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Industry Report On Plastic Industry

(Product: PP/HDPE Tarpaulin Sheet)

21-04-25

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1. Indian Macro Economy an overview

The Indian economy is on a strong wicket and stable footing, demonstrating resilience in the face of geopolitical challenges. The Indian economy has consolidated its post-Covid recovery with policymakers – fiscal and monetary – ensuring economic and financial stability. Nonetheless, change is the only constant for a country with high growth aspirations. For the recovery to be sustained, there has to be heavy lifting on the domestic front because the environment has become extraordinarily difficult to reach agreements on key global issues such as trade, investment and climate. High economic growth in FY24 came on the heels of growth rates of 9.7% and 7.0%, respectively, in the previous two financial years. The headline inflation rate is largely under control, although the inflation rate of some specific food items is elevated. The trade deficit was lower in FY24 than in FY23, and the current account deficit for the year is around 0.7% of GDP. In fact, the current account registered a surplus in the last quarter of the financial year. Foreign exchange reserves are ample. Public investment has sustained capital formation in the last several years even as the private sector shed its balance sheet blues and began investing in FY22. Now, it has to receive the baton from the public sector and sustain the investment momentum in the economy. The signs are encouraging. National income data show that non-financial private-sector capital formation, measured in current prices, expanded vigorously in FY22 and FY23 after a decline in FY21. However, investment in machinery and equipment declined for two consecutive years, FY20 and FY21, before rebounding strongly. Early corporate sector data for FY24 suggest that capital formation in the private sector continued to expand but at a slower rate.

Snapshots on key Economic Indicators: -

Foreign Direct Investment: -

Foreign Direct Investment, the subject of much analysis, has held up. RBI data on India's Balance of Payments shows us that the investment interest of external investors, measured in terms of dollar inflows of new capital, was USD45.8 billion in FY24 compared to USD47.6 billion in FY23. This slight decline is in line with global trends. Reinvestment of earnings remained the same. Repatriation of investment was USD29.3 billion in FY23 and USD44.5 billion in FY24. Many private equity investors took advantage of buoyant equity markets in India and exited profitably. It is a sign of a healthy market environment that offers profitable exits to investors, which will bring newer investments in the years to come. That said, the environment for foreign direct investment to grow in the coming years is not highly favourable for many reasons.

Employment generation:-

It is worth reiterating that job creation happens mainly in the private sector. Second, many (not all) of the issues that influence economic growth, job creation and productivity and the actions to be taken therein are in the domain of state governments. So, in other words, India needs a tripartite compact, more than ever before, to deliver on the higher and rising aspirations of Indians and complete the journey to Viksit Bharat by 2047.

In more than one respect, the action lies with the private sector. In terms of financial performance, the corporate sector has never had it so good. Results of a sample of over 33,000 companies show that, in the three years between FY20 and FY23, the profit before taxes of the Indian corporate sector nearly quadrupled. Further, newspaper headlines told us that the corporate profits-to-GDP ratio rose to a 15-year high in FY24. Business Line reported, "The corporate profit for the Nifty-500 universe was up 30 per cent last fiscal to ₹14.11-lakh crore against ₹10.88 lakh crore in FY23. The nominal GDP grew 9.6 per cent y-o-y to ₹295-lakh crore (₹269-lakh crore)1 ". Hiring and compensation growth hardly kept up with it. But, it is in the interest of the companies to step up hiring and worker compensation.

Between FY19 and FY23, the cumulative growth in private sector non-financial Gross Fixed Capital Formation (GFCF) is 52% in current prices. During the same period, the cumulative growth in general government (which includes states) is 64%. The gap does not appear to be too wide.

Private sector GFCF in machinery and equipment and intellectual property products has grown cumulatively by only 35% in the four years to FY23. Meanwhile, its GFCF in 'Dwellings, other buildings and structures' has increased by 105%. This is not a healthy mix. Second, the slow pace of investment in M&E and IP Products will delay India's quest to raise the manufacturing share of GDP, delay the improvement in India's manufacturing competitiveness, and create only a smaller number of higher-quality formal jobs than otherwise.

Nonetheless, there is a silver lining in the data. In the two years since FY21, GFCF by the private sector has grown faster. General government GFCF rose a cumulative 42% between FY21 and FY23. Non-Financial Private Sector's overall GFCF increased by 51%; investment in Machinery and Equipment and Intellectual Property Products increased by 38%. So, the growth in these two critical sub-components of Private Sector GFCF is similar to that of the overall GFCF by the General Government. This is a statistic that bears watching. They should continue to invest. To do so, they need demand visibility. That comes from employment and income growth.

Agriculture can be a growth engine:-

The agriculture sector is one area ripe for and in need of such a pan-India dialogue. Agriculture and farmers matter for a nation. Most countries understand that. India is no exception. India subsidises their water, electricity and fertilisers. The former two are provided virtually free. Their incomes are not taxed. The government offers them a minimum support price (MSP) for 23 selected commodities. Monthly cash support is offered to farmers through the PM-KISAN scheme. Indian governments – national and sub-national –write off their loans. So, governments in India spend enough resources to look after the farmers well. Yet, a case can be made that they can be served better with some re-orientation of existing and new policies.

Unleashing small enterprises:-

Another area where policy intentions have yet to manifest in desired outcomes is with respect to small, medium, and large enterprises. Earlier, several products were reserved for small scale industries. That was phased out as it benefitted neither the small-scale industries nor the overall economy. Recent concerted efforts at formalising them are making progress. Progress is relatively slower on access to finance. Buyers and creditors are shedding old mindsets and practices too slowly for these enterprises to feel the effect. However, these enterprises need maximum relief from the compliance burdens they face. Laws, rules and regulations stretch their finances, abilities and bandwidth, perhaps robbing them of the will to grow.

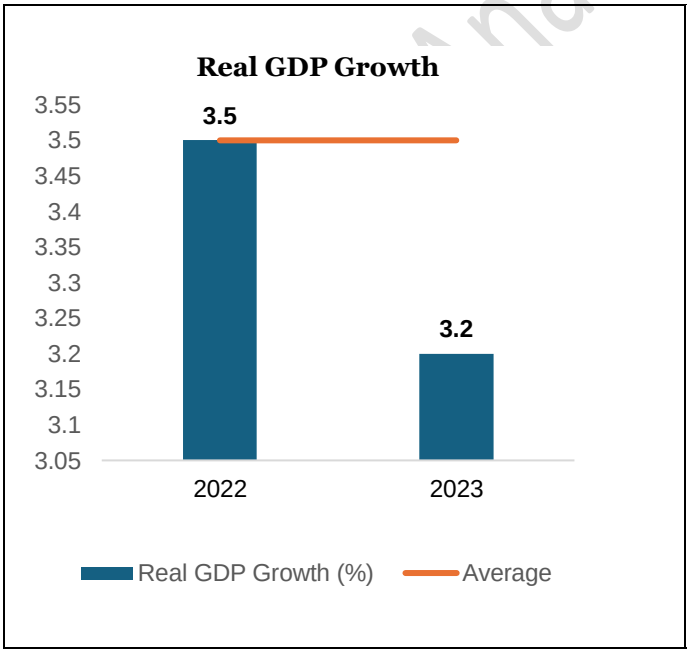
Final words:-

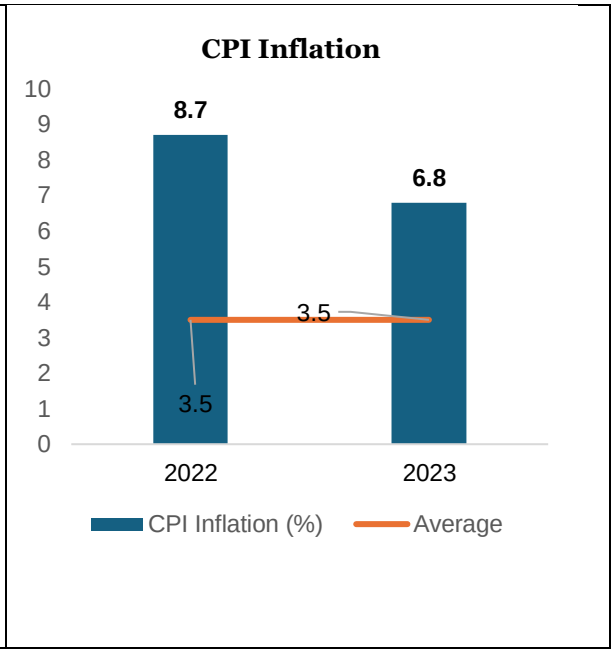
The tripartite compact that this country needs to become a developed nation amidst emerging unprecedented global challenges is for governments to trust and let go, for the private sector to reciprocate the trust with long-term thinking and fair conduct and for the public to take responsibility for their finances and their physical and mental health.

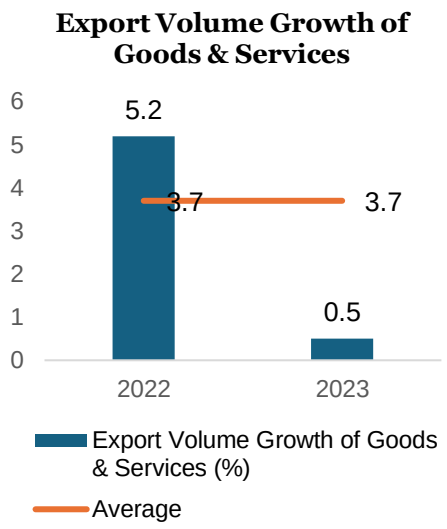
2. Indian Macro Economy Parameters

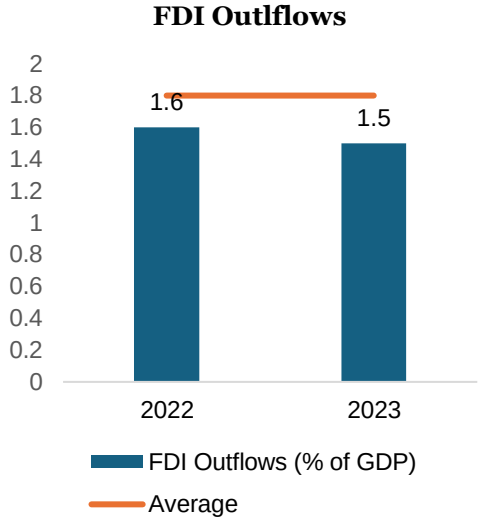
GLOBAL ECONOMIC SCENARIO:-

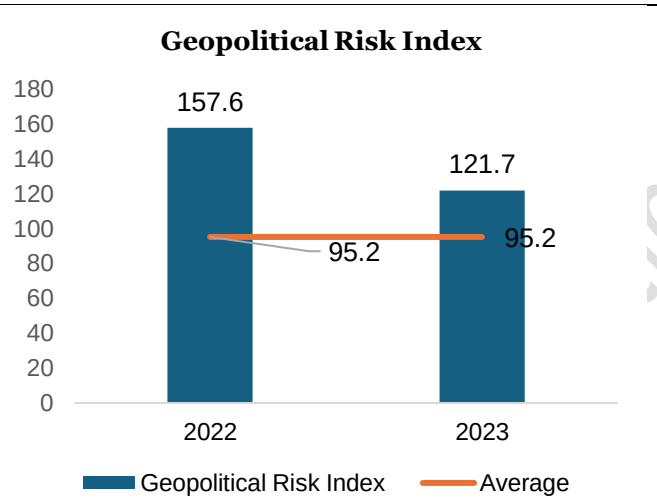
After a year marked by global uncertainties and volatilities, the global economy achieved greater stability in 2023. While uncertainty stemming from adverse geopolitical developments remained elevated, global economic growth was surprisingly robust. As per the World Economic Outlook (WEO), April 2024 of the International Monetary Fund (IMF), the global economy registered a growth of 3.2 per cent in 2023, though marginally lower than in 20222 and average for 2011-19 but higher compared to the projection of 2.8 per cent as per the April 2023 WEO5 . The context in which the growth of 3.2 per cent in 2023 has been achieved is markedly different compared to the 2011-19 period. Inflationary pressures have been significantly higher on account of the persistence of core inflation. Global trade moderated due to rising geopolitical tensions, cross-border restrictions and slower growth in advanced economies (AEs). The muted trade growth occurred despite the easing of supply chain pressures. Further, geopolitical developments and monetary policy changes across countries resulted in increased caution among investors, culminating in moderation in foreign direct investment (FDI) flows.

