PP, and other advanced polymer materials to improve chemical resistance, moisture protection, and product shelf life. These materials help maintain drug stability and meet stringent regulatory standards, especially for sensitive formulations. This shift is driving higher demand for specialised, high-quality rigid packaging, supporting value growth in the pharmaceutical packaging industry.

- **Technological Advancements in Packaging Manufacturing:**

Pharmaceutical packaging manufacturers are increasingly adopting advanced moulding, forming and inspection technologies to meet stringent drug safety and regulatory requirements. Automated visual inspection systems help detect defects, ensure sterility and maintain batch-level consistency, which is critical for vials, ampoules and blister packs. These technological upgrades support higher production volumes, export compliance and complex formulations, driving sustained demand for high-quality rigid packaging in the pharma industry

Key Growth Drivers in the Pharmaceuticals Packaging Industry

- **Growth in the chronic diseases segment**

The chronic disease segment is poised for sustained growth in the medium term, driven by the need for long-term treatments and recurring prescriptions. Chronic care drugs, addressing non-communicable diseases like cancer, cardiovascular ailments, diabetes, and mental disorders, see higher prescription frequency due to their prolonged treatment cycles and the interconnected pharmaceutical supply chain. According to WHO data, India has experienced an increase in life years lost to non-communicable diseases from 2000 to 2021, while losses from communicable diseases like tuberculosis and respiratory infections have declined, reflecting the rising burden of chronic conditions. This trend underpins the expanding demand for chronic care medications, leading to an increase in demand for packaging products required for chronic care medications.

- **Strong Demand for Primary Rigid Packaging:**

In the Indian pharmaceutical industry, primary rigid packaging formats such as bottles, vials, ampoules, jars and blister components remain essential to ensure product safety, stability and accurate dosing. These formats are widely used across formulations, including tablets, capsules, injectables and syrups, and must comply with strict regulatory and quality standards. Growing domestic healthcare demand, rising exports of generics and injectables, and increased focus on patient safety are sustaining steady demand for reliable, high-quality rigid pharmaceutical packaging in India.

Growth in the Injectable and Biologics Segment

The rising use of injectables, vaccines and biologics in India is significantly boosting demand for specialised rigid pharmaceutical packaging. These products require high-quality glass vials, ampoules, prefillable syringes and cartridges that offer superior barrier properties, chemical inertness and sterility. Growth in chronic therapies, immunisation programmes and export-oriented injectable manufacturing is driving higher volumes and stricter quality requirements. As a result, demand for advanced, compliant rigid packaging solutions is increasing, supporting sustained growth in the rigid pharmaceutical packaging industry.

- **Government support via PLI schemes**

Government support through PLI schemes is encouraging the domestic manufacturing of high-value pharmaceutical products, increasing value addition and boosting exports. The resulting expansion in drug production is expected to generate significant employment and strengthen India's pharma ecosystem. In addition, the development of bulk drug parks in Gujarat, Himachal Pradesh and Andhra Pradesh will ensure a stable supply of active pharmaceutical ingredients and improve drug security. Together, these initiatives are driving higher and more consistent demand for pharmaceutical packaging, as increased production volumes and export-oriented manufacturing require reliable, compliant and scalable packaging solutions.

- **Rising Health Insurance Coverage and Improved Healthcare Reach**

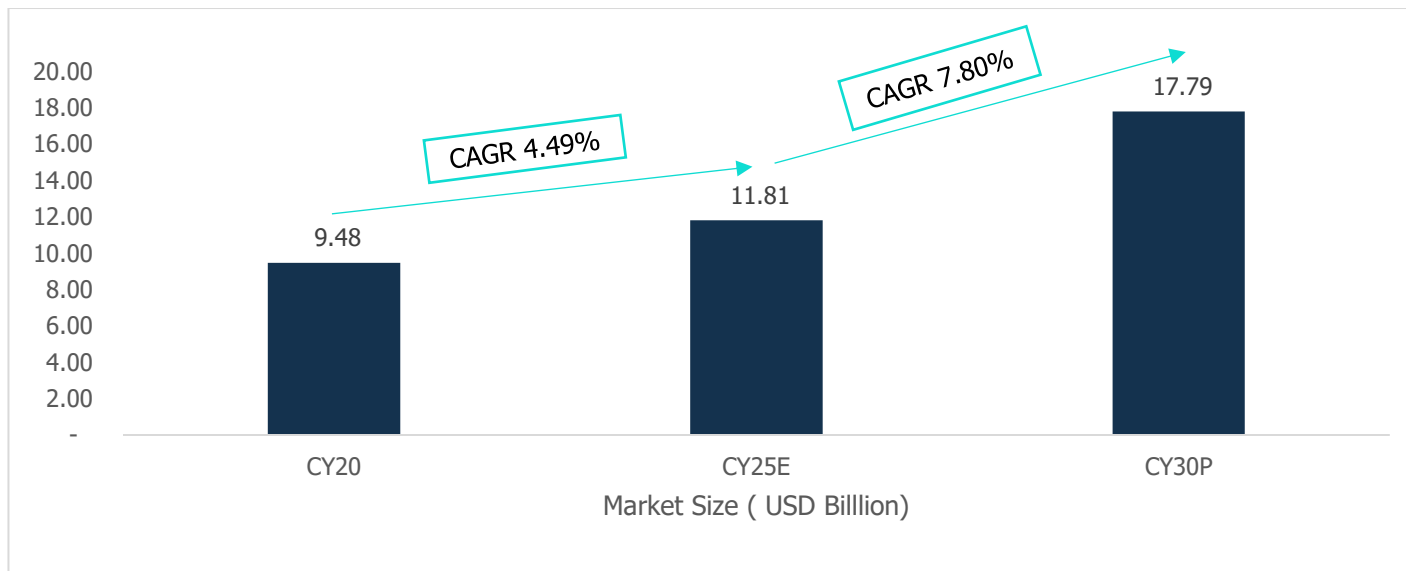
India's improving life expectancy and favourable demographic trends are being complemented by rising health insurance penetration and better access to healthcare services. Government schemes and increasing private insurance coverage are encouraging higher utilisation of medicines, diagnostics and hospital care, particularly in semi-urban and rural areas. As access to treatment expands across a larger population base, pharmaceutical consumption is rising steadily. This, in turn, is driving higher demand for rigid and general pharmaceutical packaging such as bottles, blister packs, vials and jars, as manufacturers scale production to serve a broader and more insured patient population.

6.7 Overview of the Indian Paints & Industrial Construction Chemicals Industry

6.7.1 Market Size of the Indian Paints & Industrial Construction Chemicals Industry

The Indian paints and industrial construction chemicals industry is closely linked to housing, infrastructure, and industrial activities. It is divided into two main segments: decorative paints, which target retail consumers, and industrial paints and coatings used in automotive, marine, and construction applications. The decorative segment holds a larger share of the domestic market, driven by ongoing urban housing development, repainting cycles, and a growing consumer preference for aesthetic and functional coatings. The industrial chemicals segment includes adhesives, sealants, waterproofing solutions, and floor coatings, which are widely used in both new construction and maintenance projects.




Chart 58: Market Size of the Indian Paints and Adhesives





Source: Cervicorn Consulting, CareEdge Research, E denotes estimated P denotes projected

The combined market size of the Indian paints and construction chemicals industry is estimated to be around USD 11.81 billion (INR 1,017.25 billion) in CY25 and is expected to reach USD 17.79 billion (INR 1,550.94 billion), registering a CAGR of 8.66%. Growth in this industry is driven by government investments in housing and infrastructure, an increase in disposable incomes, and the expansion of organised retail. Construction chemicals are gaining traction due to the rising use of modern building materials and waterproofing solutions. The primary packaging for these products includes metal cans, HDPE containers, and barrels, selected for their durability and compatibility with chemicals. Growth in these segments directly boosts demand for rigid plastic and metal packaging solutions.

6.7.2 Key players in the market

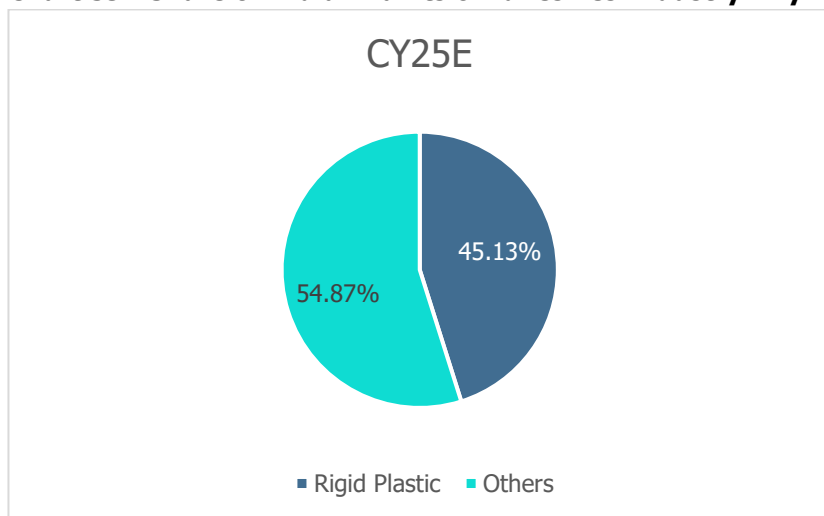
Company	Description
	Pidilite Industries Limited operates in the paints, adhesives and specialty chemicals segment with brands such as Fevicol, M-seal, Dr. Fixit and Fevitas (art & craft adhesives). The company uses a mix of rigid and flexible packaging formats, including HDPE/PET bottles and jars for liquid adhesives and construction chemicals, tube laminates for sealants and adhesives such as Fevikwik, and metal cans/cartons for paints and coatings products. Packaging initiatives focus on lightweighting of containers, improved barrier and dispensing features, and enhanced recyclability of plastic and metal packaging formats to support material efficiency and sustainability.
	Berger Paints India Limited operates in the paints & coatings segment with products such as Berger’s WeatherCoat, Breathe Easy and EasyClean. The company uses metal cans (tin/steel) as the primary packaging for liquid paints across sizes, supported by HDPE/PET containers for primers and thinners, and cartons/shrink wraps for multipack kits. Packaging initiatives focus on lightweighting metal cans, improved closure systems for reduced spills, and enhanced label durability and recyclability.
	AkzoNobel India Limited operates in the paints & coatings segment with brands such as Dulux, Royale Aspira and Dulux Weathershield. Packaging formats include steel/metal paint cans across key sizes, plastic/HDPE containers for specialty coatings, and secondary cartons for retail packs. The company’s packaging focus includes can structural improvements for

	transportation efficiency, label and closure enhancements, and material optimisation to support sustainability.
	Asian Paints Limited is a major player in the paints & coatings segment, with products such as Asian Paints Royale, Apex Ultima and SmartCare Wood Coatings. The company uses metal paint cans for decorative and protective coatings, HDPE/PET containers for primers and emulsions, and labels/cartons for branding and regulatory info. Packaging efforts include lightweighting of cans, improved can and closure design for spill reduction, and enhanced recyclability of metal and plastic packaging.
	Kansai Nerolac Paints Limited operates in the paints & coatings segment with brands such as Nerolac Impressions, Excel Total and Satin Gloss Enamel. The company primarily uses metal tins/cans for paints, plastic containers for specialty coatings and thinners, and cartons/shrink wrap for multipack configurations. Kansai Nerolac’s packaging priorities include can/lightweight design optimisations, durable labels and closures, and improvements in material efficiency and recyclability.

Source: Cervicorn Consulting, CareEdge Research, Company Websites

6.7.3 Share of Packaging Market in the Paints & Industrial Construction Chemicals Industry - By Material Type

Chart 59: Share of Indian Paints & Adhesives Industry - By Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated *Others include flexible plastic, metal, paper & paperboard, and others

Rigid plastics contribute 45.13% to the paints and adhesives segment, supported by strong demand for plastic pails, cans, and squeeze bottles that offer durability, leak resistance, and improved handling across retail and contractor markets. “Others,” forming 54.87% of the share, include metal cans and composite formats preferred for industrial and large-volume applications due to their superior strength and ability to protect product integrity under harsher storage conditions. This mix highlights a clear divide between retail-friendly plastic formats and industrial-grade metal packaging.



6.7.4 Key Trends and Growth Drivers in the Indian Paints and Adhesives Industry

Key Trends in the Indian Paints and Adhesives Industry

- **Dominance of Metal Cans & Industrial Drums for Solvent-based Products**

In the Indian paints and adhesives industry, solvent-based paints, industrial coatings and several adhesive formulations continue to rely heavily on tinplate and steel cans, tin containers and lined industrial drums. These metal packaging formats offer superior chemical resistance, prevent solvent evaporation, and ensure safe storage and transport of hazardous materials. Their strength and impermeability make them well-suited for bulk handling, long-distance distribution and industrial usage. As demand for solvent-based products from infrastructure, construction and manufacturing sectors remains steady, consumption of metal cans and drums is expected to grow in line, supporting sustained demand for rigid metal packaging in the paints and adhesives industry.

- **Premiumisation and aesthetic differentiation**

Consumers and commercial buyers show greater interest in higher-performance and decorative finishes, prompting manufacturers to expand their premium product ranges and colour systems. Premium products often incorporate improved washability, stain resistance or low-VOC formulations, and require complementary primers and sealants. Retailers and paint brands support these launches with point-of-sale colour services and small-pack formats for trial. For instance, demand for textured and washable interior emulsions has increased in urban retail channels leading to increase in usage of unique and specialised rigid packaging products.

- **Rising Use of Polymer Containers for Water-based and Consumer Lines**

In the Indian paints and adhesives industry, polymer-based containers such as HDPE and PP jerrycans, PET jars and rigid plastic pails are increasingly being used for water-based paints, wood finishes and consumer adhesive products. These containers are lighter, more cost-effective and offer better drop resistance compared to metal packaging, making them suitable for retail distribution and home use. Their ease of handling and compatibility with modern trade and e-commerce channels are further supporting adoption. As demand for water-based and consumer-oriented products grows, the use of polymer rigid packaging is rising as well, driving steady growth in plastic packaging consumption within the paints and adhesives segment.

Key Growth Drivers of the In the Indian Paints and Adhesives Industry

- **Infrastructure and public works spending**

Government-led infrastructure projects such as roads, bridges, metro systems and public buildings are driving higher demand for industrial coatings, protective paints and specialised construction chemicals. These projects typically use specification-grade products that require consistent quality, safe handling and long-distance transport. As volumes increase and products are supplied in bulk, demand for robust and compliant packaging such as metal drums, pails and large-capacity containers rises in parallel. The growing use of certified coating systems in projects like metro stations and transport hubs is therefore directly supporting higher demand for industrial packaging in the paints and adhesives industry.

- **Urbanisation and housing growth**

Rapid urbanisation and new housing supply continue to support demand for decorative paints and construction chemicals. As residential projects move into finishing stages, demand increases for interior and exterior paints, primers and waterproofing products, while existing housing stock also drives steady repainting and colour refresh cycles. Ongoing residential, commercial and infrastructure activity, along with rising DIY and home-improvement trends, is expanding demand across multiple pack sizes ranging from 1L and 4L retail packs to 20L, 50L and larger industrial drums. This sustained consumption is supporting steady demand for rigid packaging such as plastic pails, jerrycans and metal containers used by large paint manufacturers.

- **Renovation, maintenance and retrofit activity**

Renovation cycles in both residential and commercial buildings generate recurring demand for paints and maintenance chemicals such as sealants, waterproofing membranes and anti-corrosion coatings. As buildings age, owners undertake repainting, surface repairs and upgrades to meet changing use or appearance requirements, sustaining year-on-year sales beyond new-construction demand. Maintenance-driven purchases are often less seasonal and support stable demand for mid- and small-sized packs which leads to steady demand and usage of rigid packaging products required in the paints and adhesives industry. An example is the steady market for exterior emulsions and roof coatings used in refurbishment projects across older housing stock.

- **Regulatory and sustainability requirements**

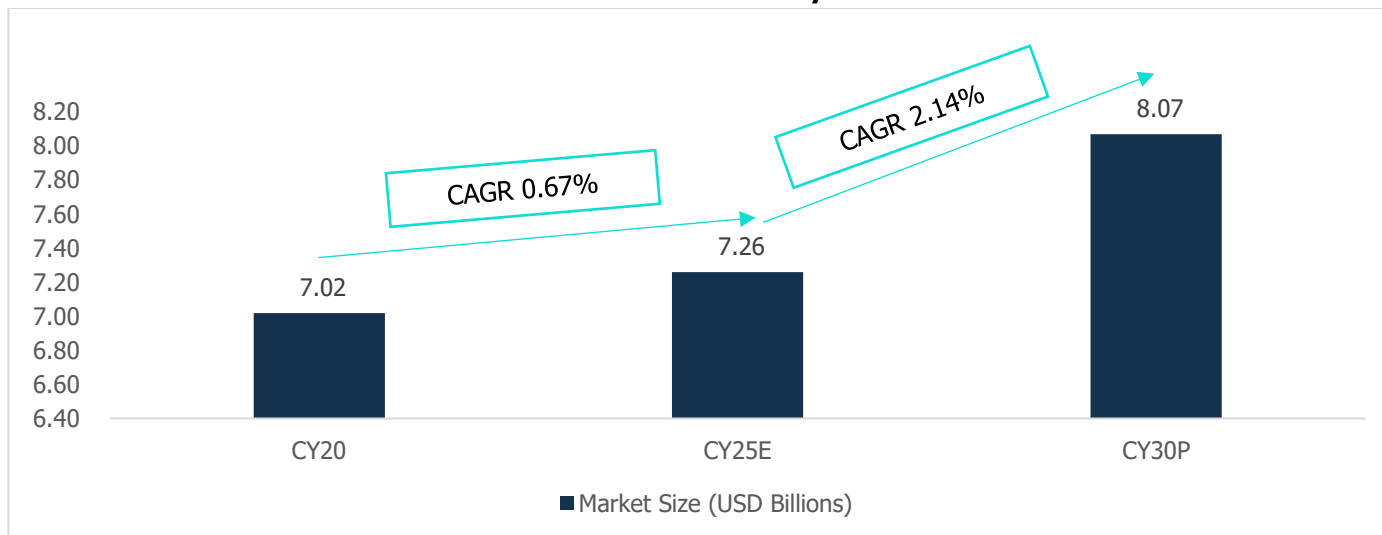
Stricter environmental regulations and the increasing adoption of green-building standards are supporting steady demand for low-VOC paints, water-based formulations and certified construction-chemical systems. Compliance with indoor air-quality norms and building codes has made low-emission products a key requirement in institutional and commercial projects. As manufacturers continue to reformulate products and expand certified portfolios, demand for compatible and compliant packaging such as polymer containers, lined pails and bulk packs remains steady across the paints and adhesives industry.

