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सत्यमेव जयते
Department of Chemicals & Petrochemicals
Government of India

FICCI

Knowledge Paper on

NEW HORIZONS FOR INDIAN PLASTICS PROCESSING INDUSTRY

December 8th-9th, 2014
at Federation House, New Delhi

Knowledge and Strategy Partner

TATA STRATEGIC MANAGEMENT GROUP

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Sidharth Birla
President

Message

The Plastic industry is making significant contribution to the economic development and growth of various key sectors in the country namely: Agriculture, Automotive, Construction, Electronics, Healthcare, Textiles, FMCG etc. The demand for plastics has been growing rapidly at 13% p.a. (from 6 Mn MT in FY08) to reach 11 Mn TPA by FY13. In value terms, the plastic processing industry has grown at a CAGR of 10% from INR 35,000 Cr. in FY'05 to INR 90,000 Cr.In FY'14. The industry turnover is expected to reach INR 1,37,000 Cr. by FY'18. Increase in the presently low levels of per capita consumption (9.7 Kgs) in the country along with increased growth in end use industries would propel the growth of plastics in India further.

However, despite having a good growth potential, the plastic processing industry faces many challenges in terms of environmental myths, lack of advanced technology, limited infrastructure and high volatility in Polymer prices. To overcome these challenges, significant efforts need to be made by all the stakeholders to realize the full and true potential of this industry.

I am pleased to note that FICCI jointly with the Department of Chemicals & Petrochemicals, Government of India and Organization of Plastics Processors of India is organizing a Conference on "New Horizons for Plastics Industry". I am confident that the Conference will achieve its objectives and wish it every success.

Sidharth Birla

Foreword

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This report attempts to provide reader an overview of the Indian plastic processing industry, its growth prospects, challenges faced and emerging applications of plastics in the market. We also highlight select strategic initiatives to bring about a rapid development of this industry.

The Indian Plastic Industry gained momentum in early 1990's when the economy opened up with liberal industrial policies. Further impetus was added with investments in raw material production from mid 1990's onwards. This further fuelled investments in plastic processing industry as well as downstream machinery sector.

In the last decade, a number of emerging applications of plastics have been developed in many industries for e.g. in Automotive, Packaging, Agriculture, Textile etc. which have changed the day to day lives of the people. The industry has produced better and improved quality of plastics with the help of new technologies especially in the packaging industry leading to replacement of several materials such as wood, metals, glass etc.

Currently, in India, there is a greater presence of plastics in the packaging industry with 43% penetration as compared to a world average of 35%.On the other hand, the agricultural sector has the least penetration at 2%as compared to world average of 8%. This indicates that the Indian agriculture industry can be a strong host to the plastic industry for future growth.

However, Indian Plastic industry faces issues like environmental myths, lack of technology, and vulnerability to fluctuating feed stock prices. Going ahead recycling & reuse of plastics could be a foremost step towards fostering innovation and sustainability. Also increased awareness through help of industry groups and Government could help address some of these challenges.

With the current government's ***Make In India*** campaign, the plastics processing industry can be benefitted by presence of global businesses in this domain. There is tremendous scope for growth of this sector in the years to come.

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Executive summary

Indian plastic industry is making significant contribution to the economic development and growth of various key sectors in the country which includes Automotive, Construction, Electronics, Healthcare, Textiles, and FMCG etc. Plastic industry in India creates new employment opportunities for the people hence proving to be a promising industry. The plastic processing industry has the potential to contribute in bringing foreign investments and contributing to India's dream of becoming a manufacturing hub.

Our study indicates that plastics processing industry has grown at a CAGR of 13% in volume terms from 6 MnMT in FY '08 to 11 MnMT in FY '13 and is expected to grow at a CAGR of 10% from FY '13 to FY '18 to reach 18 MnMT.

In value terms, the plastic processing industry has grown at a CAGR of 10% from INR 35,000 Cr. in FY '05 to INR 90,000 Cr. in FY '14. The industry turnover is expected to reach INR 1,37,000 Cr. by FY '18.

Current low levels of per capita consumption (9.7 Kgs), increased growth in end use industries, higher penetration of plastics in various existing applications and ever growing range of new applications could further propel the growth of plastics in India. For example, the penetration of plastics in agriculture globally is 8% whereas in India it is substantially lower at only 2%.This indicates that the agriculture sector could be one of the major segments which drive the growth of plastics in coming years.