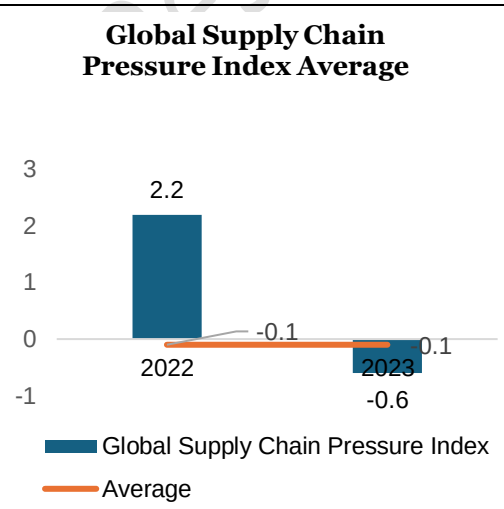




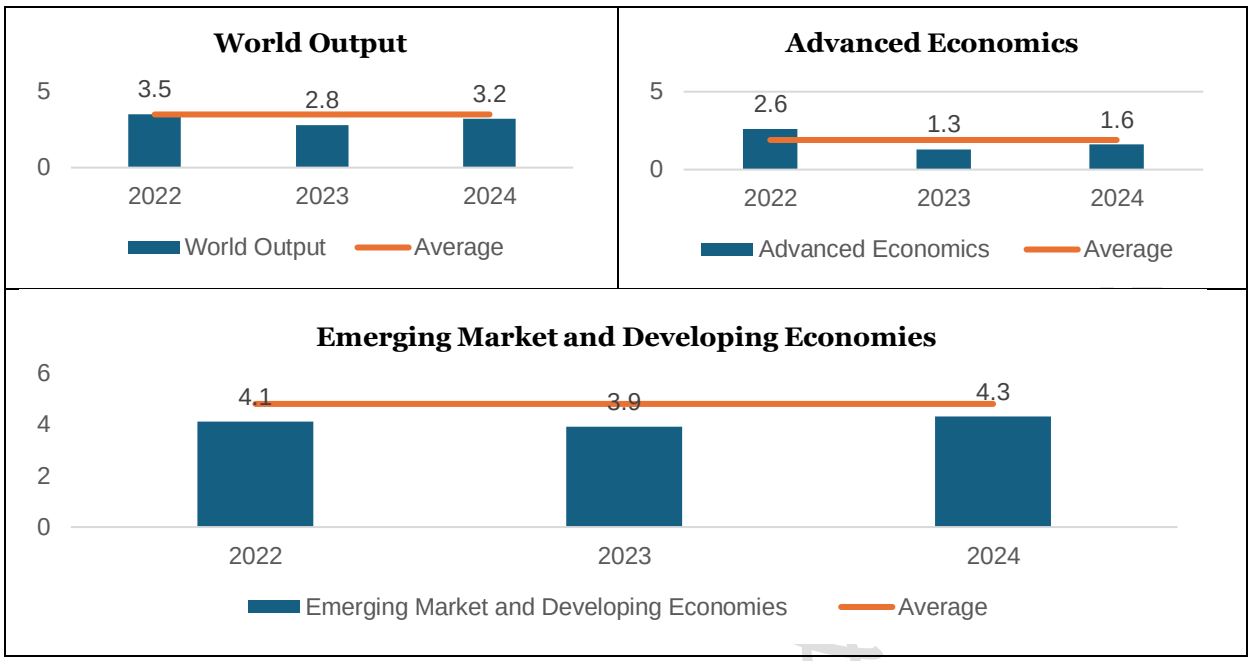

Export Volume Growth of Goods & Services
6
5
4
3
2
1
0
5.2
3.7
3.7
0.5
2022
2023
Export Volume Growth of Goods & Services (%)
Average


FDI Outflows
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.6
1.5
2022
2023
FDI Outflows (% of GDP)
Average


Geopolitical Risk Index
180
160
140
120
100
80
60
40
20
0
157.6
121.7
95.2
95.2
2022
2023
Geopolitical Risk Index
Average


Global Supply Chain Pressure Index Average
3
2
1
0
-1
2.2
-0.1
0.1
-0.6
2022
2023
Global Supply Chain Pressure Index
Average

Global economy registers strong growth

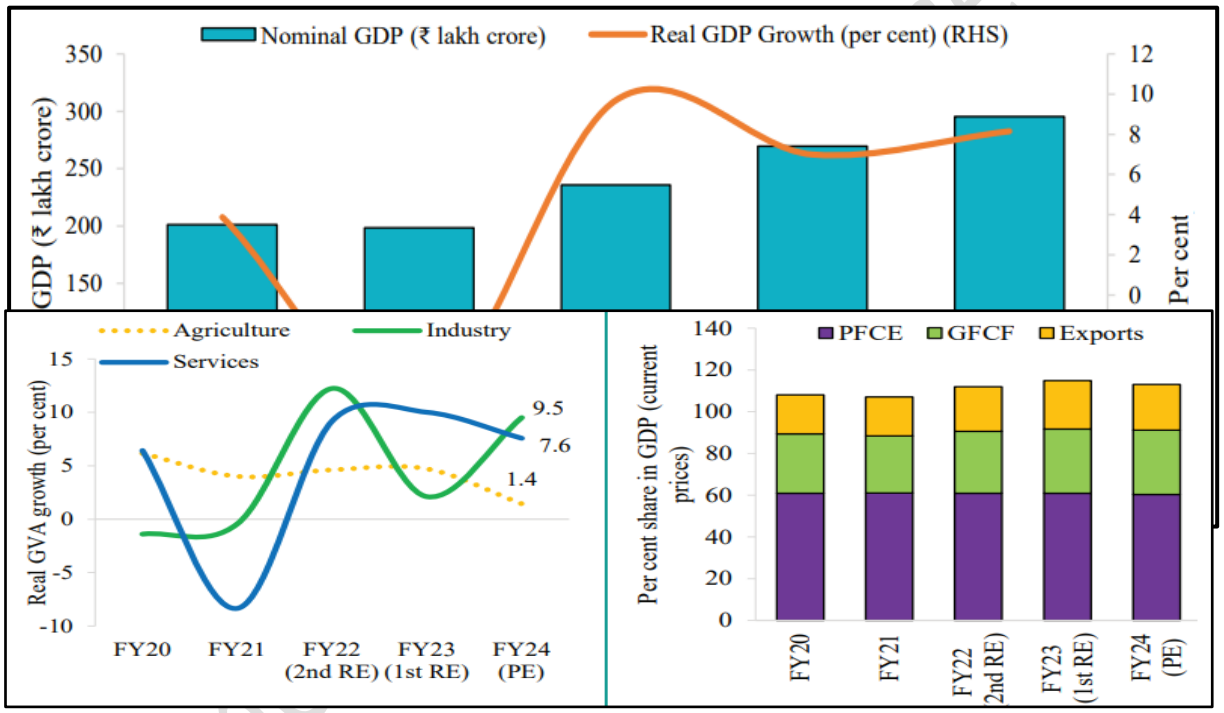


All major economies have surpassed pre-pandemic GDP levels:-

Country	Year in which crossed pre pandemic GDP (constant prices, national currency)	Ratio of GDP (constant prices, national currency) in 2023 to corresponding level in 2019
United States	2021	108
China	2020	120
France	2022	102
Germany	2022	101
United Kingdom	2022	102
Japan	2023	101
India	2021	120
Brazil	2021	107

Domestic Economy:-

India's economy carried forward the momentum it built in FY23 into FY24 despite a gamut of global and external challenges. The focus on maintaining macroeconomic stability ensured that these challenges had minimal impact on India's economy. As a result, India's real GDP grew by 8.2 per cent in FY24, posting growth of over 7 per cent for a third consecutive year, driven by stable consumption demand and steadily improving investment demand. On the supply side, gross value added (GVA) at 2011-12 prices grew by 7.2 per cent in FY24, with growth remaining broad-based. Net taxes at constant (2011-12) prices grew by 19.1 per cent in FY24, aided by reasonably strong tax growth, both at the centre and state levels and rationalisation of subsidy expenditure. This led to the difference between GDP and GVA growth in FY24.



The shares of the agriculture, industry and services sector in overall GVA at current prices were 17.7 per cent, 27.6 per cent and 54.7 per cent respectively in FY24. GVA in the agriculture sector continued to grow, albeit at a slower pace. Erratic weather patterns during the year and an uneven spatial distribution of the monsoon in 2023 impacted overall output. This is reflected in the marginal decline in total foodgrain output for FY24 of 0.3 per cent as per the third advanced estimate of foodgrain production released by the Ministry of Agriculture and Farmers' Welfare (MoAFW).

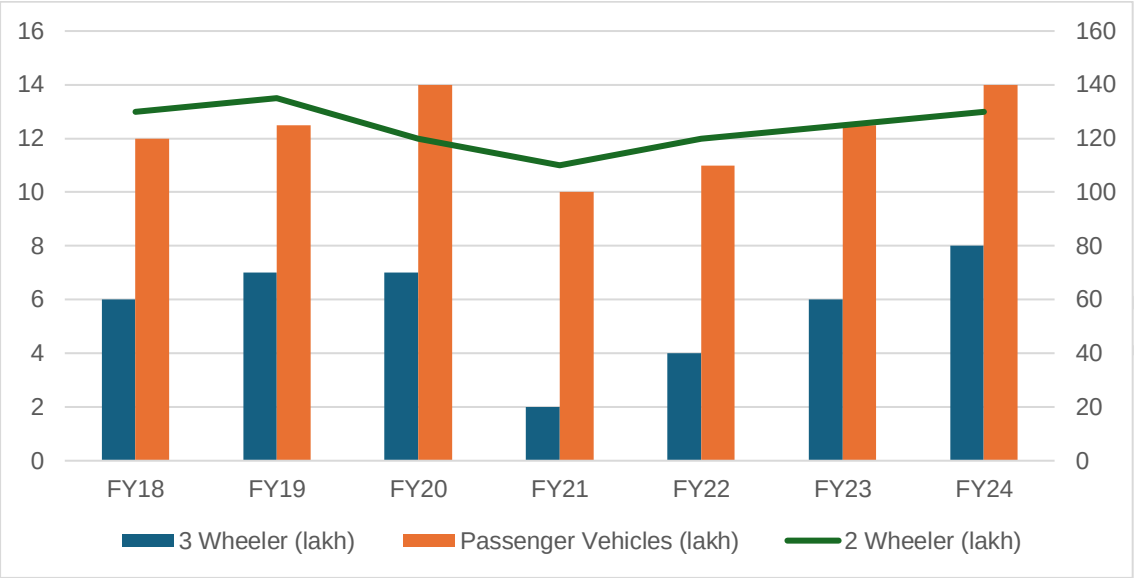
Gross fixed capital formation (GFCF)
Gross fixed capital formation (PFCE)

Within the industrial sector, manufacturing GVA shrugged off a disappointing FY23 and grew by 9.9 per cent in FY24. Manufacturing activities benefitted from reduced input prices while catering to stable domestic demand. The input price advantage was reflected in the subdued growth in the Wholesale Price Index (WPI) inflation, which led to a deflator of (-)1.7 per cent for the manufacturing sector during FY24. Manufacturers also passed on the reduction in input prices to consumers, reflected in the sustained decline in the core consumer price inflation. The strength of manufacturing is further corroborated by the strong performance of the HSBC India PMI for manufacturing, which consistently remained well above the threshold value of 50, indicating sustained expansion and stability in India's manufacturing sector. Construction activities displayed increased momentum and registered a growth of 9.9 per cent in FY24 due to the infrastructure buildout and buoyant commercial and residential real estate demand.

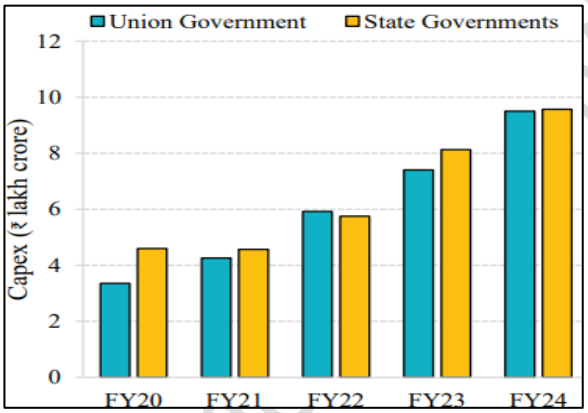
Various high-frequency indicators reflect the growth in the services sector. Both Goods and Services Tax (GST) collections and the issuance of e-way bills, reflecting wholesale and retail trade, demonstrated double-digit growth in FY24. Financial and professional services have been a major driver of growth post the pandemic. Contact-intensive services—prominently trade, transport, real estate and their ancillary services that were impacted the most during the pandemic have emerged much stronger in the post-pandemic period, embedding greater technology and digital content in them and transforming the nature of the service delivery in India. The proliferation of global capability centres (GCCs) has also imparted resilience to India's services exports, giving further thrust to the sector.

On the demand side, private consumption has been a crucial and steadfast cog in the GDP growth. Private final consumption expenditure (PFCE) grew by 4.0 per cent in real terms in FY24. Urban demand conditions remain strong, as reflected in various urban consumption indicators such as domestic passenger vehicle sales20 and air passenger traffic21. It is also reported that rural consumption growth has gradually picked up pace during the quarter ending March 2024.22 As per the Federation of Automobile Dealers Associations, two and three-wheeler and passenger vehicle sales also registered an uptick in FY24.

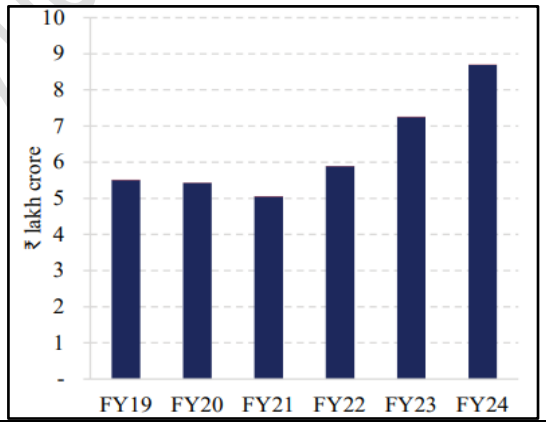
Vehicle sales in rural areas have recovered smartly since the pandemic:-



Greater general government focus on building productive capacities:-



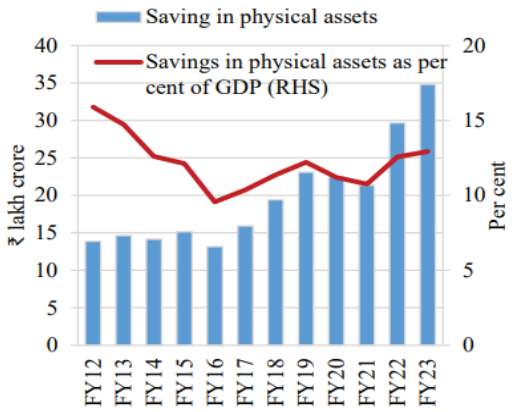
Steadily rising private corporate capex:-



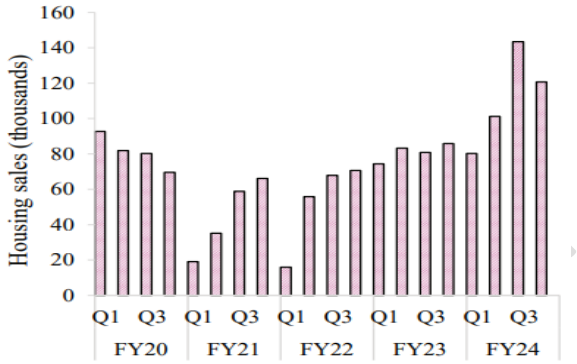
Apart from private corporations, households have also been at the forefront of the capital formation process. The growth in housing sales in cities has been particularly impressive, indicating that urban households are diversifying the deployment of their savings. In 2023, residential real estate sales in India were at their highest since 2013, witnessing a 33 per cent YoY growth, with a total sale of 4.1 lakh units in the top eight cities. As per real estate research firm Proptiger, new supply witnessed an all-time high, with 5.2 lakh units launched in 2023, as against 4.3 lakh units in 2022. The momentum continued in Q1 of 2024, witnessing record breaking sales of 1.2 lakh units, clocking a robust 41 per cent YoY growth. New supply has consistently exceeded one lakh units since Q2 of 2022, underscoring persistent demand-supply dynamics in the housing market.