6.8 Overview of the Indian Oil & Lubricants Industry

6.8.1 Market Size of the Indian Oil & Lubricants Industry

The Indian oil and lubricants industry plays a crucial role in the country's energy and manufacturing landscape. It encompasses various products, including base oils, finished lubricants, greases, and a wide array of industrial and automotive fluids. This sector involves both upstream refining processes and downstream blending and distribution networks. The industry caters to numerous segments, including automotive, industrial machinery, marine, and energy generation, while also facilitating exports of base oils and blended lubricants. The growth of the transportation and manufacturing sectors, along with ongoing infrastructure development, is driving the demand for refined oil and lubricants throughout the country.

Chart 60: Market Size of the Indian Oil & Lubricants Industry





Source: Cervicorn Consulting, CareEdge Research, P denotes projected, E denotes estimated

Note: The market size specifically represents the finished lubricants market. It refers to products that are consumer-ready and packaged in bottles, cans, and drums.

In terms of market size, the Indian oil and lubricants industry is estimated to be USD 7.26 billion (INR 625.45 billion) in CY25 and it is expected to reach USD 8.07 billion (INR 703.38 billion), registering a CAGR of 2.14%. This segment encompasses fuel oils, base oils, and finished lubricants. The primary demand comes from the automotive sector, followed by usage in industrial and construction equipment. Growth in the oil segment is fueled by expanding refining capacity, increased integration with petrochemicals, and stable consumption across both the transport and industrial sectors. Packaging solutions in this industry vary from metal drums and barrels for bulk oil to HDPE bottles, jars, and pails for lubricants, chosen for their resistance to leakage and chemical degradation. The market's consistent growth is driven by increasing vehicle ownership, rising mechanisation in agriculture, and ongoing industrial modernisation, factors that collectively sustain long-term demand for oil and lubricant packaging solutions.

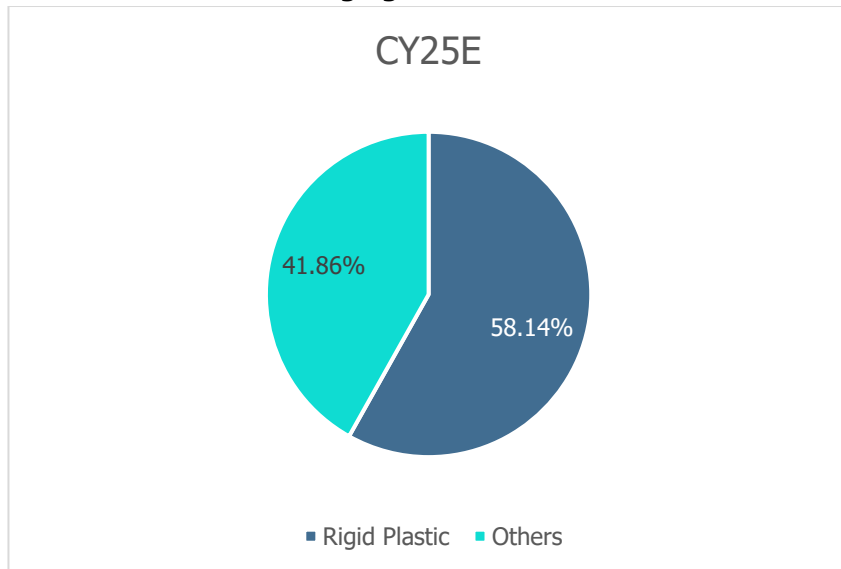
6.8.2 Key players in the market

Company	Description
	Servo Lubricants (Indian Oil & Shell JV) operates in the oil and lubricants segment with products such as Servo Super Moto 4T, Servo Star Hydraulic Oil and Servo Transmission Oil. The company uses rigid packaging formats including HDPE and PET bottles, metal drums for bulk industrial lubricants, and pails/cans for mid-size volumes, supported by labels and cartons for branding and regulatory information. Packaging efforts focus on lightweighting of plastic containers, improved closure and dispensing designs, and enhanced material efficiency and recyclability aligned with industry sustainability trends.
	Castrol India Limited operates in the oil & lubricants segment with products such as Castrol GTX, Castrol MAGNATEC and Castrol POWER1. Packaging formats include HDPE/PET bottles for automotive and industrial lubricants, metal drums for bulk volumes, and pails/cans for mid-size packs, supported by labels, caps and cartons. Castrol focuses on lightweighting of plastic containers, enhanced dispensing closures, and improved material efficiency and recyclability.

	<p>Hindustan Petroleum Corporation Limited (HP Lubricants) operates in the oil & lubricants segment with products such as HP Metalub Neo, HP RAC Extra and HP Energol series. Packaging predominantly includes HDPE/PET bottles for automotive and industrial oils, metal drums for bulk volumes and intermediate cans/pails, with labels and secondary cartons. HP Lubricants emphasises pouch/cap design improvements, lightweight containers, and steps toward recyclable packaging materials.</p>
	<p>MAK Lubricants serves the oil & lubricants segment with products like MAK Trac GT, MAK Fluid 50 and MAK Trans Gear Oils. Packaging formats include HDPE/PET bottles for retail packs, metal drums for industrial volumes, and pails/cans, with labels and cartons for branding and compliance. MAK focuses on optimized bottle designs, improved dispensing closures and material use efficiency to support logistics and sustainability</p>
	<p>Shell India (Shell Lubricants) operates in the oil & lubricants segment with products such as Shell Helix Ultra, Shell Advance and Shell Rimula. Packaging is primarily HDPE/PET bottles (various sizes) for automotive and industrial lubricants, metal drums for bulk, and pails/cans for intermediate packs, supported by high-quality labels and closure systems. Shell's packaging priorities include lightweighting, improved dispensing design, and increased recyclability of rigid plastic formats.</p>
	<p>Gulf Oil Lubricants India Limited operates in the oil & lubricants segment with products such as Gulf Pride, Gulf Superfleet and Gulf Formula G. Packaging formats include HDPE/PET bottles for automotive and industrial oils, metal drums/pails for larger volumes, and labels/cartons for retail display. Gulf focuses on container lightweighting, enhanced closure/dispensing systems, and recyclability improvements across plastic packaging.</p>
	<p>Veedol Lubricants (Rekagroup) operates in the oil & lubricants segment with products such as Veedol Racing 4T, Veedol Monograde Oils and Veedol Automatic Transmission Fluids. Packaging formats include HDPE/PET bottles for retail lubricant packs, metal drums/pails for industrial sizes, and secondary cartons for labelling and branding. Veedol's packaging focus includes optimised bottle design, lightweighting measures, and improved material efficiency to support sustainability. Exhibit line:</p>
	<p>Valvoline India operates in the oil & lubricants segment with products such as Valvoline All Climate, Valvoline Premium Blue and Valvoline SynPower. Packaging formats include HDPE/PET bottles for automotive and industrial oils, metal drums for bulk volumes, and pails/cans for intermediate packs, supported by labels and cartons for branding and compliance. Valvoline's packaging focus includes lightweighting of rigid containers, improved dispensing closures, and enhanced material efficiency and recyclability.</p>
	<p>TotalEnergies (India and global operations) operates in the oil & lubricants segment with products such as Total Quartz engine oils, Total Rubia heavy-duty lubricants and Total Classic series. The company uses HDPE/PET bottles for retail lubricants, metal drums for bulk and industrial sizes, and pails/cans for intermediate packs, with labels and secondary cartons for information and branding. TotalEnergies emphasises container lightweighting, optimized closure and dispensing designs, and improved recyclability of plastic and metal packaging.</p>

6.8.3 Share of Packaging Market in the Oil & Lubricants Industry - By Material Type

Chart 61: Share of Packaging Market in the Oil & Lubricants Industry - By Material Type



Source: Cervicorn Consulting, CareEdge Research, E denotes estimated *Others include flexible plastic, metal, paper & paperboard, and others

In the oil and lubricants segment, rigid plastics hold a majority at 58.14%, driven by their suitability for automotive oils, coolants, industrial fluids, and retail packs where durability, ergonomic design, and resistance to leakage are critical. The 41.86% share of “others” reflects the continued use of metal drums, flexible pouches, and paper-based outer packaging for bulk transport, B2B applications, and warehouse storage. The near-balanced split indicates a transition phase where rigid plastics are gaining traction, but metals remain indispensable for heavy-duty industrial logistics.



6.8.4 Key Trends and Growth Drivers in the Oil and Lubricants Packaging Industry.

Key Trends in The Oil and Lubricants Packaging Industry

- **Technological Advancements in Packaging Manufacturing**

Advanced blow-moulding and injection-moulding technologies are improving production efficiency, quality consistency, and design flexibility for rigid packaging used in the Indian oil and lubricants industry. These technologies enable leak-proof, lightweight, and durable containers, while also supporting high-volume manufacturing, customised designs, and tamper-evident features required by lubricant brands. As a result, packaging manufacturers are better equipped to meet growing demand across retail, aftermarket, and industrial lubricant segments.

- **Shift to synthetic and performance-grade formulations**

The gradual shift from mineral oils to semi-synthetic and fully synthetic lubricants is driving demand for products that offer longer drain intervals, better thermal stability, and lower volatility. These higher-value lubricants are increasingly recommended by OEMs to meet emission norms, fuel-efficiency targets, and engine-protection requirements. As synthetic and premium oils are typically positioned at higher price points, manufacturers place greater emphasis on high-quality, leak-proof, and tamper-evident rigid plastic packaging to protect product integrity and support premium branding. Improved bottle design, labelling clarity, and compatibility with advanced formulations further reinforce the role of HDPE rigid packaging in the distribution of synthetic and premium lubricant products.

- **Vehicle parc expansion and fleet modernisation**

Growth in vehicle ownership, including passenger cars, two-wheelers and commercial fleets, increases demand for engine oils, transmission fluids and greases. Fleet modernisation, particularly among commercial transporters, raises requirements for higher-specification lubricants that support longer drain intervals and improved fuel economy. OEMs' service recommendations and warranty schedules also shape lubricant consumption patterns and product specifications. For example, rising heavy-truck activity creates demand for heavy-duty engine oils meeting OEM performance standards, leading to an increased demand for packaging products catered to support the higher demand.

Key Growth Drivers in the Oil and Lubricants Industry

- **Dominance of Plastic Rigid Packaging**

Plastic rigid packaging, such as HDPE cans, bottles, jerrycans, and drums, dominates the Indian oil and lubricants industry due to its high chemical resistance, durability, and lightweight nature. These formats reduce transportation costs, withstand rough handling, and are well-suited for both retail and industrial lubricant applications. Rising vehicle ownership, strong aftermarket demand, and growing industrial and infrastructure activity continue to support volume growth across pack sizes. In addition, trends such as tamper-evident packaging, better branding, and increasing use of recyclable HDPE are reinforcing the preference for rigid plastic packaging.

- **Industrialisation and manufacturing output**

Rising manufacturing, construction, and mining activity in India is driving higher consumption of industrial lubricants used in gearboxes, compressors, hydraulic systems, and heavy machinery. Growth in both discrete and process manufacturing is increasing demand for specialised oils and greases with specific viscosity and additive requirements. This, in turn, is supporting demand for reliable and durable plastic rigid packaging, such as HDPE jerrycans and drums, which are well-suited for bulk handling, safe storage, and transportation to industrial sites. Industrial customers also value leak-proof packaging and consistent pack sizes to ensure uninterrupted supply and equipment uptime, reinforcing the role of rigid plastic packaging in industrial lubricant distribution.

- **Regulatory norms and fuel-quality improvements**

Evolving fuel specifications, stricter emission norms, and tighter industrial regulations are influencing lubricant formulations and product approvals in India. The shift toward cleaner fuels and higher emission standards requires compatible lubricants that can protect engines under new combustion conditions and meet OEM warranty requirements. At the same time, regulations around the labelling, storage, and transportation of petroleum products are becoming more stringent, increasing the need for leak-proof, durable, and compliant rigid packaging. Growing focus on used-oil collection, safe disposal, and re-refining is further shaping industry practices, supporting demand for standardised and regulation-compliant packaging solutions.

- **Packaging Demand Across Pack Sizes**

Packaging demand in the oil and lubricants industry spans small packs (0.5–1 litre) used for two-wheelers and passenger vehicles to large packs (20–210 litres) for fleet operators, industrial users, and bulk consumers. Rising vehicle ownership, strong aftermarket servicing activity, and expanding industrial and infrastructure operations are driving demand across this wide range of pack sizes. This diversity supports steady volume growth for rigid plastic packaging, as HDPE bottles, jerrycans, and drums remain the preferred formats due to their durability, leak resistance, ease of handling, and suitability for both retail and bulk distribution.

7 Overview of the Recycled PET Industry

7.1 Overview and Market Size of Recycled PET

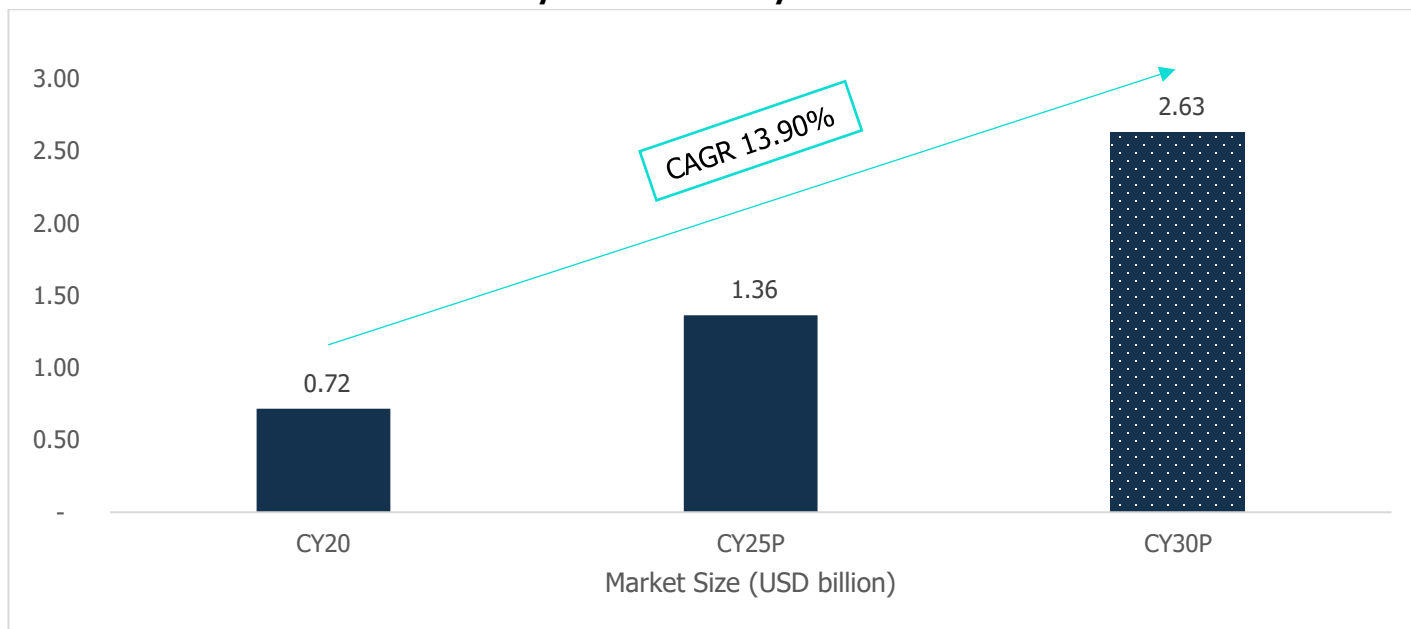
Material Characteristics

Recycled Polyethylene Terephthalate (rPET) is produced by processing post-consumer PET waste such as used beverage bottles, food containers, and other PET-based packaging materials through mechanical or chemical recycling methods. The recycling process typically involves collection, sorting, washing, and reprocessing to yield a high-quality resin that retains most of the desirable attributes of virgin PET. rPET offers comparable strength, transparency, and impact resistance to virgin PET, while maintaining a lightweight structure and excellent durability.

Its strong barrier properties against gases, moisture, and ultraviolet light help preserve product quality, freshness, and shelf life, which is critical for sensitive segments such as beverages, dairy, edible oils, personal care, and pharmaceuticals.

In addition, rPET's design flexibility allows it to be moulded into bottles, containers, films, and sheets of various shapes and sizes, supporting both functional and aesthetic requirements of brands. These qualities make rPET a technically reliable and sustainable packaging material that meets modern performance and safety standards across multiple industries.

Chart 62: Market Size of the Indian Recycled PET Industry



Source: Cervicorn Consulting, CareEdge Research, P denotes projected, E denotes estimated

Sustainable Alternative to Virgin PET

rPET plays a pivotal role in advancing the circular economy by reusing plastic waste and reducing dependence on virgin fossil-fuel-based resins. The production of rPET requires up to 60% less energy and generates significantly lower greenhouse gas emissions compared to virgin PET manufacturing. This not only minimises environmental impact but also supports national and global sustainability goals.

In India, the government's Extended Producer Responsibility (EPR) framework under the Plastic Waste Management Rules has mandated the gradual inclusion of recycled content in packaging materials, including PET bottles.

Consequently, brand owners and packaging manufacturers are actively increasing the use of rPET to meet regulatory compliance, ESG goals, and consumer expectations for sustainable packaging.

Beyond regulation, the shift towards rPET aligns with the broader ESG (Environmental, Social, and Governance) agenda adopted by leading FMCG, beverage, and personal care companies. By integrating rPET into their packaging portfolios, these companies demonstrate commitment to responsible production, resource efficiency, and waste reduction values increasingly prioritised by investors, regulators, and end consumers alike.

Applications in Rigid Packaging, Flexible Packaging and Preforms



Rigid Packaging

rPET is extensively used in the manufacture of bottles, jars, containers, and closures for beverages, dairy, personal care, and pharmaceutical products. Its clarity, strength, and chemical resistance ensure product safety, durability, and extended shelf life, making it a preferred material for both mass and premium packaging applications.