Moreover, in the last decade, several new applications of plastic products have emerged in several sectors boosting the industry further. For example, long fiber reinforced thermoplastic for automotive industry, fibers that can trap infra-red radiations, packaging that can increase the shelf life of products etc. have created demand of plastics which were in their nascent stage in India.

However, despite having a good growth potential, the plastic processing industry faces many challenges in terms of environmental myths, lack of advanced technology, limited infrastructure,& high volatility in feedstock prices. To overcome these challenges, significant efforts will have to be made by all the stakeholders to realize the real potential of this industry.

With the onset of the government's ***Make In India*** campaign it becomes imperative for the government to provide special support to this industry in terms of adequate infrastructure and favorable policies. The industry also needs to think about building scale in order to realize economies of scale and has to focus on innovation.

Our study indicates that going forward, the market for plastic processing industry in India is expected to grow at a CAGR of 10% between FY '13 to FY '18 to reach 18 MnMT. In value terms, it is likely to grow at a CAGR of 11% to reach INR 1,37,000 Cr. by FY '18.

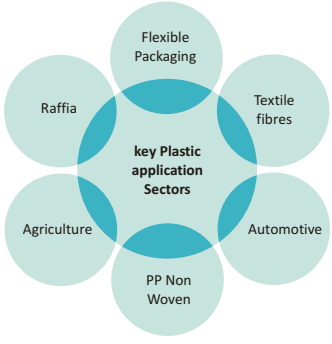
1 Introduction

Since independence, plastic industry in India has been playing a predominant role in shaping our lives. The plastic industry in India has made significant achievements since its beginning by commencing production of polystyrene in 1957. Since last decade with the advent of new and improved products, the industry has gained greater importance with the production of better and improved quality of plastic products.

Plastic industry in India symbolizes a promising industry and at the same time helps in creating employment opportunities for the people. Plastic industry caters to the entire spectrum of daily use items and covers almost every sphere of life such as clothing, housing, construction, furniture, automobiles, household items, agriculture, horticulture, irrigation, packaging, medical appliances, electronics and electrical etc.

The figure below represents the key plastic application sectors.

Figure 1: Sectors in Plastic processing industry



There is a goodscope for innovative products which will further contribute to growth of the sector in years to come. An example to this is the packaging industry which has witnessed a complete replacement of old age products with the new ones.

With India's population similar to China but polymer demand at only one-fifth of China, the Indian subcontinent's plastics industry has a good potential for growth. Strongly emerging segment of population having disposable income is raising living standards and increasing consumption of a wide range of consumer goods from packaged foods to automobiles. Investment in infrastructure and agriculture is also further fueling the demand of plastics and related products in the region.

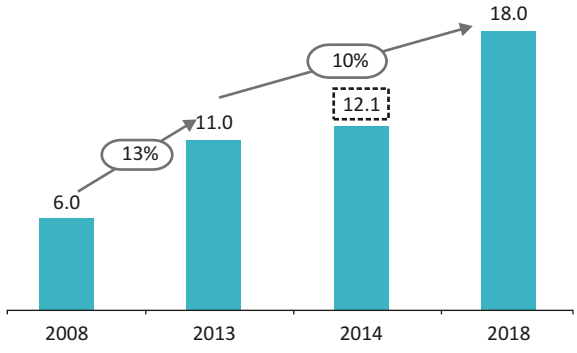
Whilst the outlook for plastics processing in the Indian subcontinent is undoubtedly positive, the industry still faces many challenges in terms of inadequate infrastructure & environmental myths.

2 Market overview

Plastics processing industry has grown at a CAGR of 13% in volume terms from 6 MnMT in FY'08 to 11 MnMT in FY'13 and is expected to grow at a CAGR of approximately 10% from FY'13 to FY '18 to reach 18 MnMT (Ref: Figure 2).

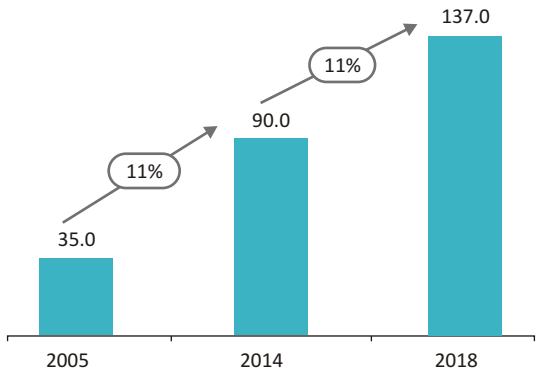
In value terms, the plastic processing industry has grown at a CAGR of 10% from INR 35,000 Cr. in FY '05 to INR 90,000 Cr. in FY '14. The industry turnover is expected to reach INR 1,37,000 Cr. by FY'18 (Ref: Figure 3).