With cleaner balance sheets and adequate capital buffers, the banking and financial sector is well-positioned to cater to the growing financing needs of investment demand. Credit disbursal by scheduled commercial banks (SCBs) to industrial micro, small and medium enterprises (MSMEs) and services continues to grow in double digits despite a higher base. Similarly, personal loans for housing have surged, corresponding to the increase in housing demand. However, credit offtake by large industries seems to be growing at a lower albeit stable pace. These larger industries seem to be tapping the corporate bond market. Corporate bond issuances in FY24 were up by 70.5 per cent, with private placement remaining the preferred channel for corporates. Outstanding corporate bonds were up by 9.6 per cent (YoY) as of the end of March 2024.

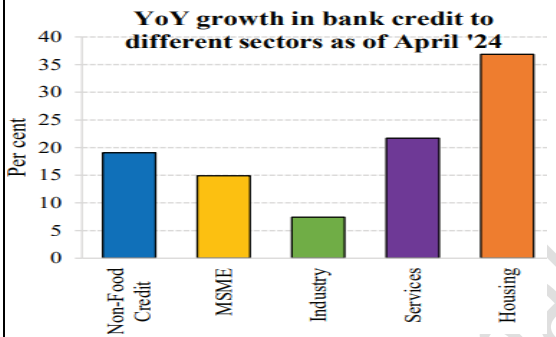
Increased household savings in the form of physical assets



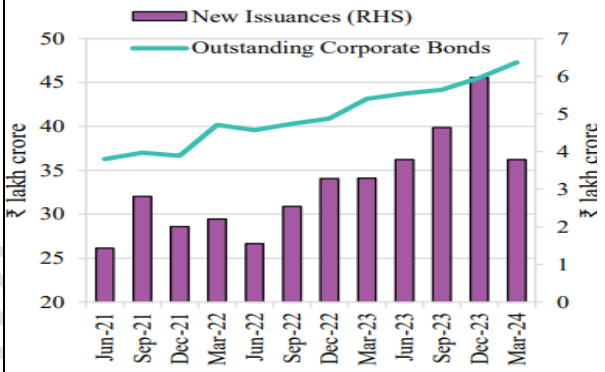
Record housing sales in top 8 cities



SCBs catering to investment demand



Large corporates tapping corporate bond markets

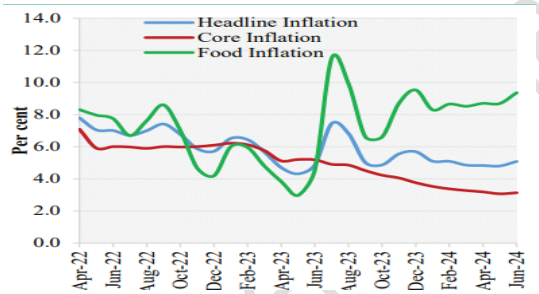


Global trade growth slowed in 2023, leading to a marginal decline in merchandise exports growth. As merchandise imports slowed more than exports and services trade recorded a larger surplus compared to the year before, the drag exerted by net exports on GDP reduced. The subdued contribution of exports was more than counterbalanced by the pick-up in fixed investment, thereby continuing the trend of domestic stimulus seamlessly replacing external stimuli.

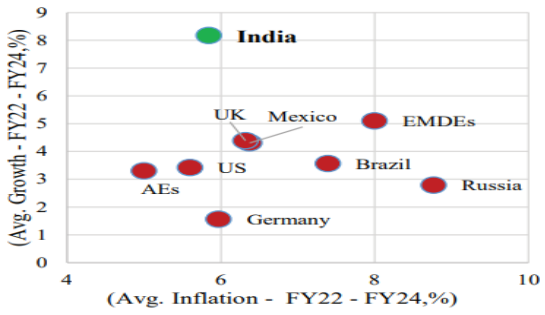
Moderation in inflation pressure:-

Despite global supply chain disruptions and adverse weather conditions, domestic inflationary pressures moderated in FY24. After averaging 6.7 per cent in FY23, retail inflation declined to 5.4 per cent in FY24. This has been due to the combination of measures undertaken by the Government and the RBI. The Union Government undertook prompt measures such as open market sales, retailing in specified outlets, timely imports, reduced the prices of Liquified Petroleum Gas (LPG) cylinders and implemented a cut in petrol and diesel prices. The RBI raised policy rates by a cumulative 250 bps between May 2022 and February 2023. It also managed liquidity levels efficiently and maintained consistent and coherent communication with market participants. Even as higher policy rates are transmitted through the system, the RBI continues to support growth with adequate liquidity, thereby ensuring that inflation is headed to the target of 4 per cent on a durable basis. The effects of these measures are reflected in the latest data on CPI inflation – headline CPI inflation of 5.1 per cent in June 2024, and core inflation declined to 3.1 per cent. Consequently, India was the only country amongst its peers to traverse a high-growth and low-inflation path in the period FY22 – FY24 (Chart I.53). This is despite the fact that there were pressures on the food inflation front, driven by adverse weather conditions.

Declining core inflation but volatile food inflation



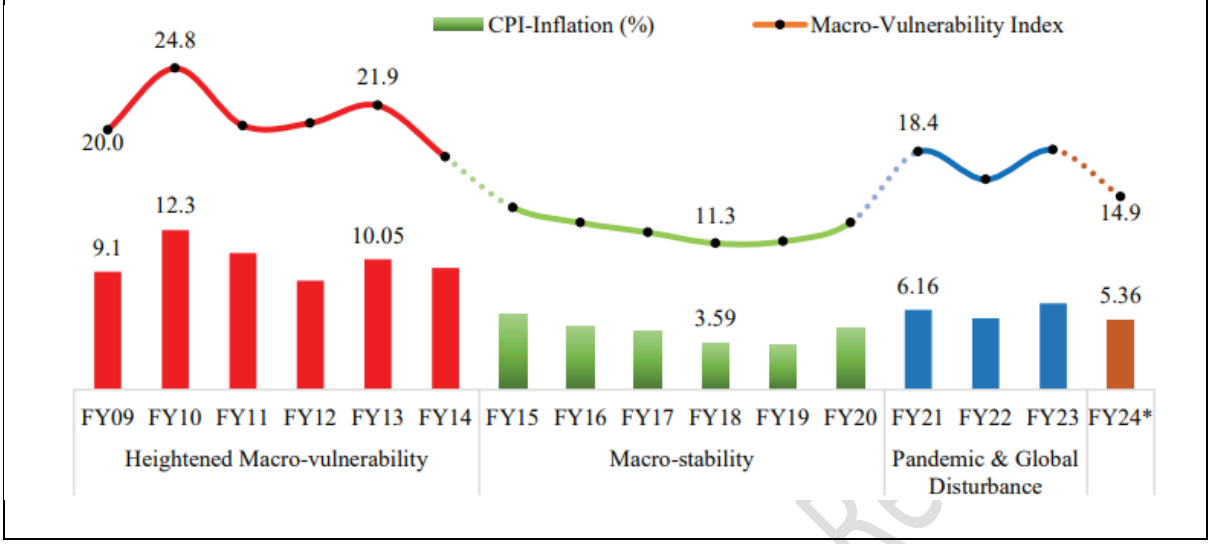
India a high-growth and low-inflation economy



Reduction in macro vulnerability

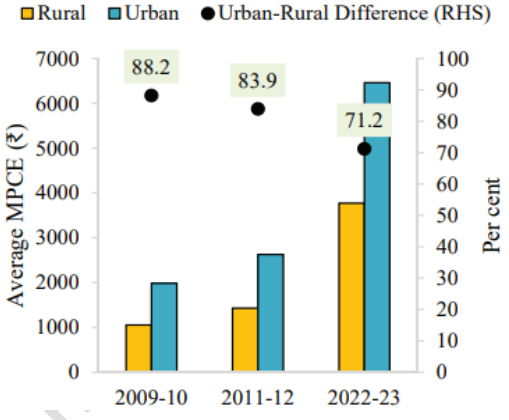
In its pursuit of fiscal consolidation through efficient and prudent fiscal management, the Government continues to stick to the fiscal glide path. The fiscal deficit of the Government is expected to drop to 4.5 per cent of GDP or lower by FY26. This commitment has helped keep the sovereign debt sustainable, thereby keeping sovereign bond yields and spreads in check. All these factors have combined to keep the macroeconomic environment stable and provide a platform for sustainable growth. This is reflected in the downward trajectory of the macroeconomic vulnerability index – an index constructed by combining India's fiscal deficit, CAD and inflation.

A reduction in macro-vulnerability despite increased external uncertainty:-

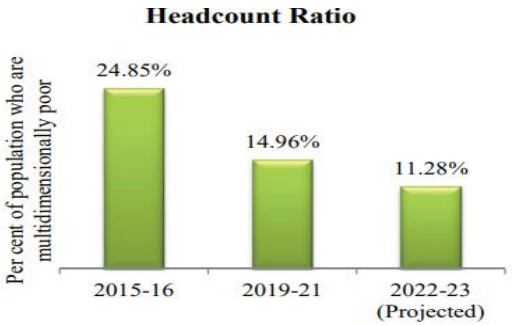


The initiatives in the social sector have also translated into rising consumption spending, as evident from the results of the latest Household Consumption Expenditure Survey (HCES) 2022-23. The HCES throws many reassuring findings on inclusive growth in the past decade. The monthly per capita consumption expenditure (MPCE) in 2022-23 increased in real terms in both rural and urban areas over 2011-12. The difference between rural and urban MPCE also declined in percentage terms.

Reduced rural-urban inequality



Population that is multidimensionally poor has declined



OUTLOOK:-

The Indian economy recovered swiftly from the pandemic, with its real GDP in FY24 being 20 per cent higher than the pre-COVID, FY20 levels. This meant a CAGR of 4.6 per cent from FY20, despite a 5.8 per cent decline in FY21 inflicted by the pandemic. Analysis in this chapter shows that the current GDP level is close to the pre-pandemic trajectory in Q4FY24. During the decade ending FY20, India grew at an average annual rate of 6.6 per cent, more or less reflecting the long-run growth prospects of the economy. This is the background against which we can see the prospects for FY25.

IMF projects the global economy to grow at 3.2 per cent in 2024, with risks being broadly balanced. The average annual global growth was 3.7 per cent during the decade ending FY20. Inflationary pressures have moderated in most economies with declining global commodity prices and easing of supply chain pressures. However, core inflation remains sticky and driven by high service inflation. Many central banks have hinted at the peaking of the interest rate hike cycle. The ECB has already cut the policy rate, while the Fed has hinted at reducing the rate in 2024. If the services inflation across economies moderates faster, that may allow central banks to bring forward the monetary policy easing cycle earlier than currently anticipated. A likely reduction in policy rates by central banks of AEs, especially the Fed, will open the space for central banks of EMEs to follow the lead, bringing down the cost of capital.

On the downside, any escalation of geopolitical conflicts in 2024 may lead to supply dislocations, higher commodity prices, reviving inflationary pressures and stalling monetary policy easing with potential repercussions for capital flows. This can also influence RBI's monetary policy stance. The global trade outlook for 2024 remains positive, with merchandise trade expected to pick up after registering a contraction in volumes in 2023. Conversely, increased fragmentation along geopolitical lines and renewed thrust on protectionism may distort merchandise trade growth, impacting India's external sector. Global financial markets have scaled new heights, with investors betting on global economic expansion. However, any corrections in the elevated financial market valuations may have ramifications for household finances and corporate valuation, negatively impacting growth prospects. Hiring in the information technology sector had slowed down considerably in FY24, and even if hiring does not decline further, it is unlikely to pick up significantly. However, leveraging the initiatives taken by the government and capturing the untapped potential in emerging markets, exports of business, consultancy and IT-enabled services can expand. Despite the core inflation rate being around 3 per cent, the RBI, with one eye on the withdrawal of accommodation and another on the US Fed, has kept interest rates unchanged for quite some time, and the anticipated easing has been delayed.

Domestic growth drivers have supported economic growth in FY24 despite uncertain global economic performance. Improved balance sheets will help the private sector cater to strong investment demand. A note of caution is warranted here. Private capital formation after good growth in the last three years may turn slightly more cautious because of fears of cheaper imports from countries that have excess capacity. While merchandise exports are likely to increase with improving growth prospects in AEs, services exports are also likely to witness a further uptick. A normal rainfall forecast by the India Meteorological Department and the satisfactory spread of the southwest monsoon thus far are likely to improve agriculture sector performance and support the revival of rural demand. However, the monsoon season still has some ways to go. Structural reforms such as the GST and the IBC have also matured and are delivering envisaged results. Considering these factors, the Survey conservatively projects a real GDP growth of 6.5–7 per cent, with risks evenly balanced, cognizant of the fact that the market expectations are on the higher side.