Flexible Packaging

Increasingly, rPET is being incorporated into thermoformed trays, sheets, and multilayer films used for packaging ready-to-eat meals, bakery items, electronics, and healthcare products. It offers an optimal balance between lightweight performance and sustainability while maintaining essential barrier and structural properties.



Preforms

rPET preforms serve as a critical intermediate input in the production of bottles for water, soft drinks, juices, and edible oils. Their high clarity, strength, and food-grade compliance allow manufacturers to scale sustainable packaging efficiently, ensuring product quality while embedding recycled content at the source of production.

7.2 Key Growth Drivers and Trends of the Indian Recycled PET Industry

Key Trends in the Indian Recycled PET Industry

Sustainability and ESG Commitments

Leading FMCG and beverage brands are increasingly integrating rPET into their packaging portfolios to meet ESG and carbon reduction goals. Growing consumer preference for eco-friendly packaging further incentivizes companies to adopt rPET, aligning brand image with sustainability values.

Technological Innovations in Recycling

Advances in mechanical and chemical recycling now enable the production of food-grade rPET with superior purity and performance. Technologies such as depolymerisation and solid-state polymerisation (SSP) are enhancing recycle quality and expanding rPET applications in pharma, beverages, and textiles.

Rising Public Awareness & Consumer Preference

Rising awareness around plastic waste, marine pollution and climate impact is making consumers more conscious of packaging choices, particularly in urban and premium consumption segments. Shoppers increasingly favour brands that use recycled materials and clearly communicate sustainability credentials through on-pack labelling such as “made with recycled PET” or “100% recyclable.” This shift in consumer perception is encouraging FMCG and beverage companies to adopt rPET not only to meet regulatory requirements, but also as a brand differentiation tool, strengthening trust, brand loyalty and willingness to pay for environmentally responsible products.

Key Growth Drivers in the Indian Recycled PET Industry

Regulatory Push and EPR Framework

Government mandates under the Plastic Waste Management Rules now require PET bottles to contain at least 30% recycled content, creating a strong regulatory tailwind. This has accelerated investments in collection, segregation, and recycling infrastructure, ensuring compliance and driving formalisation of the recycling ecosystem



Cost Efficiency and Circular Economy Impact

rPET reduces dependency on virgin PET derived from crude oil, offering cost stability and sustainability benefits. By reusing post-consumer waste, companies support a closed-loop, circular economy, minimising landfill waste and advancing India’s plastic circularity goals.

Expanding Beverage and FMCG Demand

India’s rapidly growing bottled water and soft drink market, along with increased consumption of packaged food, is fueling rPET demand. rPET containers offer the same strength, clarity, and safety as virgin PET, making them ideal for food-grade and personal care packaging.

7.3 Key players in the market

Key Players in India's R-PET Industry	Description	Sectors
	Indorama Ventures operates across the full PET value chain, with manufacturing facilities for virgin and recycled PET. The company continues to invest in expanding its recycling capacity, adopting bio-based feedstock, and decarbonising production processes to support a circular plastics economy.	PET, recycled PET and polyester fibers and yarns
	Manjushree Technopack is a major rigid plastic packaging producer offering integrated packaging solutions from design to delivery. Its portfolio includes containers, preforms, caps and closures, pumps and dispensers, and in-house recycling capabilities. The company serves multiple industries, including food and beverages, home and	PET bottles, PET and HDPE jars and containers and rigid plastic homecare products

	personal care, pharmaceuticals, paints, dairy, automotive, and agrochemicals.	
	Ganesha Ecosphere is among India's largest producers of rPET fibre and yarn made from used PET bottles. It operates collection and recycling units across India, processing both pre- and post-consumer PET scrap. The company supplies rPET to the textile, furnishings, and non-woven sectors.	Polyester staple fibre and polyester spun yarn
	Race Eco Chain (RACE) operates a digital supply chain network for plastic waste collection and processing. The company focuses on creating an organised system for sourcing PET waste and connecting recyclers, producers, and waste generators under a traceable recycling model.	Biomass fuels, PET bottle recycling
	JB Ecotex, based in Gujarat, manufactures rPET flakes and fibres for textile and industrial applications. The company supplies to domestic and global manufacturers and is recognised for maintaining quality and traceability standards across its recycling processes.	Food-grade rpet resins, recycled polyester staple fiber
	Go Rewise recycles post-consumer PET bottles into high-quality flakes and fibres. It operates advanced processing units aimed at scaling the recycling of PET waste in India. The company's operations are focused on resource recovery and the conversion of waste into usable polymer products.	rPET flakes, rPET chips textile/ sheet grade and rPET chips, bottle grade
	Pashupati Group engages in plastic waste collection and recycling to produce rPET and other polymer-based materials. It reprocesses scrap plastic into functional raw materials used in textiles, packaging, and industrial products, contributing to reduced dependence on virgin polymers.	Recycled PET Granules (Food Grade), Yarn, Recycled fiber and PP and HDPE fabric for packaging
	Alliance Fibres Ltd. is a producer of recycled polyester fibre derived from PET waste. The company supplies to domestic and international textile manufacturers and focuses on process efficiency and material quality in recycled fibre production.	Recycled polyester staple fibres, recycled polyester yarns and PET bottle flakes
	Magpet Polymers uses chemical recycling to depolymerise PET waste into its base monomers, allowing production of recycled PET comparable in quality to virgin-grade material. Its products are suitable for use in food-grade and high-performance packaging applications.	rPET flakes and rPET pellets
	Dalmia Polypro manufactures recycled PET flakes and granules meeting quality standards for industrial and consumer applications. The company's products are used in packaging, textiles, and moulding industries, and it operates facilities for sorting and washing post-consumer PET waste.	rPET flakes, rPET Granules and Polyolefin granules

Source: Cervicorn Consulting, CareEdge Research, Company Websites

7.4 Threats and Challenges of the Indian Recycled PET Industry

Raw Infrastructure and Logistics Challenges

India's recycling value chain still lacks robust, large-scale infrastructure for the collection, transportation, and processing of PET waste. The absence of organised logistics networks drives up costs, limits material traceability, and creates regional supply imbalances. In many areas, recyclers rely on small aggregators or middlemen, making the supply chain inefficient and unpredictable. Addressing these bottlenecks will require public-private partnerships, government incentives, and greater industry coordination to build an integrated and reliable recycling ecosystem.

Environmental and Contamination Risks

A major operational challenge is contamination, when PET waste is mixed with food residue, labels, caps, or other non-PET materials. Such contamination reduces the efficiency of recycling processes and can degrade the final product's quality, sometimes rendering it unfit for food-grade use. Poor waste handling and lack of public awareness exacerbate this issue. Maintaining a clean, traceable, and well-segregated waste stream is critical for achieving consistent output and ensuring the safety of recycled materials.

Consumer Awareness and Brand Perception

Despite growing sustainability narratives, a segment of consumers and even some brands still associate recycled products with inferior quality or hygiene concerns. This perception gap hampers widespread acceptance of rPET in premium product categories such as beverages and personal care. Changing this mindset requires sustained education, transparent communication, and strong brand-led initiatives that demonstrate rPET's safety, reliability, and environmental value. As leading brands begin showcasing successful rPET use cases, trust and adoption are likely to strengthen gradually.

Technological Barriers and Capital Constraints

Producing high-quality, food-contact-grade rPET demands sophisticated recycling processes such as solid-state polymerisation (SSP) and chemical depolymerisation. These technologies improve purity and performance but require substantial capital outlay, technical expertise, and quality control infrastructure. Smaller and mid-sized recyclers often lack access to such advanced systems, which limits the scalability and efficiency of the overall recycling ecosystem. Without modernisation, India risks lagging global peers in terms of technology and output quality.

Price Competition from Virgin PET

The economics of recycling often depend on the relative price of virgin PET resin. When crude oil prices fall, virgin PET becomes cheaper, making it financially attractive for brands, especially price-sensitive ones, to opt for virgin resin instead of rPET. This price volatility creates uncertainty in the recycled PET market, discouraging long-term investment and slowing the adoption of recycled content. As a result, recyclers struggle to maintain margins and capacity utilisation during periods of low virgin resin prices.

Limited and Inconsistent Feedstock Supply

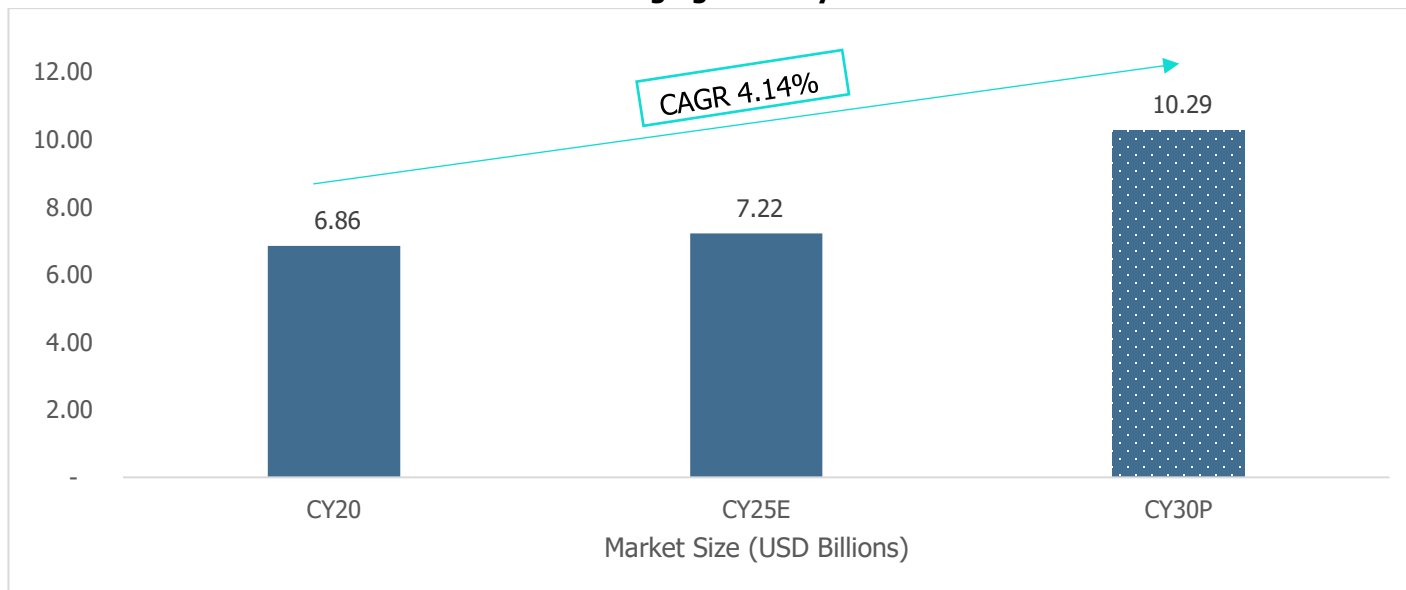
The industry depends on a steady flow of clean PET waste, but India's fragmented collection ecosystem, especially in tier-2 and tier-3 cities, creates an irregular supply. This makes it difficult to maintain consistent production and limits the availability of high-grade rPET material.

8 Overview of the Indian Metal Packaging Industry

8.1 Overview and Market Size of the Indian Metal Packaging Industry

The Indian metal packaging industry is essential for providing durable, protective, and fully recyclable packaging solutions across various sectors. Primarily composed of aluminium and tinplate, metal packaging is commonly used for food, beverages, paints, aerosols, and industrial products where strength, shelf life, and tamper resistance are critical. The industry is benefiting from a growing awareness of sustainable materials and the inherent recyclability of metals, particularly aluminium. While alternatives such as plastic and paper have gained popularity, metal packaging maintains a strong foothold in premium, high-safety, and long-shelf-life applications.

Chart 63: Market Size of the Indian Metal Packaging Industry



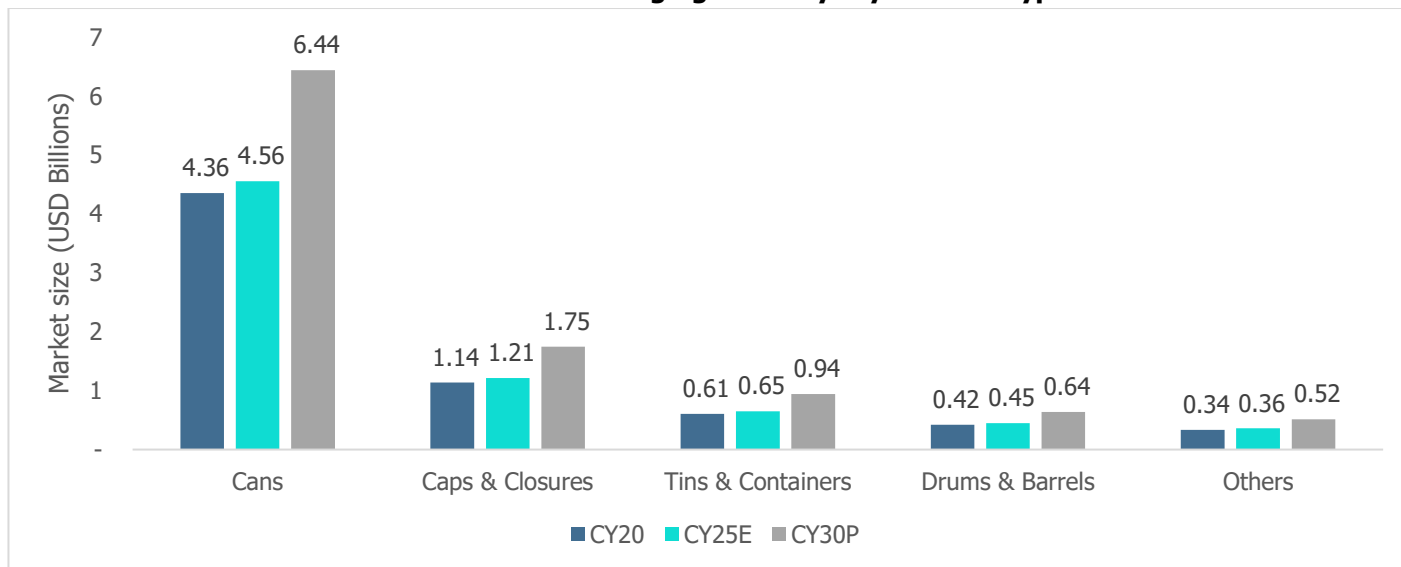
Source: Cervicorn Consulting, CareEdge Research, P denotes projected, E denotes estimated

The Indian metal packaging market is estimated to be at approximately USD 7.22 billion (INR 622.42 billion) in CY25. By CY30, the market is projected to exceed USD 10.29 billion (INR 896.52 billion), showing a CAGR of 7.32% between CY25-CY30. This steady growth is driven by the increasing demand for canned foods, alcoholic beverages, paints, and aerosols. Urban consumption is on the rise, and greater investment in metal recycling and lightweight can manufacturing supports this upward trend. However, the industry faces challenges from cost sensitivity and competition from plastic and flexible materials.

8.2 Overview and Market Size of the Indian Metal Packaging Industry- by Product Type

India's metal packaging industry features a diverse array of products designed for various applications. Cans made from steel and aluminium are popular choices for food and beverage packaging, thanks to their excellent ability to protect products and their recyclability. Caps and closures are crucial for sealing and preserving liquid products, particularly in the fast-moving consumer goods (FMCG) and pharmaceutical sectors. Tins and containers are commonly used for paints, confectionery, and personal care products, while drums and barrels cater to heavy-duty industrial needs in packaging chemicals, lubricants, and construction materials. Additionally, the "others" category encompasses speciality and decorative metal packs aimed at premium goods.

Chart 64: Market Size of the Indian Metal Packaging Industry- by Product Type



Source: Cervicorn Consulting, CareEdge Research, P denotes projected, E denotes estimated

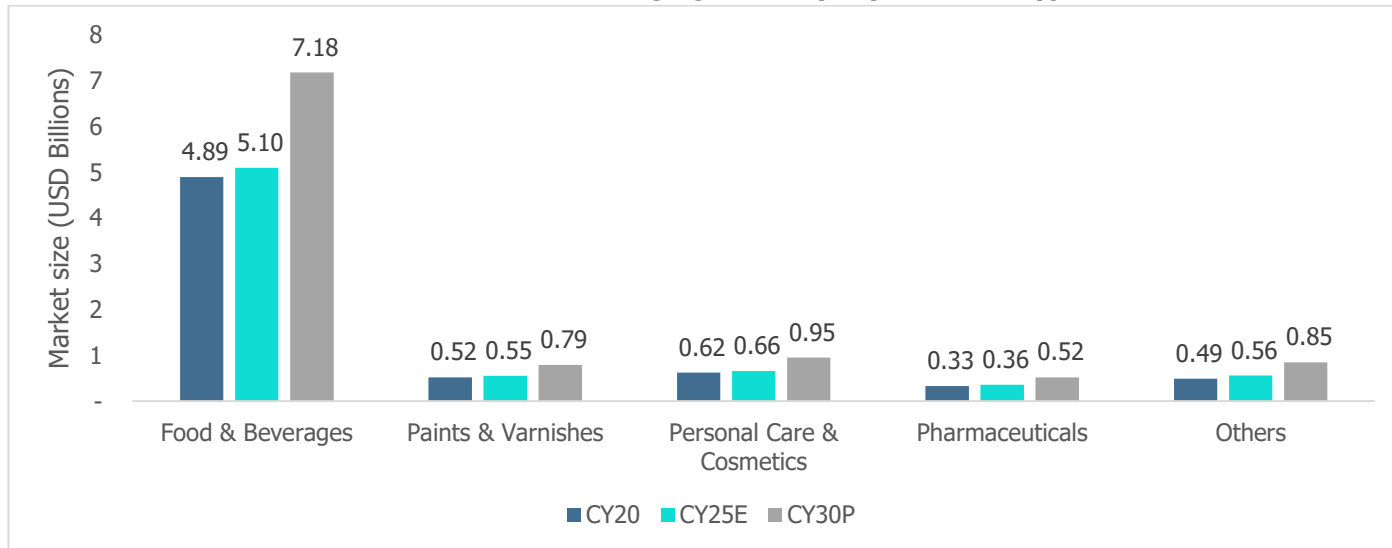
The Indian market for metal packaging is poised for steady growth over the coming decade. Cans represent the largest and fastest-growing segment, with market value projected to increase from approximately USD 4.56 billion (INR 392.48 billion) in CY25 to USD 6.44 billion (INR 561.29 billion) by CY30, driven primarily by demand in food canning, beverages, and aerosols. Caps and closures are expected to reach around USD 1.75 billion (INR 125.40 billion) by the end of CY30, driven by consistent demand in the FMCG and pharmaceutical sectors. The market for tins and containers is anticipated to grow to nearly USD 0.94 billion (INR 82.16 billion) by CY30, largely due to expansion in the paints and coatings sector. Industrial drums and barrels are forecast to reach USD 0.64 billion (INR 55.69 billion) by CY30, in line with growth in chemicals, lubricants, and construction chemicals. Improved metal recovery processes increased domestic manufacturing capacity, and the growing preference for sustainable packaging materials supports this long-term momentum.