Figure 2: Demand of plastics in India over the years[1]



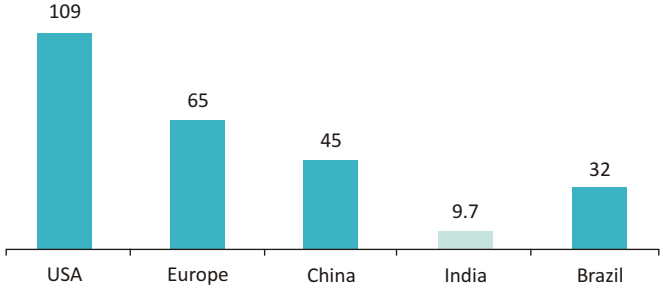
[1] *Potential of Plastics Industry in Northern India with special focus on Plasticulture and Food Processing - 2014*

Figure 3: Turnover of Indian plastic processing industry[2]



India offers a huge opportunity over long term for plastic product consumption (Ref: Figure 4) as there exists a low per capita consumption level of plastic products as compared to developed countries. As of FY '14, India's per capita consumption of plastic products is one-third of Brazil and approximately one-fifth of China. This indicates that going forward, there is significant scope for the consumption to rise keeping in mind India's current demographic situation.

Figure 4: Per capita plastic products consumption (Kg/person)



Source: PlastIndia, Business Press, Research by Tata Strategic

Due to increasing domestic consumption and high potential, India is emerging as one of the focus destinations for plastics and downstream players worldwide.

In FY '14, total number of processing units in the Indian plastic industry stood at approximately 30,000 which generated revenues of approximately INR 900 Bn.

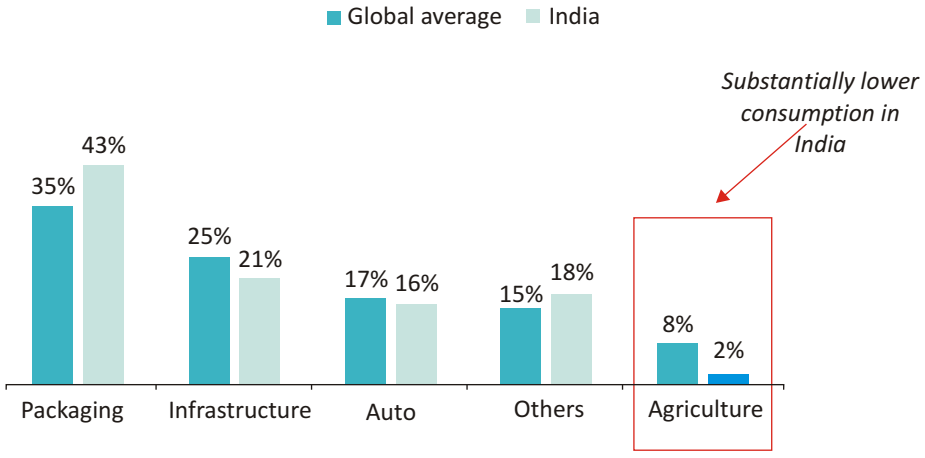
[2] http://www.indianmirror.com/indian-industries/plastic.html

Snapshot of Indian Plastics Industry	
Turnover (plastic processing)	USD 15 Bn* (INR 900 Bn)
Processing Units	>30,000(mostly small scale)
Processing machines installed	>USD 15 Bn (INR 900 Bn) worth
Installed processing Capacity	26.5 MnMT
Employment	4.25 Million

* 1 USD = INR 60.00

Packaging industry in India has seen a strong penetration of plastics as compared to global standards. However, agriculture sector still hasn't explored the benefits of plastics to a large extent. For example, global average for plastics demand in agriculture is approximately 8% while India is substantially lower at only 2%. Figure 4 details India's current penetration levels vis-à-vis global averages for various packaging segments.