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3. Tarpaulin product and its applications

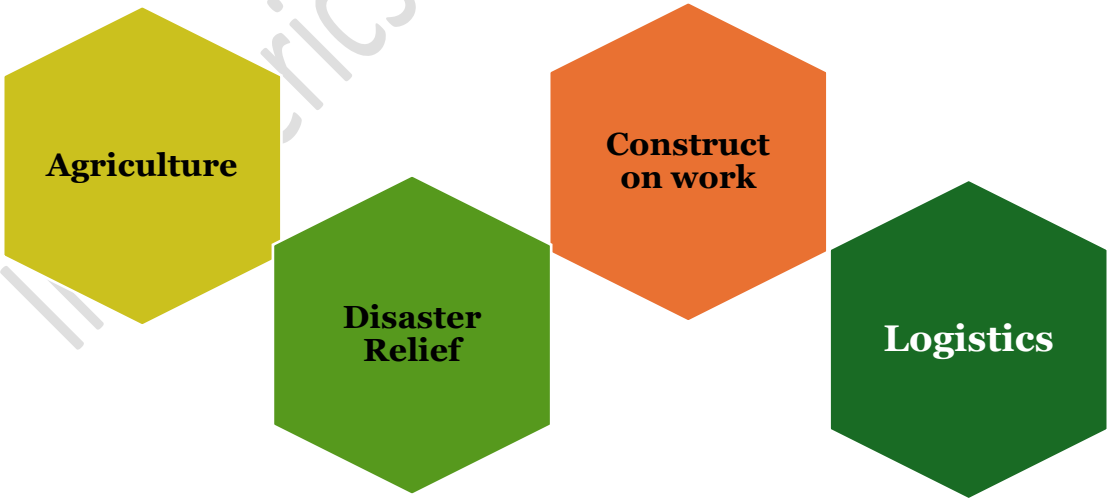
Introduction:-

Tarpaulin or tarp is a large sheet of solid, flexible, waterproof or waterproof material, usually fabric or polyester wrapped in polyurethane, or made of polyethylene-like plastics. This is called PP-HDPE Tarpaulins which is produced from premium quality woven PP-HDPE Fabric laminated with LDPE on both sides. Tarpaulin is large sheet of solid, flexible, waterproof or waterproof material, usually fabric or polyester wrapped in polyurethane, or made of polyethylene-like plastics.

Unique Features of PP/HDPE Tarpaulin:-

- Available in various sizes
- Available in various colours
- Light Weight, Strong and durable
- UV, water and crack resistant
- Available in Heavy, Medium and light quality
- Shiny Surface
- Dimensional Accuracy

Application of PP/HDPE Tarpaulin in Various Field: -



Sector wise application of Tarpaulin Sheet in details: -

Agriculture Sector:-

1. Protecting Crops from Weather Extremes:-

Weather can be unpredictable and often harsh, posing significant risks to crops. Tarpaulin sheets serve as an excellent protective barrier against extreme weather conditions such as heavy rain, hail, frost, and intense sunlight. By covering crops with tarpaulins, farmers can mitigate damage and ensure a more stable growing environment. This protective measure is particularly crucial for delicate crops like fruits, vegetables, and flowers, which are highly susceptible to weather-related damage.

2. Fumigation Cover:-

Fumigation Covers that are highly demanded because of weather-resistant and durable attributes. These fumigation sheets are essentially used for protecting food grains, cereals, rice fumigation and other raw materials from erratic weather conditions in open space. Fumigation covers are used in Rice/Pulse mills, Tobacco drying, cashew processing units, oil mills, flour mills, cotton mills, sugar factories. In some parts of India, it is used as hay covers also.

4. Post-Harvest Handling and Storage:-

The period after harvesting is crucial for ensuring the quality and longevity of crops. Tarpaulin sheets play a vital role in post-harvest handling by providing a clean, dry surface for sorting and drying crops. For instance, grains and pulses can be spread out on tarpaulins to dry before being stored. Additionally, tarpaulins can cover harvested crops to protect them from rain and pests, thus minimizing post-harvest losses.

5. Creating Temporary Shelters

In agricultural settings, there is often a need for temporary structures, whether for storing equipment, sheltering livestock, or providing shade for workers. Tarpaulin sheets are ideal for constructing these temporary shelters due to their ease of use and portability. These structures can be quickly assembled and dismantled, providing flexible solutions for various on-farm needs.


6. Enhancing Livestock Management

Livestock farming benefits significantly from the use of tarpaulin sheets. They can provide shade and shelter for animals, protecting them from extreme weather conditions. Tarpaulins are also used to create enclosures or pens, which can be particularly useful during events such as calving or lambing. By providing a controlled environment, tarpaulins help ensure the well-being of livestock and improve overall farm productivity.


7. Mulching

Mulching is a technique used to conserve soil moisture, regulate soil temperature, and improve fertility. Tarpaulin sheets can serve as an effective mulching material. By covering the soil around plants, tarpaulins reduce evaporation, suppress weed growth, and provide a more favorable microclimate for plant growth. This practice is especially beneficial in areas with limited water resources.


8. Silage and Fodder Management

For farmers involved in dairy or beef production, ensuring a steady supply of quality fodder is essential. Tarpaulin sheets are used to cover silage pits, protecting the fodder from moisture and spoilage. This helps maintain the nutritional value of the fodder, ensuring that livestock have access to high-quality feed throughout the year.

9. Rain water harvesting:-

Gathering rainwater is a great way to conserve water. The collected rainwater can be used for irrigation, washing, and non-potable uses. Adding filter the collected water can give clean water in an emergency.

Construction Sector:-

Use of tarpaulins in construction and buildings:-

Tarpaulins can be useful in construction and building projects. Building materials and equipment are left outside and exposed to the elements. It can increase the cost of construction due to damage of materials. Rainwater can create problems for construction sites as heavy rain can damage the newly formed buildings. By covering roofs and walls with tarpaulins workers can continue their work without interruptions.
Construction sites are often filled with debris and dust which can be problematic and hazardous. By hanging tarpaulins around the site workers can work safely.

Use of Tarpaulin in Logistics:-

Tarpaulins or tarps are the absolute most vital items for the transport sector. Tarpaulins are waterproof and weatherproof sheets of texture that incorporate the utilization of substances like acrylic, polyvinyl chloride (PVC), polyethylene, and polyester. They shield the cargo from harsh weather conditions like downpour, wind, dust, sun, and whatever other element that might influence the consignment during transportation. Continue perusing to figure out why tarping is an essential piece of transportation businesses.

Weather Protection for Goods: -

Another advantage that can be derived from the utilization of tarpaulin is the protection it offers from unfavourable weather conditions. While moving goods in uncovered trailers, railway carriages, or vessels, harsh weather like downpour or tempests can influence the things that have no protection. Items like grains, fertilizers, machinery, and so on can get contaminated by water and may foster form or rust. The utilization of high-quality tarpaulin gives a waterproof cover to them. It verifies that goods get to their objections without being presented to dampness and other unfavourable conditions. This minimizes misfortunes for the transporters and on a similar note increases the degree of fulfilment for the customers.

Protect Freight in a Shield from Dust and Debris:-

Cargo gets contaminated during transit by dust, dirt, leaves, bird droppings, or whatever other debris which might bring down the quality of the consignment. For instance, texture rolls transported transparently can interact with contamination agents. The substance packs might get contaminated with pollutions because of contact. Tarp sheets help to form a spotless climate over the freight. This prevents cross-contamination and maintains the material's immaculateness. They are essential in getting cargo on open vehicles across construction areas or harsh terrains.

Offer Protection Against UV Radiation

Items like texture, plastic, rubber, and so on can blur or be obliterated when they are presented to ultraviolet light. This is finished by covering them with hazy tarpaulin

sheets which guarantee that they get no daylight. This jelly the properties of a thing and shields it from blurring of color or the advancement of breaks. It adds to conveying the merchandise in great shape that can be utilized or consumed by the beneficiary. Tarps are, nonetheless, very essential while handling UV-touchy goods during transport over long distances in the tropical area.

Enable Various Loading Options

Heavy Duty Tarpaulin sheets enable transporters to stack various shipments in different directions relying upon the circumstance. Open trucks can stack up products to the rooftop level assuming that the goods are covered well with great quality tarpaulin. It considers the transport of huge non-conforming massive cargo that overhangs vehicles. Tarps are utilized to shield such adaptable formations from antagonistic weather conditions. Its adaptability assists transporters with transporting a wide range of cargo effectively. This enhances load bearing and efficiency of work done by the staff.

Protection from Theft and Vandalism

Cost from theft and vandalism is felt by transport companies through the deficiency of their goods and property. The hoodlums consistently go for the cargo that has been stopped especially during the ends. Vandals likewise obliterate goods in transit as a demonstration of rebellion. One of the actions that are useful in preventing freight theft is covering the freight with a durable tarp. This disguises the great from the public area. The equivalent likewise applies to cargo when it is covered with tarps since it becomes hard to get to it without drawing the consideration of other individuals. The additional necessary effort to prevent such occurrences lessens theft and vindictive activities.

Are Cost-Effective

Purchasing quality tarpaulin suits for transporters is cost-effective for the companies. Because of the long assistance time when utilized appropriately, tarps have a great cost-to-help proportion. The protective characteristics of tarps additionally guard against likely enormous and costly misfortunes to the clients' shipments. This helps transporters in staying away from issues like remuneration claims and legitimate cases. This is worth it for tarps in contrast with the misfortunes that are prevented a few times over.

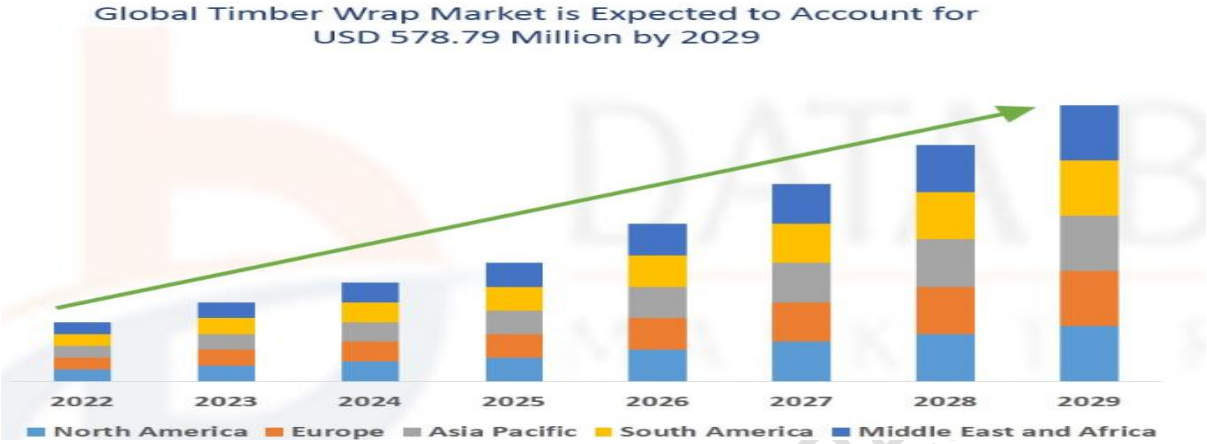
Eco-Friendly Advantage:-

Today, most tarpaulins are delivered from reused plastic materials or synthetic texture. They are reusable and recyclable once their life expectancy is finished. It is hence applicable to sustainable operations for the climate for those engaged with the transportation business. They help with keeping away from wastage by maintaining the condition of freight. This encourages eco-friendly transport systems.

Use of Tarpaulin in Lumber wrapping:-

Lumber wraps have most definitely become an essential product in the timber industry. Whether it is for transition, long-term storage or packaging lumber, joists, and other wood products, lumber wraps are a cost-effective product of modern technology. Made of reinforced polyethylene scrim laminated to Kraft paper on the back and coating the upper side with polyethylene, lumber wraps help you to protect your wood as the same day it was cut. Tear-resistant, strong and durable is lumber wraps preserving your timber from harsh environmental conditions. And these are specially designed to bear the abrasions and transit damages. Read further for a descriptive introduction for lumber wraps we available at the market.

Global Timber Wrap Market, By Product Type (HDPE Wrap Films, LDPE Wrap Films, PP Wrap Films), Application (Timber Manufacturer, Timber Wholesaler, Others) – Industry Trends and Forecast to 2029.



The timber wrap market was valued at USD 407 million in 2021 and is expected to reach USD 578.79 million by 2029, registering a CAGR of 4.50% during the forecast period of 2022 to 2029. The market report curated by the Data Bridge Market Research team includes in-depth expert analysis, import/export analysis, pricing analysis, production consumption analysis, patent analysis and technological advancements.

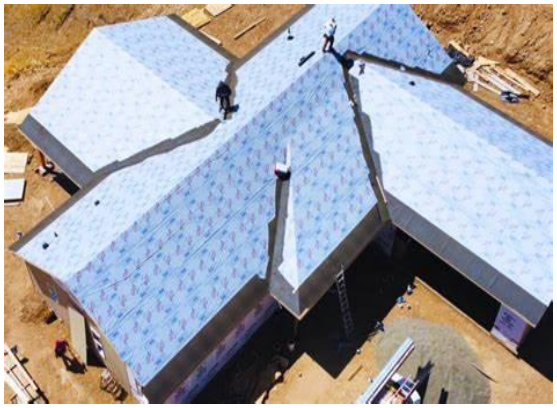
Tarpaulin Sheets in Disaster Relief Efforts:-

At the point when there is a calamity like hurricanes, floods, or quakes disaster relief

organizations and relief bunches are on the ground to offer assistance in delivering the necessary things to the affected areas. Another unquestionable requirement yet not-really notable piece of unit is the all-around Tarpaulin. Tarpaulins, or tarps as they are here and there called, can be used in a range of capacities that make them a useful tool for crisis reaction faculty. Here are a portion of the top ways relief laborers can use tarps while providing disaster assistance:

Shelter Construction:-

Shelter is one of the main necessities with regards to any kind of calamity that may have struck. On the off chance that houses are obliterated or have damaged rooftops, the tarp can assist with providing temporary shelter. In the shelter, molding worked on waterproof covers for the opening in the rooftop by pulling on the tarpaulin can be used. They can also be used to make temporary shelter by stretching them between trees or other temporary poles to create some type of shelter. The generally used industrial-grade tarps are made of a water-resistant fabric that safeguards inhabitants and assets from outside components. Great rope and stakes are expected to appropriately make the tarps into tangible designs that can be used in the construction of shelter.