8.3 Overview and Market Size of the Indian Metal Packaging Industry- by End User Type

The end-user base for metal packaging in India is quite varied, spanning both consumer and industrial sectors. The food and beverage industry stands out as the primary user, largely due to the need for extended shelf life and secure storage. Paints and varnishes also depend on metal tins and cans for their durability and protective qualities. Meanwhile, personal care and cosmetics are increasingly utilising metal aerosols and decorative tins, especially in premium segments. The pharmaceutical sector makes use of aluminium and tin for closures, caps, and certain blister packaging applications. Other industries, such as lubricants, chemicals, and confectionery, further contribute to the demand for metal containers and drums.

Chart 65: Market Size of the Indian Metal Packaging Industry- by End User Type



Source: Cervicorn Consulting, CareEdge Research, P denotes projected, E denotes estimated

By CY30, food and beverages are projected to represent the largest share of the market value, with metal packaging demand from this sector alone estimated to reach USD 7.18 billion (INR 625.47 billion). This growth will most likely be driven by rising consumption of processed foods, ready-to-drink products, and alcoholic beverages. Paints and varnishes are estimated to contribute around USD 0.55 billion (INR 47.49 billion) in CY25, bolstered by ongoing growth in housing and infrastructure development. The personal care, cosmetics, and pharmaceuticals sectors together form a promising high-value segment, estimated to be worth USD 1.37 billion (INR 119.17 billion) by CY25, fueled by increasing spending on lifestyle and healthcare. Overall, this expansion is supported by a rebound in industrial activity, a focus on recyclable materials from brands, and a trend towards premiumization in consumer goods.

8.4 Key Trends & Growth Drivers of the Indian Metal Packaging Industry

Key Trends in the Indian Metal Packaging Industry

Sustainability and ESG Commitments

Sustainability and ESG commitments among leading FMCG and beverage brands are increasingly favouring metal packaging, given its high recyclability and circular-use potential. Aluminium and steel cans can be recycled multiple times without loss of quality, helping brands reduce carbon footprints and meet long-term sustainability targets. Growing consumer preference for environmentally responsible packaging is further reinforcing the shift towards metal formats, particularly in beverages and packaged foods.

Localisation & Advanced Can Technology

The Indian metal packaging industry is benefiting from capacity additions by domestic and international players, reducing dependence on imports and improving supply reliability. At the same time, adoption of two-piece aluminium can technology is increasing, as it is lighter, more material-efficient and cost-effective. This is helping brands lower logistics costs while meeting sustainability and performance requirements.

Lightweighting making metal packaging more affordable and sustainable

Lightweighting makes metal packaging more affordable and sustainable by reducing material usage and transportation costs, while retaining its strength and barrier properties. This improves cost efficiency and lowers the environmental footprint, helping metal packaging compete more effectively with plastics and glass. As a result, brands can better manage costs and meet sustainability goals, encouraging wider adoption and supporting higher demand across food, beverages, aerosols, and agrochemicals in India.

Key Growth Drivers in the Indian Metal Packaging Industry

Expanding Beverage and FMCG Demand

India's fast-growing bottled beverage market, including carbonated soft drinks, energy drinks and canned juices, along with rising consumption of packaged foods, is driving higher demand for metal packaging. Aluminium and tinplate cans offer excellent barrier properties, long shelf life and product safety, making them well-suited for beverages and select food applications. As organised FMCG and beverage players expand their product portfolios and distribution reach, demand for metal cans and containers continues to rise.

Cost Efficiency and Circular Economy Impact

Metal packaging fits naturally into a circular economy, as aluminium and steel cans can be recycled repeatedly without losing quality. Lightweight packaging further improves efficiency by reducing metal usage while maintaining strength and durability. India already has a well-established scrap collection network, which helps manufacturers reduce dependence on virgin metal and manage costs more efficiently. By keeping materials in use and out of landfills, metal packaging supports sustainability goals and makes long-term economic sense for brands focused on both cost control and ESG commitments.

Growth of E-commerce and Organised Distribution

The growth of e-commerce and organised distribution in India is increasing the need for durable, leak-proof, and tamper-resistant packaging that can withstand long-distance transport and multiple handling points. Metal packaging, such as tinplate cans and aluminium containers, offers superior strength and shelf stability, reducing transit damage and spoilage. As online sales expand into Tier-2 and Tier-3 cities, this trend is supporting steady demand and higher realisations for Indian metal packaging manufacturers.

8.5 Key Players in the Indian Metal Packaging Industry

Company Name	Market Share %	Overview (Metal Packaging Industry)
Canpack Trends	6%-7%	Canpac Trends produces metal cans and decorative tin packaging solutions aimed at FMCG, confectionery, and premium product segments. It focuses on short-run and custom-designed packaging for branding and retail presentation purposes, including lithographed and embossed tin containers.
Tinplate Company of India Limited (TCIL)	6%-7%	TCIL is a manufacturer of tin mill products in India and a subsidiary of Tata Steel Limited. The company primarily produces electrolytic tinplate (ETP) and tin-free steel (TFS), which are key raw materials used in metal packaging. TCIL operates in the upstream segment, supplying these materials to can manufacturers and packaging converters rather than making finished containers. Its products are widely used in applications such as food cans, edible oil containers, paint cans, aerosol packaging, and battery shells, due to their strength, corrosion resistance, and recyclability.
Ball Corporation India	4%-5%	Ball Corporation India operates as part of Ball Corporation's global metal packaging business. It produces aluminium cans and aerosol containers, primarily catering to the beverage and personal care sectors. The company's focus lies on lightweight aluminium packaging designed for recyclability and reduced material use.
Hindustan Tin Works	0%-1%	Hindustan Tin Works is one of India's established manufacturers of tin cans and metal packaging products. The company supplies to key industries such as food, beverages, and paints. Its product range includes two-piece and three-piece cans, easy-open ends, and general line containers used for processed foods, dairy products, and industrial goods.
Bharat PET Limited*	0%-0.1%	Bharat PET Limited is an Indian packaging company that manufactures packaging solutions such as PET bottles & jars, preforms, multi-layer co-extruded bottles, caps & closures, and tin containers. The company primarily focuses on the Food and Beverage industry as a key growth sector, while also serving sectors such as agro-chemicals, pharmaceuticals, FMCG, and IMFL (liquor).

Source: Cervicorn Consulting, CareEdge Research, Company Websites

*Note: The above-mentioned market share, has been derived basis the consolidated revenue of Bharat PET Limited from tin sales, since March 1, 2025, and revenue generated by Bharat Product Limited, for 11MFY25. Bharat PET Limited, has acquired Plant & Machineries of Bharat Products Limited, effective from March 1, 2025.

8.6 Threats and Challenges for the Indian Metal Packaging Industry

High Raw Material Costs

The metal packaging industry is heavily dependent on raw materials such as tinplate, steel, and aluminium, which account for a major portion of production costs. Frequent fluctuations in global metal prices driven by energy costs, supply disruptions, and global demand directly affect profitability. Small and medium players find it difficult to absorb these cost variations without impacting product pricing.

Fragmented Market Structure

The Indian metal packaging sector remains fragmented, with a mix of large, organised manufacturers and several small-scale regional players. The unorganised segment often operates with lower-quality standards and limited technological capability, which affects the overall image and competitiveness of the industry.

High Energy Consumption

Metal packaging manufacturing processes, such as smelting, rolling, and coating, consume significant amounts of electricity and fuel. Rising energy costs, combined with the government's push toward green energy transition, can lead to operational cost escalation if energy efficiency measures are not implemented.

Import Dependence for Tinplate

India's domestic tinplate manufacturing capacity remains limited, leading to significant reliance on imports from countries like Indonesia, Malaysia and China. Any disruptions in global trade routes, imposition of anti-dumping duties, or currency fluctuations can adversely affect supply availability and cost stability.

Competition from Alternative Materials

Plastic, PET, and flexible packaging have gained popularity due to their cost-effectiveness, lightweight properties, and design flexibility. These alternatives are increasingly replacing metal containers in the food, beverage, and personal care segments, creating a long-term substitution threat for metal packaging players.

Slow Technological Innovation

Compared to developed markets, Indian players have been slow to adopt advanced technologies such as lightweighting, BPA-free coatings, improved corrosion resistance, and high-quality digital printing. This limits their ability to meet evolving consumer and regulatory requirements, especially from export markets.

9 Regulatory Environment in the Packaging Industry

9.1 Common Regulations and Standards that are Applicable in the Packaging Industry

- **Waste, Recycling, and Extended Producer Responsibility (EPR)**
 - EPR shifts end-of-life responsibilities to producers, importers, and brand owners.
 - It typically includes registration, data reporting (such as tonnage and material types), and payment of fees or participation in compliance schemes.
 - Many jurisdictions establish targets for recyclability, reuse, and labelling that influence design choices.
 - Focus on designing for material reduction and recyclability; implement packaging data capture and budget for EPR costs.
- **Food Contact Materials (FCM) and Consumer Safety**
 - Packaging that meets food must meet migration limits and be made from authorised substances.
 - Documented declarations of compliance and, when relevant, migration testing reports are required.
 - Inks, adhesives, and additives must be controlled and verified.
 - Collect supplier declarations, maintain testing reports, and ensure materials comply before market placement.
- **Chemical Regulation and Substances of Concern**
 - Inks, adhesives, plasticisers, and additives may be subject to restricted substance rules and the Substances of Very High Concern (SVHC) lists.
 - This may involve pre-market screening, substitution planning, and notifications if articles contain certain substances.
 - Keep supplier declarations updated and develop a substitution or mitigation plan.
- **Transport of Dangerous Goods**
 - Transport rules are based on UN Model Regulations and apply to ADR (road), IMDG (sea), and IATA DGR (air).
 - Packaging for hazardous goods often requires UN testing, specific markings, and precise documentation.
 - Use UN-tested packaging and comply with modal requirements for chemicals, batteries, aerosols, etc.
- **National and Regional Design & Labelling Requirements**
 - Markets may impose thresholds for producer obligations, deposit-return schemes, and limitations on packaging elements.
 - Specific labelling, markings, or producer identifiers may be required.
 - Map requirements by market and avoid a one-size-fits-all packaging approach unless it meets the strictest jurisdictional standards.
- **Voluntary Standards and Certification**
 - Retailers and large buyers often require third-party certification or conformity to recognised standards.
 - These typically encompass areas such as food safety, hygiene, traceability, and management systems.
 - Plan for audits and maintain documented systems (e.g., quality, hygiene, traceability) to fulfil commercial entry requirements.
- **Environmental Standards and Eco-Design**
 - Environmental and lifecycle standards help structure eco-design and establish measurable KPIs (e.g., material intensity, recyclability rates).
 - Standardise continuous improvement and reporting.
Use standards to set targets, measure improvements, and demonstrate performance to customers and regulators.

- **Compostability and Biodegradability Claims**
 - Claims of compostability or biodegradability must be supported by accredited third-party testing and appropriate certification.
 - Clearly distinguish between industrial and home composting; local waste infrastructure must be compatible.
 - Avoid unverified claims; secure certification that is appropriate for the relevant waste streams.
- **Performance, Transport, and Sector-Specific Testing**
 - Transit simulation, drop, vibration, compression, and environmental tests should mirror real distribution risks and product fragility.
 - Certain sectors (e.g., medical, sterile products) require specialised validation standards.
 - Choose tests that reflect actual distribution challenges to minimise damage and returns.
- **Labelling, Traceability, and Recycling Marks**
 - Proper usage of recycling codes, reuse marks, and producer identifiers is becoming increasingly prescriptive.
 - Laws and buyers may require machine-readable or more detailed labelling to support sorting and reuse.
 - Keep artwork and labelling templates current and ensure compliance with local marking rules.

9.2 Comparison- India, European Union and USA

Aspect	India	European Union (EU)	United States (USA)
Current recycling rate (plastic/plastic packaging)	India currently recycles approximately 13% of its plastic waste, according to the official national inventory from the Central Pollution Control Board (CPCB) for FY21. This figure highlights the significant challenges India faces in managing plastic waste effectively. Specifically for PET bottles, the output recycling rate is 64%.	In contrast, the European Union has made considerable strides, with about 41% of plastic packaging waste being recycled, as reported in the aggregated figures for 2022 by the European Commission. This demonstrates a more developed infrastructure and commitment to recycling across member states.	The United States lags, with an estimated recycling rate of just 8.7% for plastics as per the Environmental Protection Agency (EPA) in 2018.
Main national/regional regulation(s)	In India, the principal legislation regulating plastic waste is the Plastic Waste Management Rules, originally established in 2016 and amended in FY22, FY24 and FY25. A notable 2025 update mandates traceability and packaging information on products (QR/barcodes) to	The European Union employs a comprehensive approach with its Packaging and Packaging Waste Directive (PPWD) alongside the new Packaging and Packaging Waste Regulation (PPWR). Together, these regulations set binding recycling and reduction targets, along with obligations for	In the United States, there is no overarching federal legislation specifically addressing packaging and EPR. Instead, the EPA promotes a national strategy aimed at reducing plastic pollution through a lifecycle approach. However, many states have developed their own regulations,

	<p>improve accountability and recycling tracking. This framework governs the production, use, collection, and recycling of plastics and includes Extended Producer Responsibility (EPR) in Schedule II, which mandates that producers take responsibility for the lifecycle of their products.</p>	<p>recyclability and design-for-recycling, ensuring that member states adhere to shared standards.</p>	<p>including deposit schemes and individual EPR proposals, leading to a fragmented regulatory landscape.</p>
<p>Practical guidelines/implementation tools</p>	<p>India's CPCB provides EPR Guidelines alongside a centralised EPR portal, which facilitates registration, reporting, and target tracking for producers, importers, and brand owners. The system sets annual recycling and reuse targets, helping to create accountability within the industry.</p>	<p>The European Union has established EU-level binding targets and measures that include recyclability rules, design requirements, and reuse targets, as well as limits on items identified as problematic. Member states are responsible for implementing their own collection and recycling systems to meet these EU directives, contributing to a coordinated effort in waste management.</p>	<p>Conversely, the EPA in the U.S. offers guidance and has outlined a National Strategy for 2024, but implementation varies widely across states due to the existence of a patchwork of state laws and voluntary industry pacts. Many initiatives remain either voluntary or state-driven, limiting the potential for a cohesive national effort in addressing plastic pollution.</p>

9.3 Key Regulations in India for the Packaging Industry

9.3.1 Plastic Waste Management Rules



The Plastic Waste Management Rules of 2016, along with subsequent amendments in 2018, 2021, 2022 and 2024 form the primary legal framework for the management of plastic packaging and waste in India. These regulations encompass the entire life cycle of plastics, from production and consumption to collection, recycling, and final disposal. Enforcement falls under the Ministry of Environment, Forest and Climate Change (MoEFCC) and the Central Pollution Control Board (CPCB).

The 2024 amendment further strengthens the framework by expanding the definitions of producers, importers, and sellers, mandating CPCB certification and labelling for biodegradable and compostable plastics and enhancing reporting and registration requirements. It also empowers local bodies to assess plastic waste generation, enforce bans on prohibited single-use plastics, and ensure that manufacturers sell raw materials only to registered entities, improving traceability across the value chain.

The rules obligate producers, importers, and brand owners to take responsibility for the waste generated by their products. This includes establishing or supporting collection and recycling systems under Extended Producer Responsibility (EPR). Since July 2022, certain single-use plastic items, such as straws, plates, and polystyrene products, have been banned nationwide. The 2022 amendment also introduced a phased increase in the minimum thickness of plastic carry bags from 50 microns to 75 microns (effective September 2021) and further to 120 microns from December 2022, aimed at promoting reuse and reducing littering.

Manufacturers are required to print their registration numbers and relevant details on packaging to ensure accountability. Local authorities are tasked with organising collection and segregation, often collaborating with Producer Responsibility Organisations (PROs). Additionally, the government acknowledges the vital role of India's informal waste sector, which significantly contributes to the collection and recycling of plastics. There is a growing effort to integrate these informal workers into formal systems to enhance traceability and compliance in recycling.

In the short to medium term, these regulations are expected to increase compliance costs and encourage companies to adopt recyclable, mono-material designs, such as PET or HDPE. We can also anticipate new investments in waste segregation, digital traceability, and recycling infrastructure. While smaller firms may face challenges in meeting compliance requirements, the rules are helping to foster a stronger circular economy with enhanced accountability and improved waste recovery.

9.3.2 Other Indian Regulations and Standards Applicable in the Packaging Industry

- **Food Safety and Standards (Packaging & Labelling) Regulations (FSSAI)**

These regulations focus on ensuring that food packaging materials are safe and hygienic. All food packaging must be made from food-grade materials that do not interact with or contaminate their contents. For metal packaging, such as tin or aluminium cans, specific requirements for sealing, quality control, and cleanliness are enforced. FSSAI mandates testing of these materials in accredited laboratories to ensure their safety before use, safeguarding consumers from harmful substances that could leach into food.

- **Legal Metrology (Packaged Commodities) Rules, 2011**

These rules aim to protect consumers by ensuring that all packaged products carry clear and accurate information. Each package must display essential details such as weight, maximum retail price (MRP), manufacturing date, and manufacturer information. These regulations ensure transparency in the marketplace by preventing misleading packaging or hidden costs, with penalties for non-compliance.

- **Drugs and Cosmetics Rules**

These rules govern the pharmaceutical and cosmetics sectors, ensuring that packaging is safe and of high quality. Packaging for medicines must be tamper-proof, safeguarding the product from contamination and damage. Labels are required to include vital details such as manufacturing dates, batch numbers, expiry dates, and storage conditions. These

regulations are crucial for maintaining the integrity of medical products, ensuring patient safety and trust in the healthcare system.