Figure 5: Polymer utilization by application, FY13



Source: Agricultural Census, Analysis by Tata Strategic

Figure 6 : Processes in Plastic Industry

Plastic products	Fxtrusion	Films and Sheets, Fibre and Filaments Pipes, Conduits and Profiles, Miscellaneous applications
	Injection Moulding	Industrial Injection Moulding, Household Injection Moulding and Thermo- ware/ Moulded luggage
	Blow moulding	Bottles, containers, Toys and Housewares
	Roto moulding	Large circular tanks such as water tanks

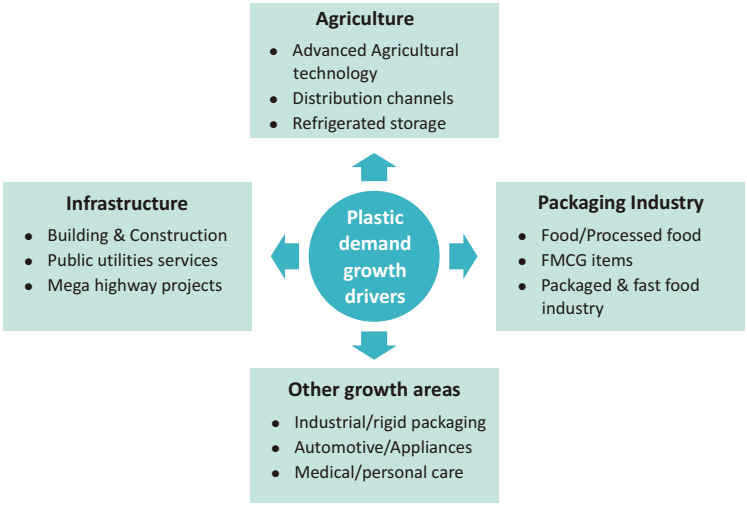
Extrusion process is the most commonly used process in India accounting for 60% of total consumption by downstream plastic processing industries. Injection moulding is the second highest process accounting for 25% of the consumption. Blow moulding is used for 5% of processes and Rotomoulding for 1% of the processes. The remaining is processed through various other niche and specialized processes.

3 Key growth drivers

A favorable cost benefit ratio and a versatile range of applications encourages the growth of plastics. The properties of these materials can be customized to meet specific demands by varying the chemical properties like molecular weight & side chain branching or by making copolymers and polymer blends.

Other major reasons for the plastic processing industry's growth are growth in the end use segments and higher penetration of plastics in various industry segments .The below figure illustrates major growth drivers for various industries-

Figure 7: Plastic products demand growth drivers



Agriculture

The practice of using plastic in agriculture is referred to as Plasticulture. India has a wide variety of agro-climatic conditions and each condition has its unique nature. Adverse conditions like low temperature and shortage of irrigation water, hot climate, high intensity rainfall, accumulation of water etc. can affect the agricultural production adversely. This causes low return from the agricultural system in many parts of the country and poor livelihood conditions of the farmers.

Plastics have played an important role in solving several of these challenges. The adoption of plastics in agriculture is to conserve the natural resources, to enhance production, productivity and quality of produce. Today, variety of products are available in the market like bird protection nets, mulching anti hail net etc. to tackle the conventional problems in agriculture. However, the use of plastics in agriculture sector is a very small percentage in India as compared to its adoption globally.

Plastics in agriculture are also used in forms such as fibers, films, sheets, pipes and tubes, woven fabrics, nettings, moulding, bags, pipes, storage tanks etc., for a variety of uses.

Automotive

The key growth drivers for Polymer Usage in automotive are

- Low vehicle penetration
- Rising income levels
- Growing middle class

Various Applications of Polymers in Automobiles are Bumpers, Dash Boards, Door Trims, Grills, Front End Module Carrier, Battery Containers, Engine Covers, Manifolds, Ducts, Seats, and various Interior parts[3]

Infrastructure

India's focus on infrastructure over the last decade made the country the second fastest growing economy in the world. Large investments in sectors such as water and sanitation management, irrigation, building & construction, power, transport, retail etc. continue to

[3] *http://www.export.gov/build/groups/public/@eg_main/@byind/@manufind/documents/webcontent/eg_main_041066.pdf*

been made. PVC and CPVC plays important role in the sustainable management of these sectors through various products like pipes, wires & cables, water proofing membranes, wood PVC composites, food and medicinal packaging etc.

These huge investments in infrastructure will result in making India a hub for PVC and CPVC product manufacturing leading to growth in plastics processing sector.

Packaging Industry

The following factors have played a vital role in the growth of the packaging industry in India over the years.