Debris Coverage:

After natural disasters like storms, floods, and the like, there will always be a massive accumulation of waste items occasioned by the calamity. At the point when this waste is inappropriately discarded, it may include sharp articles like shattered glass, nails, spoilt staples, chemicals, and many others. In outrageous cases, where the debris heaps are near houses, the tarps can be placed over the debris to protect the surrounding areas. This minimizes the chance of bacteria from decay to spread and also guarantees that no harm comes from chemicals present in the environment. It also assists with shielding occupants, humanitarian, and volunteering work force from getting in touch with hazardous debris as the most common way of clearing up goes on.

Medical Facility Partitions:-

At the point when disasters happen, and there is a need for the construction of a crisis medical treatment facility, the use of tarps can transform open areas into legitimate treatment settings. The chance of small hospitalization can be arranged by suspending the tarps on ropes or a portable framework to create division. This may involve isolation wards, wards for sorting incoming patients, drug dispersion focuses, medical procedure rooms, and so on. The non-permeable nature of such tarps makes them helpful with regards to cleaning since one has to guarantee cleanliness in clinical settings including the makeshift ones.

Supply Protection:-

An organization providing food, medicine, and other essential things is crucial in disaster-stricken areas where the infrastructure is affected. These essentials have to be safeguarded by relief organizations while in transit and during dispersion as well as after they have arrived at the destination point. Free Tarps, for example, can be used as covers for pallets of perishable food varieties, boxes of medical supplies, and so on. Legitimate coverage safeguards the provisions from acquiring unnecessary soil, rain, wind or sun which may affect the provisions during the mobilization of the relief.

Ground Moisture Barriers:-

It is in this manner critical that areas of operation are definitely monitored and organized so as not to be overwhelmed by rain, flooding, or any abundance moisture throughout disaster relief. For functional spaces that need to remain functional, the tarps can be laid on the ground and anchored to the ground with stakes or loads to assist with holding them in place. The tarp moisture barrier can be placed on top of gravel or pallets which may be put down initially for a superior layer of drainage. It opens up dry ground for disaster reaction teams to walk on instead of sinking into the mud as well as making areas that are clean for cooking, treating the wiped out, and so on.

Water Collection Systems:-

Certain individuals don't have access to clean water regularly and in the event that storms or floods affect the wellspring of water, it turns into a truly valuable component. There are several ways where Heavy Duty Tarpaulin can be made to allow one to harvest new rainwater that falls on them. In the event that a tarp is extended in a somewhat like an Angular shape, the water on it is allowed to stream down into the collection barrels or tanks. The material of the container is impermeable to guarantee that all the water gathered is channeled straightforwardly to the base tank. The water from this technique isn't instantly safe for drinking yet on the off chance that gathered in large quantities it will go a long way to give reasonable crisis water supplies.

Outdoor Benefits of Tarpaulin Cover:-

1.Covers Outdoor Furniture and Equipment: -

Tarpaulin sheets are the best choice to cover outdoor furniture and elements. In case we need to store our equipments or furniture in a shed, we must cover them with tarp sheets to keep them clean and rid of dirt. We can choose the suitable color that matches our outdoor decor. These sheets also help in covering boats while they’re not in use.

2. Create Temporary Tents and Shelters:-
If we are planning for a camping trip, or there is a necessity of temporary shelter in case of emergency or an outdoor event, tarpaulin tents come as the first choice. The only thing needed is trees to tie the tarp tent.
Since it is light weight, it is easy to carry in hand for transportation. We can just fold and use it when needed. Additionally, we may also use it for any wedding or celebration events. If we need to organize a party, we can provide shelter for guests as a matter of relaxation.

3. Build a Slip and Slide
If we want to play a fun activity with kids or family during a trip, we need tarpaulin sheet, hose, and soap. We must wet it with a hose and make it slippery using soap. We can use it for hours to have fun with kids playing slip and slide. Apart from this, we can use tarp sheets, water balloon fights and other outdoor activities.

4. Protecting Floors During Renovation
When we need to renovate our home or office, we can use tarpaulin sheets to cover our floors or carpets. In that case we may just lay a tarpaulin sheet on the floors to prevent them from scratches and food spills. This applies to the case of painting also. If the sheet becomes dirt, we can just clean them by wiping them down with a cloth and dry it.

5. Cover Firewood and Storage
If we are carrying any firewood equipment, covering, and storing them in a tarpaulin sheet makes it safe and dry. They also serve as covering for hot tubs and pools during unfair seasons.

6. Create a Waterproof Picnic Blanket
If we are going for a picnic, we can just lay down the sheet in addition to pillows for comfortable seating. In addition to this, tarp sheets also helps during outdoor concerts.

7. Installing Outdoor Arts
In the hands of an artist, sheets can be painted and shaped for creating benches, chairs, and table elements.

8. Used for Agriculture and Gardening
A farmer or gardener can use tarpaulin sheets to protect gardens and crops from pests.

4. Petrochemical sector and Orientation of Tarpaulin product:-

Petrochemicals are derived from various chemical compounds, mainly from hydrocarbons. These hydrocarbons are derived from crude oil and natural gas. Among the various fractions produced by distillation of crude oil, petroleum gases, naphtha, kerosene and gas oil are the main feed-stocks for the petrochemical industry. Ethane and natural gas liquids obtained from natural gas are the other important feed stocks used in the petrochemical industry. Olefins (Ethylene, Propylene & Butadiene) and Aromatics (Benzene, Toluene & Xylenes) are the major building blocks from which most petrochemicals are produced.

Petrochemical manufacturing involves manufacture of building blocks by cracking or reforming operation; conversion of building blocks into intermediates such as fibre intermediates (Acrylonitrile, Caprolactum, Dimethyl Terephthalate/Purified Terephthalic Acid, Mono Ethylene Glycol); precursors (Styrene, Ethylene Dichloride, Vinyl Chloride Monomer etc.) and other chemical intermediates; production of synthetic fibres, plastics, elastomers, other chemicals and processing of plastics to produce consumer and industrial products.

POLYMER:-

Polymers account for around 70% of petrochemicals and that is the reason that they are the most important constituent of the Indian chemical industry. Polymers are essentially used in the manufacture of various plastic products. Polymers find major applications in packaging for preservation of food articles, molded industrial and home appliances, furniture, extruded pipes etc.

PERFORMANCE OF THE POLYMER INDUSTRY IN INDIA

The Polymers Market size is expected to reach US$790 billion by 2027, after growing at a CAGR of 5.5% during the forecast period 2022-2027. Polymers are a broad range of materials produced from small molecules called monomers. They form a long chain after bonding. Plastics are also referred to as polymers as these are manufactured using polymers. Polymers can be classified into natural polymers, semi-synthetic polymers and synthetic polymers. Based on structure, polymers can be categorized into linear polymers, cross-linked polymers and branched-chain polymers. These are extensively used in textiles, packaging, aircraft, bottles, trays, toys and many other applications. According to the US Bureau of Economic Analysis, the output of textile manufacturing in the US in 2019 was US$18.79 billion which was 23.8% more than the numbers in 2009. Thus, the growth in such end-use industries is boosting its market growth.

The various by-products of polymers are:

- ✓ Polystyrene
- ✓ PVC
- ✓ Polypropylene
- ✓ LDPE/ LLDPE
- ✓ HDPE

Polystyrene, a by-product of polymers, has a 1,216.70 U.S. dollars per metric ton market size. The global polystyrene market size is expected to grow from $28.46 billion in 2021 to $30.77 billion in 2022 at a compound annual growth rate (CAGR) of 8.1%. The global polystyrene market size is expected to grow to $38.49 billion in 2026 at a CAGR of 5.8%.

India Polystyrene market demand stood at 0.34 Million Tonnes in FY2021 and is forecast to reach 0.52 Million Tonnes by FY2030, growing at a healthy CAGR of 4.73% until FY2030. Its market price is Rs. 104 per kg as of 2022. The major companies involved in the production of polystyrene are Rajasthan Polymers, McDowell & Co., and Supreme Petrochem. The total capacity of PVC in India is around 1640 KTA with Reliance Industries holding the maximum share in its production.

This segment has been growing at the rate o , growing at a healthy CAGR of 4.73% until FY2030. Around 40% of PVC is used in the manufacturing of pipes and 14% is used in the production of cable sheathing. The cost of PVC is Rs 147/kg in 2022.

Polypropylene is a very lightweight polymer and that is the main reason why it is used as a substitute for various other polymers. India imported 217,030 shipments polypropylene in the year as of August 2022. The price of natural polypropylene is between 72-85 per kg while 63 per kg for non-woven polypropylene. It is mainly used in the manufacture of injection moulding, BOPP, ropes and twines.

In India, low-density polyethylene (LDPE) and linear low-density polyethylene (LLDPE) are also widely used polymers. India Low Density Polyethylene (LDPE) market demand stood at 0.83 Million Tonnes in FY2021 and is forecast to reach 1.64 Million Tonnes by FY2030, growing at a healthy CAGR of 7.86% until FY2030. India Linear Low-Density Polyethylene (LLDPE) demand stood at 2.0 Million Tonnes in FY2022 and is forecast to reach 3.70 Million Tonnes by FY2030, growing at a healthy CAGR of 8.20% until FY2030.

More than 50% of LDPE/ LLDPE is used by the packaging industry and they are priced at Rs. 92 Per kg in 2020. The companies which make LDPE/ LLDPE are Oswal, RIL, and IPCL. The second most used polymer in India s HDPE, with a share of 22%. The value of its domestic consumption is 2,123 crore and it is growing at the rate of 15% per year. HDPE is used in the manufacturing of raffia, blow moulding, injection moulding, and in

the paper industry as well. The companies involved in the production of HDPE are NOCIL, RIL, and IPCL.

Production of Tarpaulin:-

HDPE tarpaulins are made from a polymer called polyethylene, which is a thermoplastic material. The manufacturing process of HDPE tarpaulin involves melting the polyethylene pellets and extruding them through a die. The extruded material is then cooled and stretched to orient the polymer chains, which improves the strength and durability of the tarpaulin. The resulting material is then coated with a layer of LDPE (Low-density polyethylene) to improve its water resistance, and UV stabilizers are added to make the tarpaulin resistant to the sun's harmful rays.

Different Techniques Used in HDPE Tarpaulin Manufacturing

There are different techniques used in HDPE tarpaulin manufacturing, and each technique has its advantages and disadvantages. One of the most commonly used techniques is the blown film technique, where the molten polyethylene is blown through a circular die, resulting in a tubular structure. The tubular structure is then sliced, and the resulting flat sheet is rolled into a tarpaulin.

Another technique used in HDPE tarpaulin manufacturing is the cast film technique, where the molten polyethylene is extruded onto a polished metal drum, resulting in a flat and smooth sheet. The sheet is then cooled, rolled, and coated to produce a tarpaulin.

Innovations in HDPE Tarpaulin Manufacturing:-

The manufacturing process of HDPE tarpaulin has undergone significant innovations over the years, resulting in tarpaulins that are not only stronger but also more eco-friendly. One of the most significant innovations in HDPE tarpaulin manufacturing is the use of recycled materials. Recycled HDPE tarpaulins are made from post-consumer waste, which is melted and extruded to produce new tarpaulins. The use of recycled materials reduces the environmental impact of HDPE tarpaulin manufacturing and conserves natural resources.

Another innovation in HDPE tarpaulin manufacturing is the use of additives that improve the tarpaulin's properties. For example, the addition of antimicrobial agents can prevent the growth of bacteria and fungi on the tarpaulin's surface, while the addition of flame retardants can improve the tarpaulin's fire resistance.

5.Broad Industry overview

Tarpaulin is made of HDPE (High Density Polyethylene) comes under the plastic packaging industry. Major end users of the Tarpaulin are Agriculture, Logistic, Warehousing and Construction sector. Further Tarpulin is also used in the Flexible Intermediate Bulk Container (FIBC) Manufacturing Industry.

Tarpaulin manufacturing sector related to various industries, which in turn, have numerous sub-classes or products. One such major industry in the overall Manufacturing sector is 'Plastic and Plastic Products Industry'. Tarpaulin manufacturing has been discussed based on 'Plastic and Plastic Products Industry and FIBC manufacturing Industry mainly.

Further Tarpaulin is majorly consumed in the three industries such as Agriculture, Logistic and Construction sector. These three industries are the growth drivers for the Tarpaulin manufacturing. The growth aspects of the Agriculture, Logistic, Warehousing and Construction sector also have been covered to present the future prospect of the Tarpaulin manufacturing.

Global Consumption in Numbers:-

Global Tarpaulin Market Size: The global market for tarpaulins is valued at over **USD 4 billion** annually, and it's expected to grow at a **CAGR of 5-7%** over the next few years. Growth is driven by the increasing demand in agriculture, construction, and logistics.

Sector wise consumption of Tarpaulin:-

- **Agriculture**: Agricultural usage accounts for approximately **40-45%** of global tarpaulin consumption.
- **Construction**: The construction sector follows closely behind, consuming around **25-30%** of global tarpaulins, especially in fast-developing countries.
- **Transportation and Logistics**: About **15-20%** of global tarpaulin consumption is used in the logistics and transportation sectors, particularly in covering goods in transit.
- **Disaster Relief**: **5-10%** of global tarpaulin consumption is related to disaster relief and humanitarian aid, with demand surging during major global disasters.

- **Recreational/Other Uses**: The remaining **5-10%** is consumed by recreational, outdoor, and other niche markets.