- **Bureau of Indian Standards (BIS)**

BIS sets quality and safety standards for packaging materials across various industries. These standards outline how packaging should be designed, tested, and utilised to maintain product quality. They cover materials such as plastic, metal, glass, and paper. For example, BIS has specific standards for food cans, drums, and industrial containers to ensure their durability and safety for intended uses. Many export-oriented companies also comply with BIS norms to meet both Indian and international quality standards.

9.3.3 Central Insecticides Board & Registration Committee - Agrochemical Packaging Rules

The CIBRC, under the Department of Agriculture and Farmers Welfare, regulates how agrochemicals and pesticides are packaged, labelled, transported, and disposed of in India. These requirements are part of the Insecticides Rules, 1971, and are aimed at ensuring safety for users, the public, and the environment.

Packaging for agrochemicals must be strong, tamper-evident, and compatible with the chemical inside. Common materials such as HDPE, PET, and metal are allowed only after product compatibility testing. Labelling must clearly state the product name, toxicity class, usage instructions, safety warnings, and disposal methods. Any damaged or leaking container must be withdrawn from the market immediately.

Used containers cannot be reused for household or food-related purposes. They must be triple-rinsed and returned through designated collection points for safe disposal. Only authorised recyclers are allowed to handle such waste, and even then, the recycled material may only be used for non-food industrial purposes.

To align with national circularity goals, agrochemical producers are also expected to follow EPR principles, setting up container take-back and safe disposal systems, especially for HDPE drums and larger packs. The sector is gradually adopting QR-coded labels for enhanced traceability and exploring bulk refill options to reduce small single-use packaging. However, any change to the material or structure of containers must first be tested for compatibility and then approved by the CIBRC, which can make transitions slower.

In the short to medium term, agrochemical manufacturers are likely to invest in stronger collection networks and cleaner packaging systems. This will improve safety in rural waste management and reduce the chances of chemical contamination from discarded containers. Coordinating EPR mechanisms between MoEFCC and CIBRC could further streamline compliance and reporting in the coming years.

9.3.4 Extended Producer Responsibility (EPR)

- **Guidelines (Including both plastic as well as metal)**

Under India's Plastic Waste Management Rules, EPR has become a fundamental compliance requirement for all producers, importers, and brand owners using packaging. The EPR Guidelines (Schedule II) establish year-on-year obligations for the collection, recycling, and reuse of packaging waste. These guidelines apply to both plastic and metal packaging, though most targets and reporting currently focus on plastics.

For plastic packaging, categories are defined based on the material type: rigid, flexible, and multilayered. In the case of metal packaging, such as aluminium or tin, the emphasis lies on promoting recyclability and recovery through authorised recyclers and encouraging the use of recycled metal wherever feasible. Metal packaging already enjoys high recovery rates in India due to its scrap value and established recycling networks, shifting the focus towards traceability and extended collection mechanisms rather than solely volume-based targets.

- **EPR Targets (Rigid vs Flexible Plastics)**

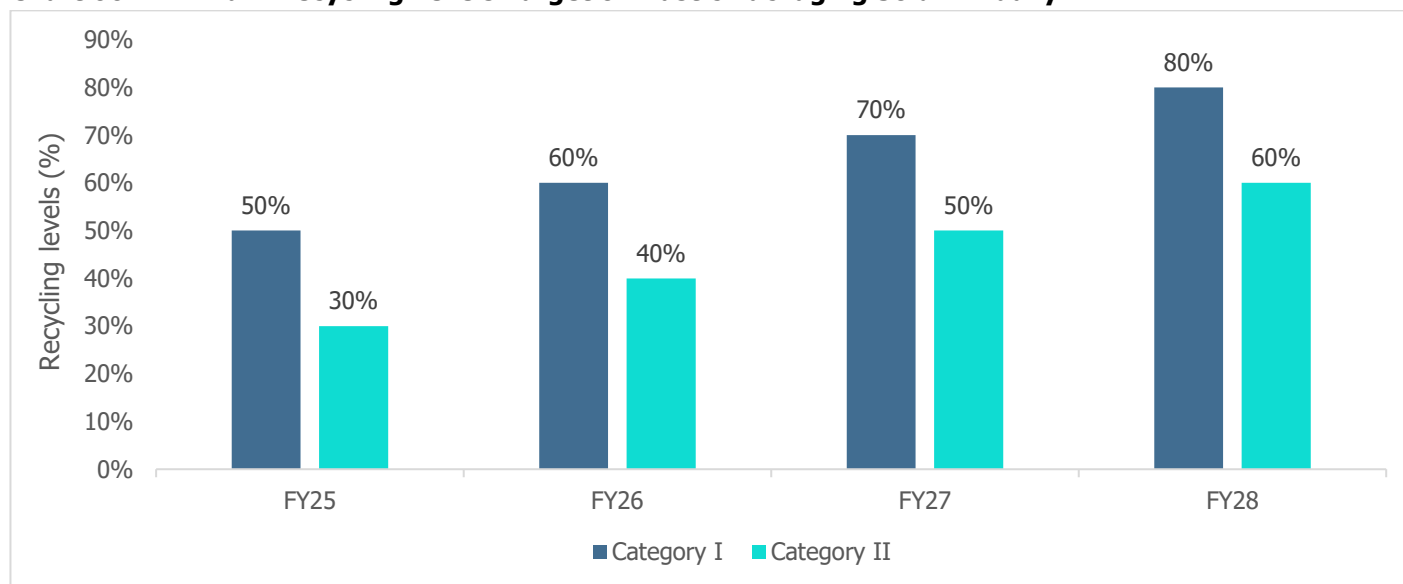
-Rigid Plastics (Category I): This category encompasses items like bottles, drums, and containers. These items are easier to collect and recycle, resulting in higher targets assigned for both reuse and recycled content. From FY26 onwards, large rigid containers (over 5 litres) are expected to achieve reuse rates starting at approximately 70%,

escalating to 85% by FY29. Meanwhile, smaller rigid packs will gradually reach a reuse rate of 25%. Producers are also obligated to incorporate a minimum share of recycled plastic in new packaging each year.

-Flexible Plastics (Category II & III): This includes films, sachets, and multilayer laminates used for snacks and personal care products. These materials are more challenging to recycle mechanically due to their composition of different materials in thin layers. Consequently, initial EPR targets are lower, typically ranging from 30% to 50% in the early years, progressing to 60% to 80% by FY28, depending on the product family. The aim is to gradually transition towards mono-material designs that are easier to process. In summary, rigid plastics are expected to achieve stricter targets sooner due to their recyclability, whereas flexible plastics will experience a slower transition as recycling technology advances.

EPR obligations vary depending on the nature of packaging, reflecting the ease or difficulty of recycling

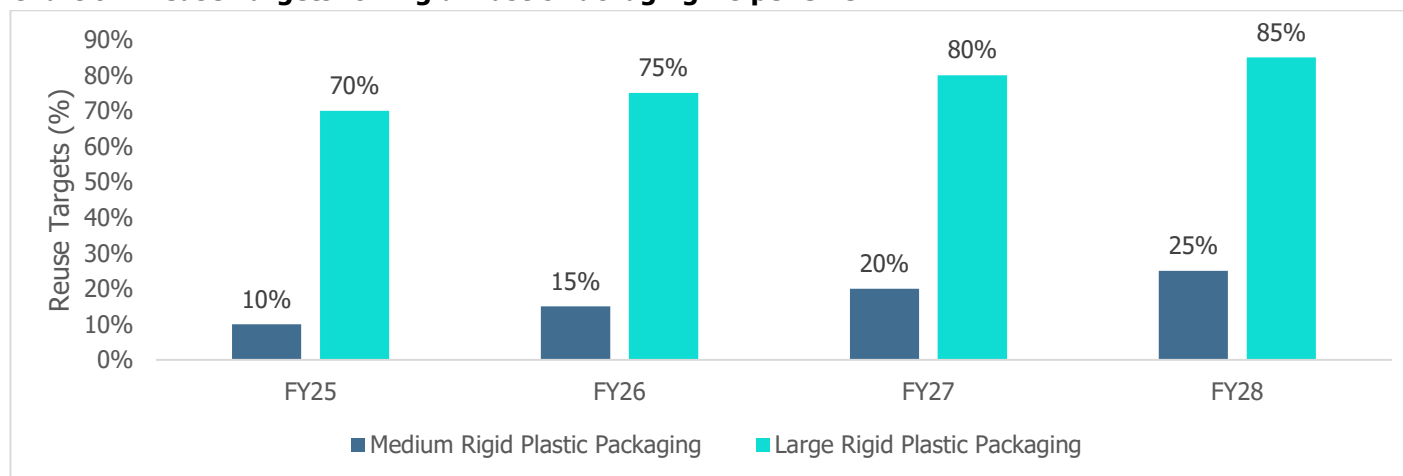
Chart 66: Minimum Recycling Levels Target of Plastic Packaging Sold Annually



Source: PIB, CareEdge Research

There is a trend of progressive increase in minimum recycling levels for three plastic packaging categories from FY25 to FY28 onwards. Category I leads with the highest targets, while Categories II follow similar but slightly lower trajectories.

Chart 67: Reuse Targets for Rigid Plastic Packaging-As per Size



Source: PIB, CareEdge Research

The chart shows the increasing reuse targets for medium and large rigid plastic packaging from FY25 to FY29. Large packaging consistently leads with significantly higher targets, reflecting its greater potential for reuse.

- **Impact**

In the short to medium term, the implementation of EPR will drive significant changes in packaging design and material use. Companies are increasingly moving towards simpler, mono-material formats such as single-layer polyethylene films, recyclable PET, and aluminium. There is also a growing emphasis on refillable or returnable systems for bulk and industrial packaging. However, these changes may lead to higher short-term costs. Meeting EPR targets necessitates new collection networks, certified recyclers, and increased usage of recycled resins, all of which can temporarily elevate packaging and compliance costs. Restructuring of supply chains will be necessary to ensure traceability and accurate reporting.

On the upside, this transformation presents new opportunities for innovation in recycling technologies, chemical recycling methods, and the development of new packaging materials designed for circularity. In the medium term, early adopters can expect to benefit from lower long-term compliance costs and enhanced brand positioning as sustainability expectations grow in importance across markets.

- **Actions and Commitments by End-Use Segments**

- FMCG and Consumer Goods:**

Manufacturers are rethinking packaging to enhance recyclability. This includes replacing multi-layer laminates with mono-material designs and increasing post-consumer recycled (PCR) content in bottles. For instance, advancing recyclable or recycle-ready formats to meet national extended producer responsibility (EPR) requirements, raising the PCR content in certain PET bottles. Many companies are investing in or collaborating on collection and waste management initiatives to promote circularity in plastic packaging. Many global FMCG brands have made commitments to improve packaging collection and redesign. Additionally, trials for refill and reuse options are being conducted with high-volume SKUs to diminish reliance on single-use plastics, as documented through industry programs and reuse studies in India.

Pharmaceuticals: The primary focus in pharmaceuticals remains on product safety, tamper evidence, and regulatory compliance. Packaging choices emphasise materials that maintain sterility while minimising unnecessary layers. Several leading pharmaceutical companies have outlined sustainability plans that incorporate packaging optimisation and the use of recyclable secondary cartons. Many companies incorporate circular economy principles within their broader sustainability initiatives. Examples include transitioning to recyclable outer cartons, minimising package weight where feasible, and standardising inner trays to enhance recyclability while adhering to pharmacopeial standards.

Chemicals, Oils, and Lubricants: Companies are utilising durable rigid containers such as HDPE drums, jerrycans, and metal barrels that support reuse, reconditioning, and return programs. Suppliers also provide large-volume intermediate bulk containers (IBCs) and refill solutions for industrial clients. Few companies document various packaging formats (drums, pails, IBCs) and bulk solutions to facilitate reuse and streamline handling. Guidance from the industry and circular economy studies indicates a growing interest in returnable transport packaging, as well as the reconditioning of metal drums and IBCs to achieve EPR and waste reduction goals. Re-refining and used-oil collection initiatives are also emerging practices within the sector.






Alcoholic Beverages: Producers are enhancing label and closure designs to improve recyclability and are exploring deposit-return models for bottles and PET packs. Major beverage companies, alongside several state and regional schemes, are piloting deposit-return and QR-coded collection systems. India has begun to see initial experiments and regulatory dialogues regarding such models, with international practices on deposit systems documented in global reviews and pilot schemes announced in various Indian states.

Agrochemical Sector: In the agrochemical sector, packaging must ensure chemical compatibility and user safety, which leads to cautious material changes. Common responses to EPR include tamper-evident and child-resistant closures,

clearer labeling, and enhanced disposal instructions for safety. CropLife India and other sector guidelines outline container management and safe disposal strategies for empty pesticide containers.

Companies and industry organisations are establishing or participating in take-back schemes, promoting bulk and refill options where safe, and piloting traceability measures, such as QR codes, to elevate user awareness and reduce counterfeit or unsafe reuse.

REUSE TARGET OF DIFFERENT COMPANIES

Company	Reusable / Recyclable / Compostable	Virgin Plastic Reduction	Post Consumer Recycled (PCR) Content	Reuse / Refill rate
 Hindustan Unilever Limited	100% recyclable/reusable (2030 rigids, 2035 flexibles)	30% by 2026, 40% by 2028	25% PCR by 2025	Collect >sell by 2030
 marico	100% recyclable by 2030 (95.1% achieved FY25)	517.5 tonnes eliminated: PVC < 0.05%	30% r-PCR by 2030	No official target
 ITC Limited	Reduced plastic packaging to 30%, with paper/paperboard-based packaging accounting for 69% of ITC’s FMCG business	30% plastic-intensity reduction in some units	20% PCR in select products	No formal target
 COLGATE-PALMOLIVE	100% recyclable/reusable/compostable by 2025	Reduce virgin plastic by 33%	80% of packaging is recyclable; PCR not specified	Not published
 Dabur	100% recyclable/reusable/compostable by 2030	20% reduction in packaging per unit compared to FY18	10% PCR by FY25	Not published

Source: CareEdge Research, Company Websites

10 Key Threats and Challenges

10.1 Indian Rigid Plastic Packaging Industry

1. Environmental and Sustainability Concerns

The rigid plastic packaging industry is facing increasing pressure to address its environmental impact as global awareness of plastic waste and pollution continues to rise. Regulatory bodies, consumers, and environmental organisations are demanding a shift toward sustainable packaging solutions. Leading global brands have already started transitioning by pledging to increase the use of recycled plastic.

While rigid plastics generally have a higher recyclability rate than flexible plastics, enabling better waste recovery, the industry must still invest in recycling infrastructure, sustainable material innovation, and responsible waste-management practices to remain compliant and competitive. Innovations in compostable or bio-based polymers are gaining traction, posing both opportunities and challenges for traditional rigid plastic producers.

2. Changing Consumer Preferences

Consumer preferences are shifting decisively toward eco-friendly, sustainable, and innovative packaging. This growing environmental consciousness is visible in the rise of zero-waste stores, refill stations, and packaging-free products. Brands that fail to align with these preferences risk losing consumer trust, brand loyalty, and market relevance. For rigid plastic packaging manufacturers, this trend necessitates continuous innovation to offer environmentally responsible solutions while maintaining cost-effectiveness, quality, and product performance.

3. High Entry Barriers

The rigid plastic packaging industry has significant entry barriers, which protect established players but can limit new competition. The sector requires substantial upfront investment in advanced machinery and moulding technologies such as Extrusion Blow Moulding (EBM), Injection Blow Moulding (IBM), Injection Moulding (IM), and Injection Stretch Blow Moulding (ISBM). These processes demand specialised technical expertise, skilled labour, and stringent quality control to ensure precision in manufacturing and compliance with client specifications, particularly for sensitive sectors like food, beverage, and pharmaceuticals.

4. Regulatory Pressure

As awareness of the environmental impact of plastics increases, governments across the world are tightening regulations on plastic usage and packaging waste. In India, measures such as the Plastic Waste Management Rules and Extended Producer Responsibility (EPR) obligations require producers to integrate recycled content and ensure that packaging is recyclable or reusable. While these initiatives promote sustainability, they increase compliance costs and often require investments in redesigning packaging formats, upgrading production facilities, and managing waste-collection systems. Inconsistent regulations across states and evolving global standards further add to operational complexity for manufacturers serving multiple geographies.

5. Dependence on Petrochemicals

The industry is heavily reliant on petrochemical-based raw materials, including Polyethylene Terephthalate (PET), High-Density Polyethylene (HDPE), Polypropylene (PP), and Polyvinyl Chloride (PVC). These resins account for nearly 60–70% of the total production cost for most rigid plastic packaging manufacturers. Because these polymers are derived from petroleum, their prices are closely linked to global crude oil and natural gas markets. Volatility in crude prices, driven by geopolitical conflicts, supply-chain disruptions, or shifts in refining capacity, can significantly raise resin costs. Many manufacturers operate under fixed-price supply contracts with key FMCG and pharmaceutical clients, limiting their ability to pass on cost increases, which in turn pressures profit margins.

6. Economic Cyclicity

The demand for rigid plastic packaging is closely tied to consumption trends in industries such as FMCG, beverages, pharmaceuticals, automotive, and personal care. A slowdown in the broader economy or in these end-use sectors can directly reduce order volumes and revenue for packaging manufacturers. Additionally, currency fluctuations and inflationary pressures can affect input costs and weaken customer demand.

10.2 Indian Metal Packaging Industry

1-Fluctuating Raw Material Prices

The industry is heavily dependent on materials like aluminium, tinplate, and steel, whose prices often fluctuate due to global demand-supply shifts, energy costs, and currency movements. Sudden spikes in these input costs can squeeze margins and strain working capital, especially for smaller manufacturers that may not have the financial strength to hedge or absorb these increases.

2- Competition from Alternative Packaging

Metal packaging is facing stiff competition from plastics, paperboard, and flexible packaging that often offer similar performance at a lower cost or with more design flexibility. The shift by beverage, food, and FMCG brands to PET bottles, Tetra Pak cartons, and pouches has been eroding the demand for traditional metal cans and containers. Staying competitive requires continued investment in innovation and recycling initiatives, which can be capital-intensive.

3- Environmental and Sustainability Pressures

Although metals like aluminium and steel are highly recyclable, the lack of efficient recycling infrastructure, waste segregation, and collection networks in India limits their circular use. At the same time, primary metal production remains energy-intensive and draws regulatory attention for its carbon footprint. Compliance with evolving environmental regulations, including Extended Producer Responsibility norms and requirements for higher recycled content, adds to operational costs.

4- Infrastructure and Supply-Chain Constraints

Metal packaging products are often bulky and need reliable logistics and warehousing support. However, inconsistent road quality, higher last-mile freight charges, and insufficient facilities in many tier-2 and tier-3 cities increase costs and lead times. Import dependence for certain raw materials also makes the industry vulnerable to port delays and customs bottlenecks, which can disrupt production schedules.

5- Regulatory and Compliance Risks

The sector is governed by strict quality, safety, and environmental standards, especially for food-grade and pharmaceutical packaging. Any sudden changes in duties on imported raw materials, new levies, or additional compliance requirements can affect costs and require additional investments. Non-compliance can lead to penalties or loss of business with large customers.

11 Competitive Landscape

Bharat PET Limited is an Indian packaging company that manufactures packaging solutions such as PET bottles & jars, preforms, multi-layer co-extruded bottles, caps & closures, and tin containers. The company primarily focuses on the Agrochemical industry as a key growth sector, having around 11% market share in Indian agrochemical packaging business. They also serve sectors such as food and beverages, pharmaceuticals, FMCG, and IMFL (liquor). It evolved from its origins in 1998 (starting with rigid plastic packaging products) into a technology-driven packaging firm with state-of-the-art production capabilities, including injection stretch blow molding, Husky machine, extrusion blow moulding machine and an in-house tool room and quality laboratories. The company operates four manufacturing units located in Sonipat, Gujarat, Jammu, and Delhi, with its head office in Delhi and multiple godowns supporting its distribution network.

More than 10 agrochemical companies are located around Sonipat, Haryana. Subsequently, the legacy PET and multi-layer Co-Ex lines from Delhi were shifted to their Sonipat Manufacturing Facility on September 19, 2016, in addition to the installation of new-generation machinery at their Sonipat Manufacturing Facility, to capitalise on the geographical proximity to agro-chemical manufacturers. Company's Manufacturing Facilities are strategically located, where most of their key customers are located, enabling logistical efficiency. The geographic distribution of their Manufacturing Facilities provides logistical benefits, including shorter lead times and improved access to key customer locations, helping them in serving their customers across this region. The company has been serving some of its customer since last 15-20 years.

Bharat PET Limited maintains a diversified SKU portfolio across multiple container formats and sizes. Company production records show containers ranging from approximately 10 ml to 8 litres, and the SKU set has been expanded on a year-on-year basis to address customer requests, new product introductions and evolve technical and regulatory requirements.

The Company operates end-to-end engineering capabilities, including in-house tooling, mould design, rapid prototyping and advanced tooling platforms, which support customised neck sizes and multi-layer constructions. The Company has delivered projects across multi-layer Co-Ex bottle commercialisation, moisture-protective bulk containers and anti-counterfeit closure systems, showcasing its end-to-end engineering, rapid prototyping and advanced tooling capabilities that enable fast, customised packaging rollouts. These capabilities permit iterative tooling development and help shorten engineering lead times for new packaging formats.

Operational initiatives such as value engineering and lightweight PET conversion programmes have contributed to reductions in material use and logistics costs, improved dimensional consistency and manufacturing yield, and enhanced shelf presentation through higher clarity and ergonomic designs. The Company's packaging formats are engineered for integration with high-speed automated filling and packaging lines, and the Company provides early-stage engineering and co-development support to facilitate timely scale-up and standardisation of pack formats for production.

11.1 Operational Benchmarking

11.1.1 Key Players and Manufacturing Capabilities

The Indian packaging industry is highly fragmented, with both domestic and international companies operating in the market. Indian players such as Bharat PET Limited, Time Technoplast Limited, Shaily Engineering Limited, SSF Plastics India Limited, Manjushree Technopack Limited, and Mold-Tek Packaging Limited operate alongside global companies like Thai Plaspac Packaging and ALPLA India. Large players, supported by their scale, experience, and widespread manufacturing facilities, play an important role in driving the industry's growth. Their strong production networks help reduce costs, enable high-volume manufacturing, and allow them to meet the changing needs of customers across different industries. Bharat PET Limited operates four manufacturing plants across India. The company has an annual production capacity of about 30,000 metric tonnes and an injection moulding capacity of 27.8 million units.

Name	Inception	No. of Plants	Plant Location
Bharat PET Limited	1998	4	Sonipat (Haryana), Nangloi (Delhi), Samba (J&K), Ankleshwar (Gujarat)
SSF Plastics India Limited	2006	15	Daman (5); Hosur (Tamil Nadu); Baddi (Himachal Pradesh) (5); Dehradun (Uttarakhand) (2); Pardi; Hyderabad
Manjushree Technopack Limited	1987	23	Amritsar (Punjab); Bangalore (Karnataka); Baddi (Himachal Pradesh); Guwahati (Assam); Jalgaon (Maharashtra); Kanpur (Uttar Pradesh); Manesar (Haryana); Nandyal (Andhra Pradesh); Pantnagar (Uttarakhand); Dadra; Vizag (Andhra Pradesh); others
Alpla India Private Limited	2006	9	Himachal Pradesh; Uttarakhand; Telangana; Tamil Nadu; Dadra Nagar Haveli; Assam
Mold-Tek Packaging Limited	1986	12	Telangana (4), Dadra & Nagar Haveli and Daman & Diu (1), Maharashtra (1), Karnataka (1), Andhra Pradesh (1), Uttar Pradesh (2), Haryana (1), Tamil Nadu (1), and West Bengal.
Chemco Plastic Industries Private Limited	1996	7	Silvassa; Vadodara (Gujarat); Halol (Gujarat); Sanand (Gujarat); Daman; Mumbai (2)
Thai Plaspac Packaging India Private Limited	2018	5	Haridwar (Uttarakhand) (2); Dadra (2); Umbergaon
National Polyplast (India) Private Limited	1992	7	Faridabad (Haryana); Hasur (Maharashtra) (2); Pondicherry; Chennai; Himachal Pradesh; Tamil Nadu
Weener Empire Plastics Limited	1960	7	NA
SNJ Synthetics Limited	1996	2	Ahmedabad (Gujarat); Hyderabad (Telangana)
Secure Industries Private Limited	1999	3	Telangana (2); Haryana
Alpha Packaging Private Limited	1980	7	Howrah (West Bengal), Bangalore (Karnataka), Guwahati (Assam), Killa Pardi, (Gujarat), Solan (Himachal Pradesh), Haridwar, (Uttarakhand) (2)
Hindustan Tin Works Limited	1958	2	Haryana (2)
Time Technoplast Limited	1992	20	Daman, Silvassa, Mahad, Talasari, Panoli, Ahmedabad, Jambusar, Bhuj, Pen, Ratlam, Ankleshwar, Gummidipoondi, Hosur, Hyderabad, Bangalore, Hubli, Vizag, Baddi, Pantnagar, Kolkata
			Foreign
			Bahrain (Middle East), Egypt, Indonesia, Malaysia, Sharjah (U.A.E.), Taiwan, Thailand, Vietnam, Saudi Arabia, United States of America
Shaily Engineering Limited	1987	6	Gujrat (6)

Source: Annual Report, Company Websites and CareEdge Research

Name	Manufacturing Expense as % of Revenue FY23	Manufacturing Expense as % of Revenue FY24	Manufacturing Expense as % of Revenue FY25
Bharat PET Limited	54.70%	56.20%	57.90%
SSF Plastics India Limited	69.00%	58.40%	57.60%
Manjushree Technopack Limited	69.0%*	58.10%	57.80%
Alpla India Private Limited	74.30%	62.50%	NA
Mold-Tek Packaging Limited	71.6%*	56.70%	56.20%
Chemco Plastic Industries Private Limited	70.90%	58.50%	NA
Thai Plaspac Packaging India Private Limited	80.00%	64.50%	65.70%
National Polyplast (India) Private Limited	83.20%	71.30%	NA
Weener Empire Plastics Limited	77.70%	55.60%	NA
SNJ Synthetics Limited	85.90%	76.60%	NA
Secure Industries Private Limited	63.70%	63.00%	61.50%
Alpha Packaging Private Limited	74.10%	55.90%	NA
Hindustan Tin Works Limited	NA	71.90%	74.40%
Time Technoplast Limited	NA	71.90%	71.10%
Shaily Engineering Limited	NA	56.90%	52.70%

Source: Annual Report, Company Websites and CareEdge Research, "*" - manufacturing capacity for India
 Manufacturing capacity (% of Revenue) = (Cost of Goods Sold/ Total Revenue) *100

11.1.2 Key Players and Their Geographical Manufacturing Presence in India

Players	North	South	West	East
Bharat PET Limited	2+	-	1	-
SSF Plastics India Limited	2+	1	2+	-
Manjushree Technopack Limited	1	2+	1	1
Alpla India Private Limited	1	1	1	1
Mold-Tek Packaging Limited	1	2+	1	-
Chemco Plastic Industries Private Limited	-	-	2+	-
Thai Plaspac Packaging India Private Limited	1	-	1	-
National Polyplast (India) Private Limited	1	1	-	-
Weener Empire Plastics Limited	NA	NA	NA	NA
SNJ Synthetics Limited	-	-	1	1
Secure Industries Private Limited	1	1	-	-
Alpha Packaging Private Limited	1	1	1	1
Hindustan Tin Works Limited	1	-	-	-
Time Technoplast Limited	1	2+	2+	1
Shaily Engineering Limited	-	-	2+	--

Source: Annual Report, Company Websites and CareEdge Research

Note: 1= up to two facilities (one box), 2+ = more than two facilities (two boxes), - = No facility, NA = Data not available/Not Applicable.

11.1.3 Key Players Product Portfolio by Business Unit

The packaging industry is divided by product type and materials such as plastic, paper, metal, and glass. Plastic packaging (PE, PP, PET, PS) is classified into flexible and rigid formats, while metal packaging includes cans and foils made from aluminum, steel, and tin. Paper packaging covers corrugated boxes and paper bags.

In India, the industry is highly fragmented, with companies operating across segments like bottles & jars, containers, preforms, caps & closures, and pumps & dispensers, serving food & beverages, personal care, and pharmaceuticals. There is consistent demand for Pet Bottle & Jars, Multi-Layer Co-Ex Bottles & Jars, and Preforms, which are catered to

by Bharat PET Limited. It has enabled the company to provide a holistic product portfolio to their customers and drive their market share.

Key Players	Bottles and Jars	Multi-Layer Co-Ex Bottles	Caps and Closures	Tin Containers	PET Preforms	Others
Bharat PET Limited	✓	✓	✓	✓	✓	Technical Parts & Industrial Containers
SSF Plastics India Limited*	✓	x	✓	x	x	Electronics – casings and housings, Pumps & Dispensers, Recycling
Manjushree Technopack Limited	✓	✓	✓	x	✓	Pumps & Dispensers, Recycling
Alpa India Private Limited	✓	✓	✓	x	✓	Pumps & Dispensers
Mold-Tek Packaging Limited	✓	x	✓	x	x	Paint pails, lubricant packs
Chemco Plastic Industries Private Limited	✓	✓	✓	x	✓	Net, loofah, technical textile, bubble wraps, shrink films, Recycling
Thai Plaspac Packaging India Private Limited	✓	x	✓	x	✓	–
National Polyplast (India) Private Limited	x	x	✓	x	✓	Crates, display racks, recycling
Weener Empire Plastics Limited	✓	x	✓	x	x	Roll-on packaging Dropper bottles
SNJ Synthetics Limited	✓	x	x	x	✓	–
Secure Industries Private Limited	x	x	✓	x	x	–
Alpha Packaging Private Limited	✓	x	✓	x	✓	–
Hindustan Tin Works Limited	x	x	✓	✓	x	–
Time Technoplast Limited	x	x	x	x	x	Jerry cans / polycans, Intermediate Bulk Containers (IBC), Plastic pails and containers Material handling products
Shaily Engineering Limited	✓	x	✓	x	x	Personal Care Packaging Components Lighting, Appliance, Automotive Plastic Components

Source: Annual Report, Company Websites and CareEdge Research

11.1.4 Key Players End User Industry Matrix

Rigid plastic packaging is widely used across many industries such as food and beverages, personal care, pharmaceuticals, agrochemicals, home care, paints, and adhesives. Companies like ALPLA, Mold-Tek Packaging Limited, Manjushree Technopack Limited, and Bharat PET Limited supply rigid plastic packaging solutions to a wide range of industries, helping meet varied customer needs.

Key Players	Food	Beverages	Agro-Chemicals	IMFL	Pharma-ceuticals	Industrial paint & chemicals
Bharat PET Limited	✓	✓	✓	✓	✓	✓
SSF Plastics India Limited	✓	✓	✓	✓	✓	✗
Manjushree Technopack Limited	✓	✓	✓	✓	✓	✓
Alpla India Private Limited	✓	✓	✓	✗	✓	✗
Mold-Tek Packaging Limited	✓	✗	✓	✗	✓	✓
Chemo Plastic Industries Private Limited	✓	✓	✗	✗	✓	✗
Thai Plaspac Packaging India Private Limited	✓	✓	✗	✗	✓	✗
National Polyplast (India) Private Limited	✓	✓	✗	✗	✗	✗
Weener Empire Plastics Limited	✓	✓	✗	✗	✓	✗
SNJ Synthetics Limited	✓	✓	✗	✓	✓	✗
Secure Industries Private Limited	✗	✓	✗	✓	✓	✗
Alpha Packaging Private Limited	✓	✓	✓	✗	✓	✗
Hindustan Tin Works Limited	✓	✓	✗	✗	✗	✓
Time Technoplast Limited	✓	✗	✓	✗	✓	✓
Shaily Engineering Limited	✗	✗	✗	✗	✓	✗

Source: Annual Report, Company Websites and CareEdge Research
IMFL: Indian-Made Foreign Liquor

11.1.5 Key Players Product Matrix

Rigid plastic packaging uses different materials based on the application. Caps and closures are commonly made from HDPE (High-Density Polyethylene) and PP (Polypropylene), preforms are produced using PET (Polyethylene Terephthalate), and sprays and pumps are typically manufactured from PP and HDPE. Bharat PET Limited uses these materials to manufacture its rigid packaging solutions, aligning material selection with functional and industry requirements. Bharat PET Limited has one of the widest ranges of product offerings amongst the peers in India in the rigid plastics and metal packaging solutions Industry.

Player	Product Type	Size	Material Type
Bharat PET Limited	Agrochemical Packaging	XS – L	PET, HDPE, Tin
	Bottles & Jars	XS – XL	PET, HDPE, CoEx
	Containers	XS – XL	PET, HDPE, Tin
	Caps & Closures	XS – L	HDPE, LDPE, PP, PPR

	Preform	XS – XL	PET
SSF Plastics India Limited	Bottles and Containers	S-XL	HDPE, PP, PET, rPET
	Caps and Closures	S-XL	HDPE, PP
	Agrochemical Packaging	XS-M	HDPE
	Droppers	–	LDPE, HDPE
	Pumps & Dispenser	–	HDPE, LDPE
	IML Tubs	–	PP
Manjushree Technopack Limited	Caps and closures	–	HDPE, PP, PET
	Preforms	–	PET
	Containers	XS-XL	HDPE, PP, PET, rPET, CoEx
	Pumps & Dispenser	–	HDPE, PP
	IML Tubs	–	PET, PP
Alpla India Private Limited	Bottles	S-XL	CoEx, HDPE, rPET, PET, PP
	Bottles & Jars	XS – XL	PET, HDPE, LDPE, PP, PET-G, CoEx
	Containers / Canisters	XS – XXL	PET, HDPE
	Caps & Closures	XS – L	PP, PE, HDPE, LDPE
	PET Preforms	XS – XL	PET
Mold-Tek Packaging Limited	Tubes	XS – M	HDPE, PE
	Jar and Containers	XS-XXL	PP
	Agrochemical Packaging	–	PP
	Pumps	–	–
	Sanitizer packs	–	PP
Chemco Plastic Industries Private Limited	IML Tubs	–	PET, PP
	Preforms	M-XL	PET
	Bottles	XS – L	PET, PP, PC, PETG, TRITAN
	Jars	S – L	PET
	Large Water Bottles	XXL	PET, HDPE
Thai Plaspac Packaging India Private Limited	Caps and Closures	–	–
	Preforms	S-XL	PET
	Bottles	S-XL	PET
	Jars	XS-L	PET
National Polyplast (India) Private Limited	IML Tubs	–	–
	Preforms	S-XL	PET
	Crates	XXL	HDPE
	Display Racks	–	–
SNJ Synthetics Limited	IML Tubs	–	–
	Jars	XS-L	PET
	Preforms	XS-L	PET
	Bottles	XS-XL	PET
Weener Empire Plastics Limited	Agrochemical Packaging	–	PET
	Cream Jars	XS-M	HDPE, PP, PET, PET-G
	Bottles	XS-L	HDPE, PP, PET
	Closures and dispensing	–	PP, HDPE, LDPE
Innovative Tech Pack Limited	Roll Ons	XS	PET, PVC, HDPE, PP, SAN
	Jar and Containers	–	PET, PP, HDPE, PCTA

	Bottles	–	PET, PP, HDPE
	Caps and closures	–	PP
	Dispenser	–	PP, HDPE
Alpha Packaging Private Limited	Bottles	XS-XL	PP, HDPE
	Flexible dairy pouch	–	–
	Agrochemical Packaging	–	PET, HDPE
	Pesticide Bottle	M-XXL	PET, HDPE
	Caps and closures	–	PP
	Preforms	S-XL	PP, PET
Hindustan Tin Works Limited	Cans	Diameter: ~70–175 mm	Tinplate / Metal
		Height: ~110–230 mm	
	Built-Up Cans		Tinplate / Metal
	Beverage Cans		Tinplate / Metal
Time Technoplast Limited	Material Handling Products	–	PP, HDPE
	Mox Films & Flexible Film Products	–	LDPE, HDPE
	Composite Cylinder Products	2kg - 22kg	–
	Industrial Packaging Products		HM-HDPE
	HDPE pipes	20 mm OD to 1400 mm OD	HDPE
	DWC pipes		HDPE
Shaily Engineering Limited	Healthcare & Medical Devices	–	PP, PE
	Consumer & Home Product	–	PP, PE
	Beauty & Personal Care Packaging	–	PP, PE
	Automotive & Industrial Plastic Components	–	–
	Lighting, Appliances & Electronics Components	–	Engineering Plastics (ABS, PC)

Source: Company Websites, Annual Report and CareEdge Research

Sizes – Sizes- (XS: <150 ml, S:150 ml-350 ml, M: 350 ml -500 ml, L: 500 ml-1 L, XL: 1 L- 10 L, XXL: >10 L)

LLDPE- Linear Low-density Polyethylene LDPE- Low-density Polyethylene, HDPE- High-density Polyethylene, rHDPE- Recycled High-Density Polyethylene, PC- Polycarbonate, PETG- Polyethylene Terephthalate G, SAN-Styrene-acrylonitrile resin, PP- Polypropylene, PVC- Polyvinyl chloride, PET-Polyethylene Terephthalate, CoEx- Co-extruded, MPED- Medium Density Polyethylene

11.1.6 Certifications and Patents Held by Key Players

Certifications are very important in the Indian packaging industry because they ensure products meet quality and regulatory standards. Since packaging often comes in direct contact with products, strict checks and monitoring are needed to maintain safety and reliability across the supply chain. These certifications show a company’s commitment to quality, sustainability, and safety, from product development to market growth. They also help build trust with customers, strengthen the company’s reputation, and reduce risks.