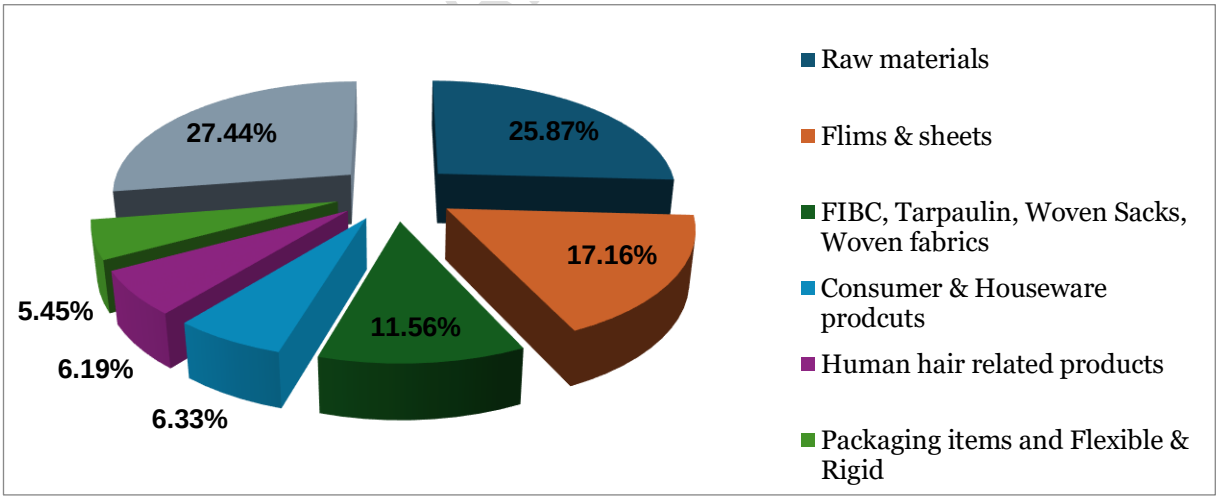
Tarpaulin Market Size and Growth in India:

Market Size: The Indian organised tarpaulin market is valued at over **₹2,000 crores (USD 270 million)**, with projections showing a **growth rate of 12-15 %** annually, driven by the increase in construction, agriculture, and logistics demand.

Plastic and Plastic Product Industry:-

The Indian plastic industry is one of the leading sectors in the country's economy. The history of the plastic industry in India dates back to 1957 with the production of polystyrene. Since then, the industry has made substantial progress and has grown rapidly. The industry is present across the country and has more than 2,500 exporters. It employs more than 4 million people in the country and constitutes 30,000 processing units; among these, 85-90% belong to small and medium enterprises. India manufactures various products such as plastics and linoleum, houseware products, cordage, fishnets, floor coverings, medical items, packaging items, plastic films, pipes, raw materials, etc. The country majorly exports plastic raw materials, films, sheets, woven sacks, fabrics, and tarpaulin. The Government of India intends to take the plastic industry from a current level of Rs. 3 lakh crore (US$ 37.8 billion) of economic activity to Rs. 10 lakh crore (US$ 126 billion) in 4-5 years.

India's product wise share of plastic exports (2024-25):-

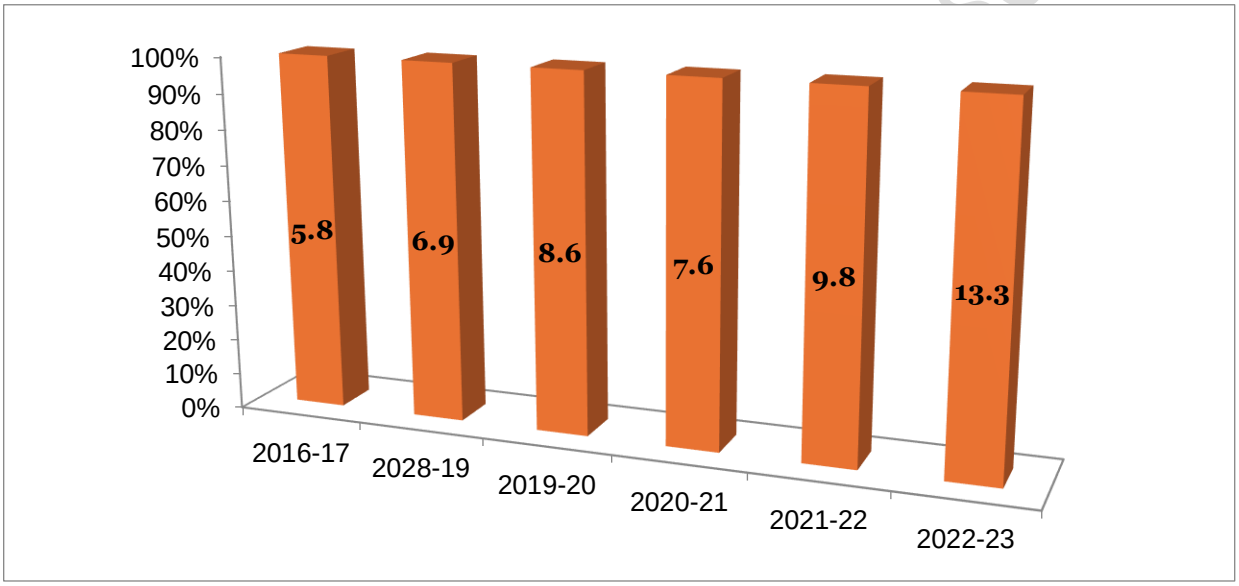


In FY25 (Until June 2024), India's plastic exports stood at US$ 2.93 billion. During this period, the exports of plastic films & sheets, FIBC woven sacks woven fabrics & tarpaulin and Packaging items – flexible rigid grew by 24.9%, 11.9%, and 10.4%, respectively, over the same period last year.

The cumulative exports of plastics and related materials during 2022-23 were valued at US$ 11.96 billion. This was a 10.4% decrease from the 2021-22 exports valued at US$ 13.35 billion. Plastic raw materials were the largest exported category and constituted 27.76% of the total exports in 2022-23; it recorded a growth of 21.5% over the previous year. Plastic films and sheets were the second largest category, comprising 15.13% of the total exports, but declined by 10.6% over the previous year.

In June 2024, the exports of plastics and linoleum from India were valued at US$ 980.8 million. During the same period, medical items of plastics; FRP & composites; packaging items; cordage fishnets & monofilaments and floorcoverings, leathercloth, & laminates recorded strong growth. The cumulative exports for April-June 2025 increase by 5.4% year-on-year (YoY) to US$ 2.93 billion.

India's plastics and linoleum exports(in US$):-



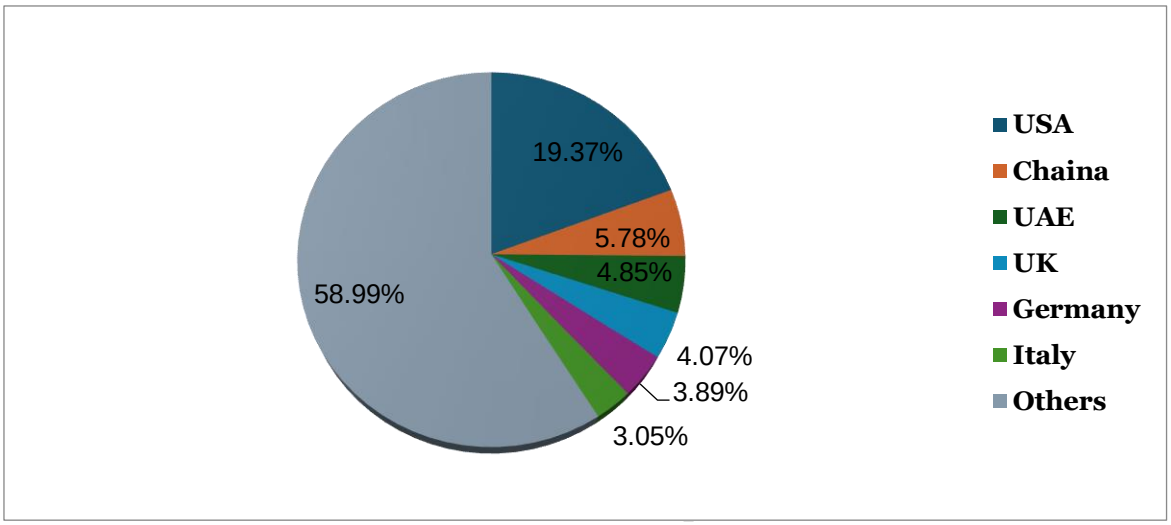
Export Destinations:-

India exports plastic to more than 200 countries in the world. The top five consumer and houseware product importing countries are the USA, Germany Japan, the UK, and France. India largely exports plastic and related products to the USA, China, the UAE, the UK, Germany, Italy, Bangladesh, etc. The total value of exports to the USA, the largest consumer of the Indian plastic industry, stood at US$ 2.31 billion in 2022-23, a decrease of 4.71% YoY. China was the second largest consumer of plastic export products from India and the total value of exports stood at US$ 690.95 million. The USA and China constituted 19.37%, and 5.78%, of the total plastic exports in 2022-23.

The total plastic exports from India to France during 2022-23 was around US$ 211.4 million. To boost exports to France and Europe, PLEXCONCIL collaborated with the Indo-French Chamber in the first quarter of 2021-22. The Minister for Commerce and

Industry, Mr. Piyush Goyal, recently urged industry to adopt international standards to help it expand its global footprint. India has recently signed a free-trade agreement with UAE and Australia, which will give the plastics industry new opportunities.

Country wise share in exports of plastic products during 2022-23



Government initiative: -

The Plastic Export Promotion Council (PLEXCONCIL) has set a target to increase the plastic exports of the country to US$ 25 billion by 2027. There are multiple plastic parks that are being set up in the country in a phased manner that will help improve the plastic manufacturing outputs of the country. Under the plastic park schemes, the Government of India provides funds of up to 50% of the project costs or a ceiling cost of Rs. 40 crore (US$ 5 million) per project.

Government initiatives like “Digital India”, “Make in India”, and “Skill India” will also boost India’s Plastic industry. For instance, under the “Digital India” program, the government aims to reduce the import dependence on products from other countries, which will lift the local plastic part manufacturers.

The government also launched a program for building Centres of Excellence (CoEs) to develop the existing petrochemical technology and promote the research environment pertaining to the sector in the country. This will aid in promoting and developing new applications of polymers and plastics in the country. Additionally, about 23 Central Institute of Plastics Engineering & Technology (CIPET) have been approved to accelerate financial and technological collaboration for promoting skills in the chemicals and petrochemicals sector.

FLEXIBLE INTERMEDIATE BULK CONTAINER MANUFACTURING – INDUSTRY ANALYSIS

Flexible intermediate bulk containers refer to type of bulk transporting packaging method that are made up of flexible and foldable fabric materials woven together. These containers are highly utilized in transportation, storage and protection of dry products and contents. These containers are known to be light weight, recyclable and environment friendly. These products have the capability of being transported with the assistance of pallets fitted below them that makes them easier to lift and handle.

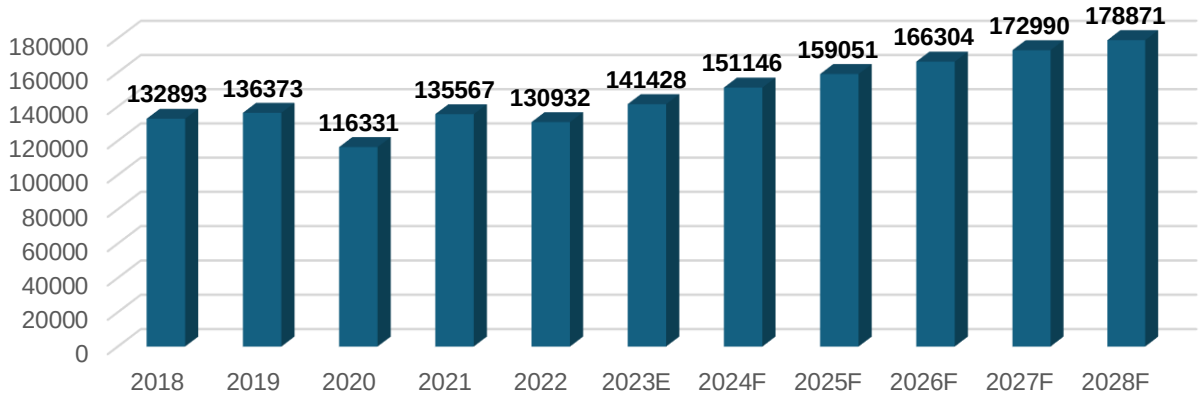
he rise in the need of reducing overall weight of bulk packaging, growing food and pharmaceutical industries across the globe and expansion of manufacturing and construction sectors especially in the developing regions are the major factors driving the flexible intermediate bulk container market. The use of flexible intermediate bulk containers (FIBCs) in several end-use industries such as food, chemical, pharmaceutical, building and construction, mining, manufacturing, agricultural and waste handling among others, expansion of pharmaceuticals industry leading to high demand for FIBC and inclination towards these containers as they can be stored in a small space by folding and pressing multiple FIBCs together accelerate the flexible intermediate bulk container market growth. The capacity of flexible woven typically polypropylene (PP) to hold 500 kg to 2,000 kg of weight, the utilization of these products to store dry and flowable products such as grains, seeds, salts, chemicals,

sands, clays and cement among others and the usage of these products to manage finished granules and small-size materials, raw and semi-finished in industrial premises influence the flexible intermediate bulk container market. Additionally, several benefits such as low costs, low weights, and are easy to handle, wide use in food and beverages, pharmaceuticals, agricultural and chemical industries and the adoption rate in bulk packaging positively affect the flexible intermediate bulk container market. Furthermore, technological advancement in the packaging components, technologies and application extend profitable opportunities to the flexible intermediate bulk container market players in the forecast period of 2021 to 2028.