Player	Certification / Patent
Bharat PET	ISO 9001:2015
	ISO 22000:2018
	ISO/TS 22002-4:2013
	FSSC 22000
SSF Plastics India Limited	ISO 9001:2015
	BRCGS certified
	ISO 15378:2017
	ISO 13485:2016
	FDA registered
	DMF
	SEDEX SMETA 4 Pillar Compliance
	Marico Business Excellence Award, 2024
Manjushree Technopack Limited	ISO 14001:2015
	ISO 9001:2015
	FSSC 22000
	DMF
	SEDEX compliant
	GMP certified
	LEED Gold certification
Alpla India Private Limited	ISO 9001
	FSSC 22000
	ISO 14001
	OHSAS 18001
	ISO 50001
	ISO 15378
	ISO 8317
	ISO 22716
Mold-Tek Packaging Limited	ISO 9001:2015
	ISO 22000:2018
	ISO/TS 22002-4:2013
	FSSC 22000
Chemco Plastic Industries Private Limited	FSSC 22000
	ISO 9001:2015
	ISO 9001:2015
	ISO 22000
	ISO 13485:2016
	ISO 15378:2017
	ISO 10993 standards
Thai Plaspac Packaging India Private Limited	ISO 9001:2015
	ISO 22000
National Polyplast (India) Private Limited	FSSC 22000
	ISO 9001:2015

	ISO 14001:2015
	IATF 16949:2016
Weener Empire Plastics Limited	ISO 9001
	ISO 14001
	BRC Packaging Certification
	SEDEX compliant
	CDP Certification
SNJ Synthetics Limited	ISO 22000
Secure Industries Private Limited	NA
Innovative Tech Pack Limited	ISO 9001:2009
	ISO 22000:2005
	SEDEX compliant
	DMF
Alpha Packaging Private Limited	ISO 9001:2008
	FSSC 22000
	ISO 14001
	ISO 50001
	OHSAS 18001
Hindustan Tin Works Limited	ISO 9001 : 2015 - Cert No: 1710
	FSSC 22000
	ISO 22000:2018
	ISO/TS 22002-4:2013
Time Technoplast Limited	ISO 9001:2015
	IATF 16949:2016
	ISO 14001:2015
	ISO 22000:2018
	ISO 45001:2018
Shaily Engineering Limited	ISO 9001:2015
	IATF 16949:2016
	ISCC Plus
	ISO 13485:2016
	ISO 15378:2015

Source: Company Websites, Annual Report and CareEdge Research

11.1.7 Key Innovations, Technologies Used, and R&D Spends by Key Players

In today's fast-changing consumer goods market, the packaging industry is facing higher expectations. Customers now want packaging that is unique, affordable, and environmentally friendly. Brand owners and retailers are asking packaging suppliers to reduce costs while still maintaining quality and performance. At the same time, multinational companies are looking for innovative packaging solutions that meet their global sustainability goals.

To stay competitive, packaging companies are investing heavily in innovation and technology. They are focusing on research and development to create solutions that match market trends and consumer needs, such as lightweight packaging, recyclable materials, and biodegradable options. Companies are also working closely with partners to develop more cost-efficient and sustainable manufacturing processes.

Player	Key Innovation	Technology	R&D
<p>Bharat Pet Limited</p>	<ul style="list-style-type: none"> • GME 30.41 (26/22) neck preform: Newly launched neck profile with a full range of compatible preform configurations designed for subsequent PET stretch blow-moulding. • Introduction of three feature cap - dual security tamper evident caps with an additional feature of clear product category indication. • Anti-counterfeiting: Twin-colour caps and dual-colour bottles produced via multi-component processes to increase difficulty of unauthorised replication. • Agrochemical dispensing: Two-piece spray cap bottles for the agrochemical segment to support measured dispensing and handling; compatibility and usage validated per formulation. Introduction of GME 30.41 Neck profile, complete range of preforms • Large-format handling: Integrated handle on selected large-pack PET containers to improve manual handling and ergonomics; load ratings confirmed through internal testing. 	<ul style="list-style-type: none"> • Injection and blow-moulding lines, including systems supplied by Husky Injection Molding Systems. • Single-stage and multi-stage stretch blow-moulding (ASB/SBS), extrusion blow-moulding and multi-layer blow-moulding for barrier/functional structures. • Twin-colour closure production, automated assembly and inspection lines for metal/composite closures, and CNC machining for mould manufacture and maintenance. • Process parameters, quality controls and material specifications are maintained under the Company's quality management procedures. 	<ul style="list-style-type: none"> • In-house R&D and dedicated tool room for mould design, tooling manufacture, process optimisation, material selection, prototyping and compliance testing. • Key tool room equipment (non-exhaustive): CNC lathes and vertical machining centres, conventional milling and grinding machines, tool grinders, drilling and tapping machines, polishing equipment and laser marking systems.
<p>SSF Plastics India Limited</p>	<p>The company has implemented tamper-evident caps with intricate anti-counterfeiting designs, along with Angular Blow Moulding and logo embossing techniques. It has also</p>	<p>Utilizes advanced manufacturing technologies including multi-layer extrusion blow moulding, injection moulding, ISBM, automated labelling with vision inspection, cleanroom moulding, and assembly operations.</p>	<p>The company has established an R&D lab</p>

	adopted Thin Wall Technology to reduce container weight while maintaining strength and developed probiotic bottles with immediate closure to help minimize contamination risks.		
Manjushree Technopack Limited	Implements modified atmosphere packaging to extend shelf life, foaming processes for weight reduction, and recyclable valves for two-way caps in inverted bottles.	Utilizes extrusion blow molding, injection and compression molding, foaming technology, barrier co-extrusion processes, and recycled plastic layers in packaging manufacturing.	Collaborates with Ganesha Ecosphere Group on 100% recycled plastic packaging and partners with IISc Bengaluru to advance upcycling and recycling innovations.
Alpa India Private Limited	Developed innovations such as EBM tubes with multilayer barrier properties, cube technology-based bi-injection caps for anti-counterfeiting	Uses core manufacturing technologies, including Injection Moulding, Extrusion Blow Moulding (EBM), Injection Moulding – Preforms, and Injection Stretch Blow Moulding (ISBM) for plastic packaging production.	The company focuses on developing new packaging products, improving existing solutions, and introducing new technologies and patented packaging concepts
Mold-Tek Packaging Limited	In-Mould Labelling (IML) decorated packaging in India with robotic label placement for permanent decoration. Developed digital IML with dual QR codes for traceability and authentication	Injection Moulding, Injection Blow Moulding (IBM), and hot-runner mold technology, along with IML robotic automation, heat transfer labelling, screen and offset printing, and shrink sleeving.	The company focuses on developing new packaging products, improving existing solutions, and introducing new technologies and patented packaging concepts
Chemco Plastic Industries Private Limited	Introduced Hippo Cool Roof insulation with Venti-Net technology and multi-layer composite insulation and protective packaging materials.	Injection Molding, Injection Stretch Blow Molding (ISBM), and Extrusion Blow Molding for plastic packaging. Also employs high-speed tape extrusion, circular/flat looms, extrusion coating & lamination	R&D is conducted across operations with 20+ dedicated staff and in-house laboratories for product testing and validation, focusing on continuous technology upgrades
Thai Plaspac Packaging India Private Limited	NA	Moulding Technologies – Injection, extrusion blow, PET, in-mould labelling	NA
National Polyplast (India) Private Limited	Developed light-weight packaging, IML thin-wall decorated containers with tamper-evident features, and customised injection-moulded packaging components for multiple industries.	In-Mould Labeling (IML) with all-electric machines and robotic systems, and PET preform manufacturing using Husky technology. Also utilises CAD-based engineering and tooling support.	The company focuses on CAD design, tooling development, and program management for product customisation, supported by technology investments and extensive injection molding expertise.

Weener Empire Plastics Limited	Developed sustainable packaging solutions, including Cif ecorefill lightweight refill packs, mono-material spray systems, 100% recyclable dispensing valves, and SealPack ultralight roll-on packaging, focused on circular economy principles.	Advanced injection molding, automated assembly systems, decoration technologies, and clean-room manufacturing, supported by in-house tool shops and molding expertise for caps, closures, bottles, jars, and dispensing systems.	R&D is driven by Innovation & Development teams and Innovation Excellence Centres, focusing on smart product design, advanced tooling, efficient processes, and sustainable material development.
SNJ Synthetics Limited	NA	Uses Husky Hypet 48-cavity injection molding, ASB Nissei PM1 injection molding, single-stage ISBM and stretch blow molding, supported by automated manufacturing systems and clean-room facilities.	R&D includes a product engineering team for design and customisation, onsite product testing and evaluation, and quality labs with instruments such as melt viscometers, polariscope.
Secure Industries Private Limited	Developed tamper-evident closures (VF47, Nip Lid) with slit bands for product safety, multi-component injection-moulded closure systems with pourers	Uses injection moulding and compression moulding for closures, along with HDPE and random co-polymer materials, and closure engineering features such as tamper-evident bands, bore seals, and multi-point sealing systems.	NA
Alpha Packaging Private Limited	NA	Uses single-stage Injection Stretch Blow Moulding (ISBM) and PET preform manufacturing, supported by Class 10,000 clean-room production and advanced technology for PET bottles	In-house design and engineering services with custom tooling capabilities, enabling rapid development of new bottle designs and customer-collaborative packaging solutions.
Hindustan Tin Works Limited	Developed shaped cans, slip-lid and re-closable cans, metal over caps with dimples, and decorative storage jars, with continuous innovation in metal packaging products.	Uses automated can manufacturing lines, high-speed printing & lacquering, UV printing, sheet/strip feed presses, Angelus seamers, Soudronic welding lines, and laser-based leak testing with automated inspection systems.	R&D focuses on developing innovative metal packaging solutions, identifying new packaging opportunities, and improving product quality and manufacturing processes.
Time Technoplast Limited	Developed MOX cross-laminated films (Techpaulin), PU Type-IV composite LPG cylinders, plastic automotive fuel tanks, and polymer products such as antistatic drums, IBCs, composite cylinders, and de-air circulation tanks.	Uses MOX multi-layer cross-lamination technology, carbon-fibre composite cylinder technology, and polymer processing technology	R&D team of 30–35 experts focuses on new polymer product development, process improvements, and portfolio expansion
Shaily Engineering Limited	Develops high-precision plastic components using engineering polymers, including micro-molded parts (0.03 g, 5-micron tolerance),	Uses scientific injection moulding (35–1200T machines), 5-axis precision mold manufacturing, and processing of high-performance polymers. Also employs printing,	R&D activities including DFM/DFA, tolerance analysis, mould design, and rapid prototyping and test

metal-to-plastic conversions, and custom drug-delivery and healthcare devices.	welding, laser marking, assembly, and metrology/CT inspection.	automated and advanced labs with UK-India collaboration.
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Source: Annual Report and CareEdge Research

11.1.8 Key Players Sustainability Initiatives and Recycling Ability

As the Indian packaging industry continues to grow, sustainability is becoming more important. Packaging manufacturers and FMCG companies in India are exploring new solutions that support recycling and reuse. These efforts help companies meet their sustainability targets while also responding to the expectations of consumers, regulators, and environmental groups. In India, regulations around sustainable packaging are also increasing. These rules encourage the use of recyclable materials and require higher levels of recycled content in packaging, showing the country's stronger focus on environmental protection and sustainable development.

Player	Sustainability Initiatives	Recycling Abilities
Bharat Pet Limited	<p>Renewable energy</p> <ul style="list-style-type: none"> The Company operates a captive solar power plant of 227 kW. Plans are in place to expand renewable procurement via power purchase agreements (PPA) to achieve an additional capacity of more than 5,000 kW. <p>Energy efficiency and emissions</p> <ul style="list-style-type: none"> Air-recovery systems are installed on plant machinery to capture and reuse waste air. 	<p>Materials and recycling</p> <ul style="list-style-type: none"> The Company actively works to increase use of post-consumer recycled (PCR) resin and has invested in equipment capable of processing rPET. Tinplate containers are produced using readily recyclable materials; metal scrap is segregated and supplied to authorised recyclers.
SSF Plastics India Limited	Adopted renewable energy, sourcing 50% power at the South unit from renewables in 2024, expanding PCR bottle content, shifting moulding machines to hybrids, promoting IML packaging, and improving energy efficiency through audits and solar adoption.	SSF Plastics processes approximately 2,500 tonnes of post-consumer recycled (PCR) material annually.
Manjushree Technopack Limited	Reduced energy and water consumption per tonne of production, collects post-consumer plastic waste, implemented rainwater harvesting with 60-million-litre capacity, and sources 40% of energy requirements from renewable sources.	Manjushree Technopack operates a greenfield captive recycling facility at Bidadi, producing around 6,000 tonnes of recycled PP and HDPE resin annually with quality comparable to virgin materials.
Alpla India Private Limited	Utilising renewable energy; 28% of energy is sourced from renewables as per FY23. Saved ~4,250 tonnes of CO ₂ e in FY23. Researching and using alternative input materials such as cellulose, sugarcane, and sunflower seed hulls for packaging	ALPLA's global recycling network includes 13 plants with a total output capacity of ~350,000 tonnes of PCR material
Mold-Tek Packaging Limited	End-to-end packaging lifecycle management through backward integration, with 10 ISO-certified manufacturing units ensuring quality and eco-conscious solutions for the Food, FMCG, Paint, and Lubricant industries.	Packaging designed for full recyclability, focusing on material lifecycle, reuse, and repurposing, including recyclable 2L-15L square pack designs that reduce environmental impact.

Chemco Plastic Industries Private Limited	Use of renewable energy and strong ecological responsibility is integrated into large-scale operations, ensuring sustainability alongside stringent product quality standards.	Dedicated recycling is integrated into the packaging lifecycle, enabling reuse and repurposing of materials across products such as PET preforms, bottles, containers, jars, shrink wraps, and films.
Thai Plaspac Packaging India Private Limited	Promotion of sustainable materials, energy efficiency, waste reduction, and carbon footprint reduction in the paper and packaging industry through initiatives such as recycling programs and education campaigns	TPAC Packaging utilises rPET in the production of personal care products
National Polyplast (India) Private Limited	CSR-driven sustainability with recognised development methodologies, FSSC 22000 certified PET preform plants, and energy-efficient IML packaging using all-electric machines.	Recyclability is integrated into PET preforms, thin-walled containers, and moulded products, with lifecycle-focused packaging designed for reuse and responsible recycling.
Weener Empire Plastics Limited	Circular economy–focused strategy with targets for all products to be recyclable/reusable/refillable by 2025, 90% renewable energy and 70% GHG reduction by 2030, and zero waste to landfill by 2025.	Packaging made from recyclable materials (HDPE, PP, PET) is designed to align with recycling streams, supporting recyclable, reusable, or refillable product solutions.
SNJ Synthetics Limited	ISO 22000 certified manufacturing with integrated processes, innovation-driven R&D, FDA-compliant and UV-stable materials, and rapid prototyping to improve efficiency and reduce material waste.	Packaging made from recyclable PET and HDPE, including preforms, bottles, jars, and containers designed for reuse and recyclability with lightweight and durable material design.
Secure Industries Private Limited	NA	NA
Alpha Packaging Private Limited	NA	NA
Hindustan Tin Works Limited	“Go Green Go Can” campaign and “Canvironment Week” initiative promoting tin cans as a hygienic, safe, and sustainable packaging solution under the company’s CSR framework.	Packaging made from 100% recyclable tinplate, supporting reuse and recycling across food, beverage, paint, and decorative cans.
Time Technoplast Limited	Focus on durable, reusable, and innovative composite solutions across industrial packaging, material handling, and infrastructure products, supporting sustainability through long-term use and operational efficiency.	Industrial packaging, composite cylinders, and advanced polymers are designed for reuse and recyclability, aligning with circular economy principles.
Shaily Engineering Limited	Operates on 100% renewable energy and incorporates up to 35% recycled material, embedding sustainability and positive environmental impact into operations with global quality standards.	Engineering polymers designed for recyclability and durability, using recycled content to reduce virgin plastic and support circular economy principles across healthcare, consumer, beauty, and automotive sectors.

Source: Annual Report, Company Website and CareEdge Research

11.2 Financial Benchmarking

11.2.1 Revenue from Operations (INR Millions)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	2,204.50	2,621.29	3,328.62	2,268.13
Mold-Tek Packaging Limited	7,299.25	6,986.50	7,813.20	4,503.17
Shaily Engineering Limited	6,070.66	6,438.71	7,867.98	5,033.46
Hindustan Tin Works Limited	4,646.21	4,193.54	4,062.88	2,362.92
Time Technoplast Limited	42,894.43	49,925.01	54,570.41	28,637.60
A J Packaging Limited	1,825.89	2,100.23	1,934.47	NA
Alpha Packaging Private Limited	1,139.15	998.48	NA	NA
Alpla India Private Limited	12,662.34	12,485.90	13,136.89	NA
Chemco Plastic Industries Private Limited	7,607.98	7,681.00	9,324.00	NA
Manjushree Technopack Limited	20,963.39	21,170.03	25,698.26	NA
National Polyplast (India) Private Limited	4,239.53	4,268.66	5,278.81	NA
Secure Industries Private Limited	1,854.01	2,210.79	2,181.98	NA
SNJ Synthetics Limited	2,226.11	2,837.32	2,421.06	NA
SSF Plastics India Limited	5,987.43	6,309.06	8,025.36	NA
Weener Empire Plastics Private Limited	2,657.21	2,529.41	2,305.92	NA
Thai Plaspac Packaging India Private Limited	126.18	143.99	163.73	NA

Source: Annual Report and CareEdge Research

NA: Not Available

The primary measure of a company's financial performance is its revenue from operations, which serves as the key indicator of business success and income generation. Revenue from Operations performance across packaging companies reflects a mix of growth. Among the peer set, Bharat Pet Limited delivered the highest CAGR from FY23 to FY25 of 23% and H1FY26 is already ahead of FY25, indicating accelerating momentum. Time Technoplast Limited remains the largest, revenue-wise showing 9% growth in FY25 (y-o-y), SSF Plastics and Thai Plaspac Packaging India Pvt Ltd, also show healthy CAGRs of 16% and 14% respectively, between FY23-FY25.