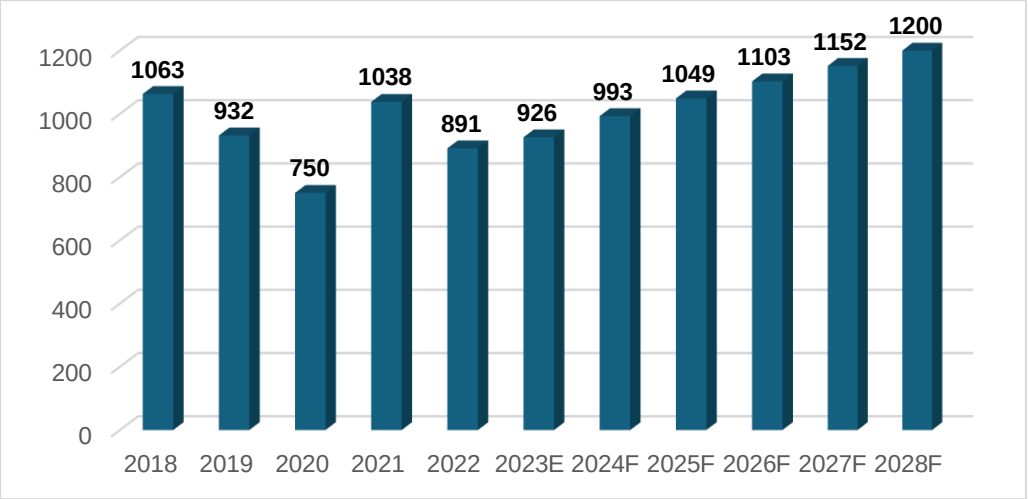
Indian FIBC Production:-

According to IFIBCA, the FIBC market in India has grown by almost 38% in the last 10 years. FIBCs offer a convenient way to store and transport food products. This is because they are lightweight, easy to handle, and can be stacked to save space. India is a major exporter of food products. Food-grade FIBCs are used to transport food products to overseas markets. However, the production of the FIBC industry declined by around 3.3% y-o-y in 2022. It is expected to reach around 130.9 million units by the end of 2023. The FIBC market was valued at 891 USD million in 2022 and is projected to grow at a CAGR of 4.8% during the period, 2024-2028.

Indian Production in Volume & Value (2018-2028)



Production - Value (in USD million)



Food-grade FIBCs are typically used to transport dry, flowable food products, such as flour, sugar, rice, and cereal. They are also used to store food products in bulk quantities. The food-grade FIBC Production was nearly 28% of the total production of

FIBC in India in 2021. Food-grade FIBCs, also known as food contact FIBCs, are bulk bags specifically designed for the storage and transportation of food products. They are made from virgin polypropylene resin and manufactured in clean & hygienic facilities. Food-grade FIBCs are also subject to rigorous testing and certification to ensure that they meet the highest safety and quality standards. Another growth driver is the surging e-commerce, which has led to an increased demand for food delivery services.

Moreover, the food-grade FIBC grew at a CAGR of 11.5% during 2017-2021. On the other hand, the FIBC industry is expected to grow at a CAGR of 4.3% during 2024-2028, reaching around 178.8 million units by the end of the forecast period. The growth is attributable to rapidly growing Indian and global food industries, driven by population growth and rising incomes. India has taken over China to become the most populous country in the world. Food is a basic human necessity. As a result, the growing food demand has raised the demand for food packaging. Besides, there is a rising awareness about food hygiene and safety among consumers. Furthermore, technological advancements in FIBC manufacturing are leading to the development of stronger, lighter, and more durable FIBCs. This is making FIBCs more attractive to users and is expected to drive demand. Similarly, the FIBC industry is attracting increased investment from both domestic and foreign investors. This is expected to lead to the expansion of existing production facilities and the establishment of new ones.

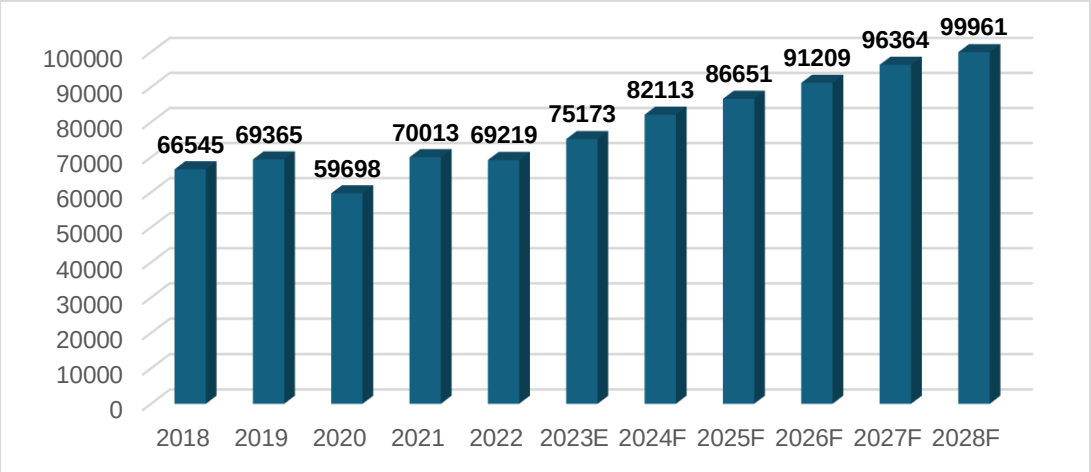
Indian FIBC Export:-

According to IFIBCA, India has a 75% share in European FIBC imports and a 72% share in the US import market. India's dominance in the export market is attributable to a growing focus on quality, excellent engineering capabilities, backward integration, and ethical business practices. Further, the growth is supported by the increasing demand from sectors like food and agriculture, chemical and petrochemicals, construction materials, etc.

The exports of the FIBC industry marginally declined around 1.1% y-o-y in 2022. Over 50% of the units produced in India are exported. The top five countries are the United States, Germany, the United Kingdom, France, and Spain. The export numbers are expected to project a CAGR of 5% during 2024-2028 and will reach around 99.9 million units by the end of the forecast period.

Indian Export in Volume & Value (2018-2028)

Export - Volume (in '000 units)



6.Key growth drives' Present Scenario of the end users Industries

Major end users of the Tarpaulin are Agriculture, Logistic, Warehousing and Construction sector. Future prospect of this sector highly impact the growth of Tarpaulin market. In this respect the future outlook of these industries have been discussed.

Logistic Sector in India:-

Transport and logistics refer to the procedures involved in the manufacture, storage, inventory, delivery, and distribution of specific commodities or services. The logistics sector in India was predicted to account for 14.4% of GDP in 2022. It is the primary source of income for more than 22 million people. The overall logistics sector in India includes 37 export promotion councils, 40 Participating Government Agencies (PGAs), 20 government agencies, 10,000 goods, and 500 certifications. Between the financial years 2015-16 to 2019-20, India invested approximately US$ 10.2 trillion in the development of infrastructure. The freight movement in India is significantly prejudiced towards road transportation, which transports 66% of goods (in ton-kilometres). This is followed by rail (31%), shipping (3%), and air (1%). To facilitate cargo transportation, India has a vast network of support infrastructure, including 129+ inland container depots, 168+ container goods stations, and 300 m sq. ft. of warehouse capacity. The logistics sector in India can be divided into the following:-

Surface Transportation:-

The surface transport sector is anticipated to experience the fastest growth in India's infrastructure sector, with a CAGR of more than 8% in 2020. Additionally, the trucking sector is very unorganised and fragmented. Less than five trucks make up the fleet of 70% of the truck owners in the industry. Through different asset monetisation techniques and funding through Special Purpose Vehicles, the Ministry of Road Transport and Highways (MoRTH) is working to reach a target of over Rs. 40,000 crore (US$ 4.80 billion) for the current financial year (2023-24). The road network in India has risen from 62.15 lakh km in FY21 to 63.73 lakh km by January 2023.

Railways:-

India has the world's fourth-largest rail network and accounts for the second highest percentage of goods moved in terms of volume. From April to September 2023, a total freight loading of 758.20 million tonnes (MT) was obtained, compared to a loading of 736.68 MT the previous year, representing a rise of around 21.52 MT. During September 2023, Indian Railways loaded 59.70 MT of coal, 14.29 MT of iron ore, 5.78 MT of pig iron and finished steel, 6.25 MT of cement (excluding clinker), 4.89 MT of clinker, 4.54 MT of foodgrains, 4.23 MT of fertiliser, 4.0 MT of mineral oil, 7.28 MT of containers, and 10.10 MT of rest of all other goods. The average speed of freight trains on the Dedicated Freight Corridor (DFC) will more than double with the inauguration of DFC. In 2021, India pledged to invest Rs. 3 lakh crore (US$ 36.04 billion) in the

Dedicated Freight Corridor (DFC) to build dedicated rail tracks and related infrastructure for the transit of goods trains.

Waterways:-

India has a 7,500 km (4,660 miles) coastline that is encircled by the sea on three sides. India has 200 minor/intermediate ports and 12 big ports, which together, account for 65% of the country's total value and 95% of its volume of trade. The Indian coast offers a huge opportunity for the movement of cargo. By 2025, total cargo movement is estimated to exceed 250 MTPA. Commodities including petroleum, oil, lubricants, building supplies, and dry bulk cargo like cereal grains, fertiliser, steel, coal, and minerals are ideal for coastal transportation. On December 15th, 2021, the Government of India (GoI) pledged to invest Rs. 3-3.5 lakh crore (US$ 38-44 billion) across ports, shipping, and in-land waterways under the Maritime India Vision (MIV), which would help unleash Rs. 20,000 crore (US$ 2.40 billion) in potential annual revenue for Indian ports. Indian Government plans to replace diesel with electricity for at least half of the vehicles and equipment needed by the major ports by 2030 and to increase that number to 90% by 2047. The shipping ministry wants ports to build at least one liquified natural gas (LNG) bunkering station by 2030 and electric vehicle charging facilities near port areas by 2025 to decrease the usage of petrol. Moreover, the major ports collectively handled a record-breaking 795 million tonnes of cargo in 2022-23, registering a 10.4% growth over the previous year.

Airways

Airways account for less than 2% of the total modal mix. The materials transported by air for freight movement are primarily time sensitive commodities such as pharmaceuticals, healthcare, electronics, etc. Airways are not recommended for non-time-sensitive freight movement of commodities since they are more expensive than other means of transportation. As of June 30th, 2023, the Regional Air Connectivity Fund Trust (RACFT) has released Viability Gap Funding (VGF) amounting to Rs. 2,729.11 crore (US$ 333 million) to the selected airline operators for the operation of the Regional Connectivity Scheme (RCS)-UDAN (Ude Desh ka Aam Nagrik) Scheme. 479 routes are in operation, connecting 74 airports, including two water aerodromes, and nine heliports, based on the four rounds of bidding under UDAN. The Scheme has benefitted around 123 lakh passengers.

Warehousing Sector in India:-

India Smart Warehousing Market size was estimated at USD 2.93 billion in 2023. During the forecast period between 2024 and 2030, the size of India Smart Warehousing Market is projected to grow at a CAGR of 14.65% reaching a value of USD 6.66 billion by 2030. Major growth drivers for the India Smart Warehousing Market include the growing multi-channel distribution networks, an increasing emphasis on environmentally friendly initiatives and rising sustainability measures to reduce waste. The dynamic and globalized nature of supply chain networks further contributes to propelling the market's expansion. Also, the ongoing Industry revolution is transforming contemporary warehouse operations through the integration of technologies such as Big Data analytics, Artificial Intelligence, autonomous robotics, augmented reality, and the Internet of Things. The smart warehousing industry is advancing significantly, driven by the increasing popularity of e-commerce and the ongoing process of digitization. Global suppliers are adopting innovative technologies like bar code scanning software, automated guided vehicles, and radio frequency identification technology to enhance and accelerate supply chain networks while minimizing errors. The utilization of these advanced technologies plays a pivotal role in shaping the market's growth and development.

Construction sector:-

The construction sector in India can be broadly classified into Infrastructure construction, Industrial/ Manufacturing construction and Building Construction. During fiscal 2019-23 the investments in the construction industry stand at Rs 42.45 trillion and is expected to grow by 1.61 times, reaching Rs 67.00 – 69.00 trillion during fiscal 2024-28.

Building construction includes constructing buildings for residential uses such as houses, residential towers as well as institutional and healthcare buildings like hospitals, educational institutions and buildings for commercial use such as offices, retail malls, etc. Infrastructure construction includes construction of warehouses, bridges, dams, roads, airports, canals, urban infrastructure, railway infrastructure (including railway buildings), metro depots etc. Industrial/manufacturing construction includes construction of manufacturing plants, factories, power plants, and other highly specialised facilities.

Construction investments in India:-

Construction investments to grow by ~1.61 times between fiscals 2024-28 compared to fiscals 2019-23; Infrastructure investments to drive long-term growth. Growth in construction sector is expected to be propelled by the infrastructure segment over the medium to long term as the building construction and industrial sectors are expected to record sedate growth rates. Over the long term, CRISIL MI&A projects the overall construction investments to rise by ~1.61 times between fiscals 2024-28 compared with those over fiscals 2019-23. Investments in building construction vertical are expected to

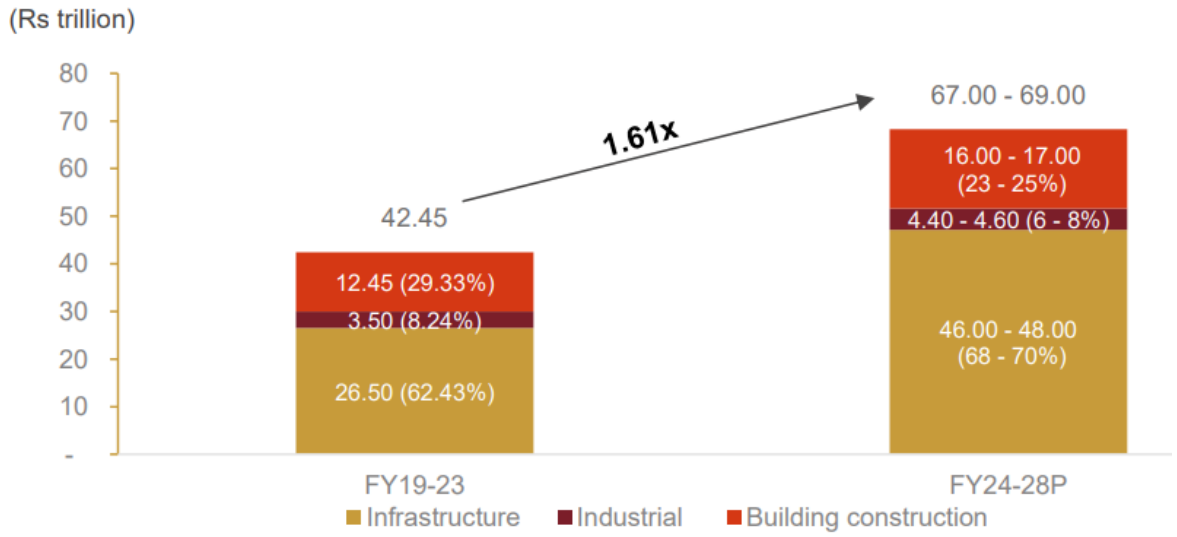
increase by ~1.34 times, though its share in overall construction investments is expected to fall to 23-25% between fiscals 2024-28 compared with a share of 29.33% between fiscals 2019-23. This growth is majorly driven by rise of investments in residential segment during the period.