11.2.2 EBITDA (INR Millions)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	500.92	522.35	643.10	558.78
Mold-Tek Packaging Limited	1,354.48	1,331.76	1,416.13	858.98
Shaily Engineering Limited	918.91	1,169.40	1,760.57	1,476.29
Hindustan Tin Works Limited	314.25	288.14	262.53	143.26
Time Technoplast Limited	5,771.30	6,908.11	7,849.53	4,176.20
A J Packaging Limited	141.46	183.22	209.29	NA
Alpha Packaging Private Limited	71.78	72.08	NA	NA
Alpla India Private Limited	1,119.52	1,248.02	1,300.68	NA
Chemco Plastic Industries Private Limited	1,381.14	1,378.32	1,500.54	NA
Manjushree Technopack Limited	2,935.09	3,733.30	3,971.98	NA
National Polyplast (India) Private Limited	337.33	408.40	562.45	NA
Secure Industries Private Limited	282.35	274.94	278.31	NA
SNJ Synthetics Limited	254.51	236.81	261.58	NA
SSF Plastics India Limited	898.86	1,057.30	1,245.54	NA
Weener Empire Plastics Private Limited	170.27	147.88	95.05	NA
Thai Plaspac Packaging India Private Limited	7.49	22.22	16.34	NA

Source: Annual Report and CareEdge Research
NA: Not Available
EBITDA =(Earnings Before Interest, Taxes, Depreciation, and Amortization)

11.2.3 EBITDA Margin (%)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	22.72%	19.93%	19.32%	24.64%
Mold-Tek Packaging Limited	18.56%	19.06%	18.12%	19.08%
Shaily Engineering Limited	15.14%	18.16%	22.38%	29.33%
Hindustan Tin Works Limited	6.76%	6.87%	6.46%	6.06%
Time Technoplast Limited	13.45%	13.84%	14.38%	14.58%
A J Packaging Limited	7.75%	8.72%	10.82%	NA
Alpha Packaging Private Limited	6.30%	7.22%	NA	NA
Alpla India Private Limited	8.84%	10.00%	9.90%	NA
Chemco Plastic Industries Private Limited	18.15%	17.94%	16.09%	NA
Manjushree Technopack Limited	14.00%	17.63%	15.46%	NA
National Polyplast (India) Private Limited	7.96%	9.57%	10.65%	NA
Secure Industries Private Limited	15.23%	12.44%	12.75%	NA
SNJ Synthetics Limited	8.35%	11.43%	10.80%	NA
SSF Plastics India Limited	15.01%	16.76%	15.52%	NA
Weener Empire Plastics Private Limited	6.41%	5.85%	4.12%	NA
Thai Plaspac Packaging India Private Limited	5.93%	15.43%	9.98%	NA

Source: Annual Report and CareEdge
NA: Not Available
EBITDA margins is calculated as EBITDA/Revenue from operations.

EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) is a key financial metric used to evaluate a company's profitability and performance relative to its peers, providing valuable insights for benchmarking against industry standards. Bharat PET Limited showed 23% y-o-y growth in FY25, along with margins ranging from 19% to 23% between FY23 to FY25. Time Technoplast Limited reports the highest absolute EBITDA across the period under review, supported by its large revenue base and diversified operations. Its EBITDA margins have remained broadly stable in 13 to 15% range, reflecting consistency in operating performance and scale advantages. Shaily Engineering Limited has recorded strong EBITDA expansion along with a notable improvement in margins across the three financial years, with further improvement visible in H1FY26. The margin trajectory suggests effective cost absorption and operating leverage as revenues scale up. It should 51% y-o-y growth in EBITDA levels in FY25

11.2.4 PAT (INR Million)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	266.91	281.54	367.68	333.10
Mold-Tek Packaging Limited	804.31	665.86	605.52	378.82
Shaily Engineering Limited	351.50	572.91	931.19	923.74
Hindustan Tin Works Limited	164.96	170.41	122.77	44.91
Time Technoplast Limited	2,237.67	3,158.90	3,944.46	2,137.80
A J Packaging Limited	26.94	43.42	56.80	NA
Alpha Packaging Private Limited	-30.17	-0.89	NA	NA
Alpla India Private Limited	241.55	140.28	210.85	NA
Chemco Plastic Industries Private Limited	635.22	522.85	545.35	NA
Manjushree Technopack Limited	592.32	1,407.92	2,476.27	NA
National Polyplast (India) Private Limited	91.60	111.68	198.43	NA
Secure Industries Private Limited	79.51	53.76	7.87	NA
SNJ Synthetics Limited	46.08	61.70	52.16	NA

SSF Plastics India Limited	485.83	461.00	308.35	NA
Weener Empire Plastics Private Limited	-37.24	-48.17	-66.99	NA
Thai Plaspac Packaging India Private Limited	1.96	11.32	3.91	NA

Source: Annual Report and CareEdge

NA: Not Available

11.2.5 PAT Margins (%)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	12.09%	10.67%	11.00%	14.67%
Mold-Tek Packaging Limited	11.00%	9.51%	7.73%	8.39%
Shaily Engineering Limited	5.75%	8.81%	11.80%	18.19%
Hindustan Tin Works Limited	3.49%	3.97%	2.98%	1.89%
Time Technoplast Limited	5.21%	6.31%	7.22%	7.46%
A J Packaging Limited	1.47%	2.06%	2.93%	NA
Alpha Packaging Private Limited	-2.62%	-0.09%	0.00%	NA
Alpla India Private Limited	1.86%	1.10%	1.56%	NA
Chemco Plastic Industries Private Limited	8.33%	6.80%	5.83%	NA
Manjushree Technopack Limited	2.81%	6.61%	9.58%	NA
National Polyplast (India) Private Limited	2.15%	2.61%	3.75%	NA
Secure Industries Private Limited	4.28%	2.42%	0.36%	NA
SNJ Synthetics Limited	2.17%	2.06%	2.15%	NA
SSF Plastics India Limited	8.09%	7.27%	3.83%	NA
Weener Empire Plastics Private Limited	-1.39%	-1.89%	-2.88%	NA
Thai Plaspac Packaging India Private Limited	1.55%	7.84%	2.38%	NA

Source: Annual Report and CareEdge

NA: Not Available

PAT Margin= PAT/Total Income

Profit after tax (PAT) and PAT margin are essential metrics used to assess a company's profitability after accounting for all operating and overhead expenses, providing insights into the effectiveness of its operations. A strong CAGR for period of FY23-25 was shown by Manjushree Technopack Limited, Shaily Engineering Limited and Time Technoplast. Bharat PET Limited too showed a decent CAGR for PAT 17.37%. Many players have a PAT margin in a single digit Bharat PET Limited is the only player maintained a double-digit PAT margins over the period of FY23-25

11.2.6 Return on Equity (%)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	64.05%	40.30%	34.47%	23.79%
Mold-Tek Packaging Limited	14.40%	11.20%	9.49%	5.67%
Shaily Engineering Limited	8.76%	12.48%	17.00%	14.54%
Hindustan Tin Works Limited	8.72%	8.32%	5.70%	2.05%
Time Technoplast Limited	9.61%	12.07%	13.32%	6.86%
A J Packaging Limited	10.52%	14.76%	14.04%	NA
Alpha Packaging Private Limited	-4.76%	-0.14%	NA	NA
Alpla India Private Limited	10.63%	5.81%	8.00%	NA
Chemco Plastic Industries Private Limited	23.14%	15.86%	14.49%	NA
Manjushree Technopack Limited	6.23%	13.97%	17.55%	NA
National Polyplast (India) Private Limited	8.02%	8.91%	13.67%	NA
Secure Industries Private Limited	16.98%	10.30%	1.49%	NA
SNJ Synthetics Limited	12.22%	8.37%	8.65%	NA
SSF Plastics India Limited	15.72%	12.92%	7.96%	NA
Weener Empire Plastics Private Limited	-2.76%	-3.71%	-5.44%	NA

Thai Plaspac Packaging India Private Limited	5.28%	23.39%	7.48%	NA
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Source: Annual Report and CareEdge

NA: Not Available

Return on Equity is calculated as Restated Profit/ (Loss) attributable to Owner of the Parent for the year/period divided by Total equity (Excluding non-controlling interest).

Return on equity (ROE) evaluates a company's ability to generate profits from shareholders' equity, indicating management efficiency and potential returns for shareholders. It is a key metric for assessing financial performance and investor confidence. Bharat PET Limited showed the Highest ROE among all players across the period of FY23-25

11.2.7 Return on Capital Employed (ROCE)(%)

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	53.13%	50.75%	32.75%	18.15%
Mold-Tek Packaging Limited	17.59%	13.32%	11.70%	6.56%
Shaily Engineering Limited	10.73%	13.14%	18.52%	15.59%
Hindustan Tin Works Limited	11.72%	10.62%	7.86%	3.65%
Time Technoplast Limited	13.07%	15.84%	17.20%	8.86%
A J Packaging Limited	13.46%	16.20%	15.54%	NA
Alpha Packaging Private Limited	0.52%	2.15%	NA	NA
Alpla India Private Limited	7.19%	7.24%	7.87%	NA
Chemco Plastic Industries Private Limited	20.47%	15.94%	15.11%	NA
Manjushree Technopack Limited	9.84%	13.15%	8.83%	NA
National Polyplast (India) Private Limited	10.60%	10.25%	14.28%	NA
Secure Industries Private Limited	11.81%	8.66%	9.02%	NA
SNJ Synthetics Limited	15.77%	16.01%	16.23%	NA
SSF Plastics India Limited	14.56%	10.72%	9.51%	NA
Weener Empire Plastics Private Limited	-0.74%	-1.73%	-5.20%	NA
Thai Plaspac Packaging India Private Limited	6.83%	27.84%	22.05%	NA

Source: Annual Report and CareEdge

ROCE (Return on Capital Employed) = EBIT ÷ Capital Employed

NA: Not Available

ROCE (Return on Capital Employed) is a metric that assesses a company's efficiency by evaluating its profitability in relation to the capital invested to generate profits. It provides a dependable measure of a company's performance over extended time frames. Shaily Engineering Limited, Time Technoplast Limited, Thai Plaspac Packaging India Private Limited had a decent ROCE 17~22% in FY25. Bharat PET Limited in FY23 and FY24 had the strong ROCE of more than 50% and had a 32.75% ROCE in FY25.

11.2.8 Net Working Capital Cycle / Days

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	169	155	156	141
Mold-Tek Packaging Limited	88	108	102	104
Shaily Engineering Limited	67	75	98	97
Hindustan Tin Works Limited	122	143	123	105
Time Technoplast Limited	130	123	124	122
A J Packaging Limited	90	78	101	NA
Alpha Packaging Private Limited	114	119	NA	NA
Alpla India Private Limited	64	72	88	NA
Chemco Plastic Industries Private Limited	114	129	104	NA
Manjushree Technopack Limited	68	65	78	NA
National Polyplast (India) Private Limited	80	104	81	NA

Secure Industries Private Limited	65	37	40	NA
SNJ Synthetics Limited	61	94	84	NA
SSF Plastics India Limited	101	123	111	NA
Weener Empire Plastics Private Limited	43	59	48	NA
Thai Plaspac Packaging India Private Limited	116	119	135	NA

Source: Annual Report and CareEdge Research

NA: Not Available

Net Working Capital Days is calculated as Net Working Capital divided by Revenue from operations multiplied by 365 (for full Fiscal)/183 (for the six months period ended September 30, 2025). Net Working Capital is calculated as Inventories add Trade Receivables less Trade Payables (micro and small enterprises and other than micro and small enterprises).

The working capital cycle measures the time a company takes to convert its current assets into cash to meet short-term obligations. It reflects operational efficiency and cash flow management, playing an important role in determining a company's liquidity and overall financial health. Bharat Pet Limited maintains a relatively higher but stable working capital cycle compared with peers, indicating a consistent operating structure. Among competitors, Shaily Engineering Limited, ALPLA India Private Limited, and Weener Empire Plastics Private Limited demonstrate comparatively efficient working capital management.

11.2.9 Net Debt/EBITDA Ratio

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	0.68	0.33	0.95	2.25
Mold-Tek Packaging Limited	0.30	0.94	1.23	2.57
Shaily Engineering Limited	1.78	1.56	0.93	1.11
Hindustan Tin Works Limited	2.18	2.77	2.88	5.96
Time Technoplast Limited	1.23	0.86	0.60	0.99
A J Packaging Limited	3.77	3.28	2.92	NA
Alpha Packaging Private Limited	6.18	13.28	NA	NA
Alpla India Private Limited	6.19	5.50	5.37	NA
Chemco Plastic Industries Private Limited	1.91	2.28	2.30	NA
Manjushree Technopack Limited	2.47	1.95	2.20	NA
National Polyplast (India) Private Limited	3.29	3.84	2.75	NA
Secure Industries Private Limited	2.95	3.38	2.25	NA
SNJ Synthetics Limited	2.72	2.44	2.25	NA
SSF Plastics India Limited	1.31	3.31	3.25	NA
Weener Empire Plastics Private Limited	-1.09	-0.85	-1.25	NA
Thai Plaspac Packaging India Private Limited	1.83	0.71	0.20	NA

Source: Annual Report and CareEdge Research

NA: Not Available

Net Debt to EBITDA is calculated as Net Debt divided by EBITDA.

The Net Debt/EBITDA ratio measures a company's ability to repay its debt using its operating earnings. A lower ratio indicates stronger financial health, while a higher ratio may signal higher leverage risk. Thai Plaspac Packaging India Private Limited has the lowest ratio among the players in FY25. Bharat PET Limited had a ratio of 0.95 in FY25.

11.2.10 Net Debt/Equity Ratio

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	0.81	0.25	0.57	0.90
Mold-Tek Packaging Limited	0.07	0.21	0.27	0.33
Shaily Engineering Limited	0.41	0.40	0.30	0.26
Hindustan Tin Works Limited	0.36	0.39	0.35	0.39

Time Technoplast Limited	0.30	0.23	0.16	0.13
A J Packaging Limited	2.08	2.04	1.51	NA
Alpha Packaging Private Limited	0.70	1.50	NA	NA
Alpla India Private Limited	3.05	2.85	2.65	NA
Chemco Plastic Industries Private Limited	0.96	0.95	0.92	NA
Manjushree Technopack Limited	0.76	0.72	0.62	NA
National Polyplast (India) Private Limited	0.97	1.25	1.07	NA
Secure Industries Private Limited	1.78	1.78	1.18	NA
SNJ Synthetics Limited	1.28	1.13	0.98	NA
SSF Plastics India Limited	0.38	0.98	1.04	NA
Weener Empire Plastics Private Limited	-0.14	-0.10	-0.10	NA
Thai Plaspac Packaging India Private Limited	0.37	0.33	0.06	NA

Source: Annual Report and CareEdge Research

NA: Not Available

Net Debt= Current Borrowings + Non-Current Borrowings - Cash & Cash Equivalents

Net Debt to Equity Ratio is calculated as Net Debt divided by total equity.

Net Debt/Equity is a financial ratio that measures a company's leverage by comparing its net debt (total debt minus cash and equivalents) to shareholders' equity. A higher ratio indicates greater financial risk, while a lower ratio suggests stronger financial stability. It helps assess a firm's reliance on debt financing relative to its equity base. Thai Plaspac Packaging India Private Limited has the lowest Ratio in FY25, whereas Secure Industries Private Limited and A J Packaging have the highest ratio among the peers. Bharat PET Limited had an increase in the ratio for H1FY25, which is 0.90 less than one.

11.2.11 Fixed Asset Turnover Ratio

Company Name	FY23	FY24	FY25	H1FY26
Bharat Pet Limited	3.82	5.09	4.63	2.44
Mold-Tek Packaging Limited	1.94	1.46	1.42	0.78
Shaily Engineering Limited	1.65	1.36	1.57	0.91
Hindustan Tin Works Limited	5.02	4.17	4.01	1.54
Time Technoplast Limited	3.10	3.65	3.98	2.02
A J Packaging Limited	3.93	3.73	3.18	NA
Alpha Packaging Private Limited	2.17	1.94	NA	NA
Alpla India Private Limited	1.95	1.92	2.03	NA
Chemco Plastic Industries Private Limited	2.30	2.03	2.42	NA
Manjushree Technopack Limited	2.11	2.13	1.80	NA
National Polyplast (India) Private Limited	2.98	2.31	2.55	NA
Secure Industries Private Limited	2.02	1.99	2.31	NA
SNJ Synthetics Limited	4.50	3.65	3.98	NA
SSF Plastics India Limited	2.23	1.53	1.57	NA
Weener Empire Plastics Private Limited	3.11	3.34	2.77	NA
Thai Plaspac Packaging India Private Limited	4.47	5.75	5.29	NA

Source: Annual Report and CareEdge

NA: Not Available

Fixed Assets Turnover Ratio= Revenue from Operations/(Property, Plant and Equipment + Right-of-Use Assets + Intangible Assets)

The Fixed Asset Turnover Ratio assesses how effectively a company uses its fixed assets to generate revenue. A higher ratio indicates efficient asset utilisation, while a lower ratio may suggest underperformance or underutilization. In FY25 Thai Plaspac Packaging India Private Limited had the highest Fixed Asset Turnover Ratio of 5.29. Bharat PET Limited had the second-highest Fixed Asset Turnover ratio of 4.63 with a consistent improvement in the ratio for the period from FY23-25.

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