The share of infrastructure investments is expected to increase to 68-70% of the overall construction investments for the five years (fiscals 2024-28) as against 62.43% in the past five years (fiscal 2019-23), as infrastructure investments are expected to see faster growth than the other two segments (building construction and industrial) due to the Government's focus on Infrastructure under the National Infrastructure Pipeline (NIP), National Monetisation Pipeline (NMP) and the Gati Shakti initiative. The Central government's focus on roads, urban infrastructure and railways will boost infrastructure investments. At an investment level, investments in the infrastructure vertical are expected to be ~1.78 times during fiscals 2024-28 compared to fiscals 2019-23 majorly driven by government initiatives towards infrastructure such as National Infrastructure Pipeline, Gati Shakti initiative, Sagarmala among others.

Industrials vertical investments are expected to increase by ~1.34 times between fiscals 2024-28 compared with fiscals 2019-23. Investments in the vertical are driven by the investments in oil and gas segments led by capital expansion plans by industry players as well as investments by upstream oil & gas and downstream natural gas players. Additionally, investments through PLI scheme in sectors such as auto and auto components, textiles and specialty steel are expected to further boost the overall investments.

This growth in the construction sector is majorly poised by continued urbanization, steady income profiles, expected growth in employment generating sectors as well as rising affluence and propensity to spend on real estate by midincome buyers on the residential segment front as well as major government initiatives such as Pradhan Mantri Awas Yojana for affordable housing, infrastructure plans like National Infrastructure Pipeline and investments through PLI scheme in major capital-intensive sectors.

Overall construction investments by vertical:-



Agriculture sector:-

According to Inc42, the Indian agricultural sector is predicted to increase to US$ 24 billion by 2025. Indian food and grocery market is the world's sixth largest, with retail contributing 70% of the sales. As per the First Advance Estimates for 2023-24 (Kharif only), total foodgrain production in the country is estimated at 148.5 million tonnes.

Rabi crop area has from 709.09 lakh hectares in 2022-23 to 709.29 lakh hectares in 2022-23. In 2022-23 (as per the second advance estimate), India's horticulture output is expected to have hit a record 351.92 million tonnes (MT), an increase of about 4.74 million tonnes (1.37%) as compared to the year 2021-22. The Agriculture and Allied industry sector witnessed some major developments, investments, and support from the Government in the recent past. Between April 2000-March 2024, FDI in agriculture services stood at US$ 3.08 billion. According to the Department for Promotion of Industry and Internal Trade (DPIIT), the Indian food processing industry has cumulatively attracted a Foreign Direct Investment (FDI) equity inflow of about US$ 12.58 billion between April 2000-March 2024. This accounts for 1.85% of total FDI inflows received across industries. During 2024-25 (April-May), processed vegetables accounted for US$ 122.91 million, miscellaneous processed items accounted for US$ 302.07 million and processed fruits & juices accounted for US$ 143.51 million.

Rapid population expansion in India is the main factor driving the industry. The rising income levels in rural and urban areas, which have contributed to an increase in the demand for agricultural products across the nation, provide additional support for this. In accordance with this, the market is being stimulated by the growing adoption of cutting-edge techniques including blockchain, artificial intelligence (AI), geographic information systems (GIS), drones, and remote sensing technologies, as well as the release of various e-farming applications.

Agriculture Exports from India (US$)

Source: - APEDA

Sources:-

https://www.industryarc.com/Report/15010/polymers-market-inindia.html#:~:text=Polymers%20Market%20Overview,a%20long%20chain%20after%20bonding).
https://www.thebusinessresearchcompany.com/report/polystyrene-global-market-report)
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https://www.chemanalyst.com/industry-report/india-low-density-polyethylene-ldpe-market-71.
https://business.mapsofindia.com/india-petroleum-industry/polymers.html).
Annual report https://chemicals.gov.in/.
https://www.commerce.gov.in/.
https://www.cfiindia.com/
Company annual report/

7. Peer entity analysis

Plastic sector is very large diversified filed. Tarpaulin comes under the plastic packaging segment. In this segment there no such very close peer entity. Other major players which are closed to plastic packaging related product items have considered here the peer group analysis. Detailed discussion as follows.

Key financials of the Peer entity:-

S. No.	Name	CMP Rs.	P/E	Mar Cap Rs. Cr.	Div Yld %	NP Qtr Rs. Cr.	Qtr Profit Var %	Sales Qtr Rs.Cr.	Qtr Sales Var %	ROCE %
1	Gujarat Raffia Industries Ltd.	42.34	39.44	22.89	0.00	0.08	-55.56	6.10	-14.69	4.05
2	Time Technoplast Ltd	378.15	23.11	8581.41	0.53	102.38	10.00	1387.74	4.76	15.62
3	TPL Plastech Ltd	80.90	27.64	631.05	1.02	6.93	17.86	91.04	10.14	19.01
4	Shree Tirupati Balajee Agro Trading Co. Ltd	57.78	16.10	471.32	0.00	8.15	27.44	142.66	-9.25	16.59
6	Commerl. Synbags	79.90	37.55	319.22	0.00	3.60	53.19	86.65	26.94	8.98

Company Details:-

Company Name	Details
Gujarat Raffia Industries Ltd.	Gujarat Raffia Industries Limited (GRIL), an Indian manufacturing company is incorporated and established in Gujarat near major sea ports. The company was founded in 1984. GRIL is one of the major manufacturers of PE Tarpaulin, Plastic Sheeting, Ground Sheeting, Geomembrane, Tents, Shelters, Pond Lining, Canal Lining, Fumigation cover, HDPE Woven Bags, PP Woven Bags, Vermibed, PP Ropes etc. The plant has all the latest manufacturing facilities and have top quality measures for good working environment.
Time Technoplast Ltd	Time Technoplast Ltd(Time Tech), is a multinational conglomerate with operations in Bahrain, Egypt, Indonesia, India, Malaysia, U.A.E, Tiwan, Thailand, Vietnam, Saudi Arabia, & USA. The Company's portfolio consists of technically driven innovative products catering to growing industry segments like,

	Industrial packaging Solutions, Life style products, Automative Components, Infrastructure/Construction related products. Since its inception in 1992, Time Tech has set itself apart from its competition by focusing on research and development, futuristic product designing, superior, customer service by setting up 20 manufacturing units and 8 regional and marketing offices.
TPL Plastech Ltd	TPL Plastech Ltd is a leading plastic processing group in Asia and also having the distinction of being the first manufacturers in bulk packaging to get an ISO certification at Silvassa as early as 1998. Company established first production unit at Silvassa in the year 1995. The Company now has four manufacturing unit at Jammu (J&K), Gadarpur(Uttaranhal), Kutch(Gujrat), Ratlam (Mmadhya Pradesh) and Vishakhapatnam(Andha Pradesh) with installed capacity of 28000 MT.
Shree Tirupati Balajee Agro Trading Co. Ltd	Shree Tirupati Balajee Agro Trading Company Limited is one of the strongest manufacturers and suppliers of FIBC in the Indian domestic market and one of the fastest growing exporters. STB is the preeminent destination for world-class FIBC (flexible intermediate bulk container) products and solutions customized to the bulk packaging requirements of a wide range of discerning global customers. Established in the year 2001, STB group of companies with a strong vision to be the pioneer of bulk packaging manufactured in India. The company has a fully integrated facility and is operating from 3 locations all within two miles of each other. We are certified with ISO 9001:2015,ISO 22000-2018, BIS and our food grade facility is certified for ISO 9001:2015, ISO14001:2015, ISO45001:2018, ISO 22000:2018 ,BRCGS, Sedex Smeta and all our products are manufactured from approved materials that have passed rigid testing and inspection routines as well as meeting high quality and contamination conscience standard of the International Food Grade Industry requirements. These international benchmarks bear the testimony to the excellence we provide to our customers spread across the globe.
Syn Bags Limited	The Company is involved in manufacturing of FIBC, Tarpaulin, Woven Sacks, and BOPP Bags, located in Indore, a city in Central India. Syn Bags Limited is a member of 50 years old Choudhary Group, which has a wide range of business interests. Having more than 3 decades of experience, our main focus is on providing customer with the best possible solution for his packing needs within a specific time frame. Manufacturing capacity is of 21000 M.T. per annum. We produce 4-5 million

	Big Bags annually. The company is socially responsible towards its 2000 employee, who are pillar of the company.

Sources:-

- ***Company annual report.***
- ***BSE Sensex.***
- ***Company website and information available in the public domain.***

8. Key Challenges of Tarpaulin sector

Price fluctuation in Raw material price:-

PP/HDPE Tarpaulin industry faces multiple challenges. One of the primary concerns is price volatility. Tarpaulin production depends on PP/HDPE, both of which are derived from crude oil. Fluctuations in global crude oil prices directly impact the cost of polypropylene manufacturing.

High Labour Costs in Developed Areas: -

Labour costs play an important role in the flexible medium bulk container industry. In addition, the larger the per capita GDP of developed countries, the higher the per capita labour remuneration and the higher the labour price level. Also, due to the aggravation of the global ageing trend, especially in developed countries, the labour market is projecting a shortage trend, which further raises global labour costs. For example, according to an authoritative report of Japan, by 2030, Japan's labour gap will reach 6.44 million people, facing a serious labour shortage problem. Whereas Japan's ageing population is a substantial social problem alongside fewer children. Therefore, the rising labour costs may limit the development of the Tarpaulin sector.

Supply Side Challenges: -

A supply shock is an event that may cause changes in production capacity and production cost, thus affecting the stability of the entire supply chain and causing price fluctuations. Supply shocks can be divided into favourable shocks and unfavourable shocks. The events that form the supply shock are not only short-term accidental events but also the events formed by the system reform. The biggest and most long-term influencing factor is the economic system itself. The most profound challenge to supply is policy.

Environmental factors:-

Environmental concerns related to plastic waste disposal pose another major challenge. India generates approximately 3.5 million tonnes of plastic waste annually, and while polypropylene is recyclable, inadequate waste management infrastructure limits recycling rates. The government's Extended Producer Responsibility policy mandates better waste collection and recycling systems, but further efforts are needed to ensure sustainable waste management.

Logistical factors:-

The industry also faces logistical and infrastructure-related hurdles. High transportation costs, inefficiencies in supply chain management, and a lack of specialized recycling facilities hinder the efficient distribution and repurposing of

polypropylene materials. Investments in polymer research, circular economy initiatives, and advanced recycling technologies will be critical in overcoming these challenges.

9. Final words

Challenges:-

- **Quality Standards**: There's variability in quality across the market, with cheaper, lower-quality tarpaulins often being used in agriculture and construction, which can reduce their lifespan and effectiveness.
- **Environmental Concerns**: Traditional **PVC-based tarpaulins** can be environmentally harmful. However, growing awareness about **eco-friendly options** is slowly shifting the market toward sustainable alternatives.
- **Competition from Imports**: While India is a significant manufacturer and exporter of tarpaulins, there's competition from countries like **China** and **Indonesia**, which offer similar products at competitive prices.

Export of Tarpaulin:-

Tarpaulins are widely exported around the world due to their versatility and the broad range of industries that require them—such as construction, agriculture, transportation, and logistics. India's tarpaulin export industry has seen steady growth over the past few years, especially driven by demand from developing countries. According to reports, the export of tarpaulins from India has been growing at a compound annual growth rate (CAGR) of around 5-7%.

The Plastic Industry in India is Segmented by Type (traditional Plastics, Engineering Plastics, And Bioplastics), Technology (blow Molding, Extrusion, Injection Molding, And Other Technologies), And Application (packaging, Electrical and Electronics, Building, And Construction, Automotive and Transportation, Housewares, Furniture, And Bedding, And Other Applications). The Market size of Plastic Industry In India is estimated at USD 46.48 billion in 2024, and is expected to reach USD 52.72 billion by 2029, growing at a CAGR of greater than 6.5% during the forecast period (2024-2029). The plastic industry in India is one of the most important industries in the country's economy. The plastic industry traces its roots back to 1957 when polystyrene was first produced in India. Plastic consumption in India grew by 23-fold since then, reaching about 22 million tons. Per capita plastic consumption also grew from 1 kg per capita to 15 kg per inhabitant. India accounts for about 6% of global plastic use and is the third largest consumer of the material after China and the US. Economic growth and a growing population are expected to continue to drive plastic use in India over the coming decades. According to estimates, India's plastic consumption could reach over 160 million metric tons (MT) by 2060, which would be more than double its current share in global plastic consumption. About 40 lakh workers are employed in the Indian plastics industry. The processing units and the exporters are about 30,000 and 2,000,

respectively. Of these, 85 to 90% are small and medium enterprises (SMEs). The Indian plastics industry produces a wide range of products, such as plastic and

linoleum, house ware products, cordage, fishnets, and floor coverings. It also creates medical items, packaging items, plastic films, pipes, and raw materials, among others. The country mainly exports plastic raw materials, films, sheets, woven sacks, fabrics, tarpaulin, etc. According to the source report, there are 4,953 registered plastic manufacturing/recycling units engaged in plastic activities in 30 states/Union territories of India and 823 non-registered plastic manufacturing/recycling units in 9 states/UTs. These plastic products are exported to more than 150 nations, mostly in Europe, Africa, & Asia.

Best Regards,

T.G Uday Associate Director,

M/s Infomerics Analytics & Research Pvt Ltd

Date: 21/04/2025

Place: -Bangalore