GROWTH IN RETAIL

Increased presence of global multinational companies has boosted the demand in the processed food, beverages, cosmetics, consumer products, toiletries and pharmaceutical space. The manufacturing units, especially the fast moving consumer goods (FMCG) manufacturers are exploring new markets continuously through newer retail models. This has widened the market and also increased the demand of packaging of the products.

a. GROWTH OF SMALLER PACKAGING

The current middle class population in India is approximately 30 Cr. which indicate that from afford ability point of view, the demand for smaller packaging is huge. This population is rapidly growing and hence this will drive the growth for packaging industry. Smaller packaging caters to even the rural population and lower income groups

b. CHANGING LIFESTYLE

Since the concept of globalization has penetrated the Indian market, significant cultural changes have been witnessed. People today are buying more of branded products and thus packaging is playing an important role in creating and sustaining the brand equity. With a higher per capita income, the demand of personal hygiene products and convenience products has increased[4] leading to increased demand for plastics.

[4] *http://www.onicra.com/images/pdf/Publications/PackagingIndustryfinal.pdf*

4 Emerging applications of plastics

The Indian plastic processing sector comprises of three segments namely injection molding, blow molding and extrusion, catering to the requirements of a wide array of applications like packaging, automobile, consumer durables, healthcare, among others. The following figure depicts the key plastic application sectors where some emerging applications have been noticed

Flexible packaging:

Flexible packaging is a sub segment of packaging industry and it is producing revolutionary products. These products focus on enhancing the shelf life of products by keeping intact the nutritional value of the enclosed product for e.g. Milk pouches & modified atmospheric packaging and has also reduced the cost of old style packaging considerably.

Figure 8: Emerging concepts in packaging industry

Automotive:

Long fiber reinforced thermoplastic (LFRT) is a new product which is used in making automotive products. It has the following benefits

- Greater design freedom
- Potential for parts consolidation
- Weight reduction
- Extreme toughness/Durability
- Dimensional stability
- Corrosion & chemical resistance
- Elimination of secondary operations like painting and welding
- Lower total system cost

Textile fibers:

A new kind of fibers have been introduced which trap Infra-redrays and keeps the body warm. It can be used to make woolen clothes for extremely cold weather.

Another category of fibers is used to make health care fabrics which can regulate the temperature & O2 levels in the body or provide protection against bacteria or are flame retardant.

5 Challenges faced by Plastic processing industry

Key challenges faced by the plastic processing industry in India are:

1. Highly fragmented market

The Indian plastics processing industry is highly fragmented and small and microplayers constitute majority of the units. Indian Petrochemical Industry is facing intense competition from the Middle East countries where price of feedstock ranges between one-fifth to one-tenth the prices prevailing in international markets.[5]

India's plastics market depends on labor intensive equipment which has adversely impacted the productivity. Unreliable power and high energy costs in India as compared with other countries are also constraints which hamper capacity utilization.

2. Addressing environmental myths

While the usage and benefits of plastics are manifold, it invariably gets branded as a polluting material. The myth regarding the polluting characteristic of plastics needs to be addressed. If plastics can be collected and disposed of or recycled as per laid down guidelines/rules then the issue of plastic waste can be suitably addressed. There is wide

[5] *http://www.sme.in/CurrentNews.aspx?NewsID=1586*

scope for industries based on re-cycling of plastics waste. This will not only address the issue of environmental degradation but will also generate capital.

3. Technology needs

The Indian Plastic processing industry has seen a shift from low output/low technology machines to high output, high technology machines. There has been some major technological advancement of global standards leading to achievements

However, India's technology needs are critical in areas like high production and automatic blow molding machines, multilayer blow molding, Stretch/ Blow Moulding Machines, specific projects involving high CAPEX like PVC calendaring, multilayer film plants for barrier films, multilayer Cast lines, BOPP and Nonwoven depend solely on imported technology/machinery. Other technological needs are:

- Multilayer blown film line up to 9/11 layers
- Automatic Block bottom bags production line
- Higher tonnage Injection Moulding machine >2000 T
- Higher tonnage >500 T all electric Injection Moulding machines

4. Price pressure

The profits of plastics processing industry is facing tough times because of increased input prices. In spite of higher volume realizations, increase in crude oil prices along with the continuous fall in rupee value has led to lowering profits in past years. Also hurting the manufacturers are factors like hike in import duty on raw materials and cut-throat competition from neighboring countries.

Further, free trade agreements signed with countries like Malaysia, Thailand, etc. results in dumping of cheap plastic goods in the Indian market. Consequently, Indian manufacturers are facing stiff competition from these countries.

Hike in import duty on polymers further compounded the situation of plastic manufacturers. Hence, imports of plastic products from neighboring countries increased, thereby impacting the sales volumes of the domestic plastic manufacturers.

6 Future outlook

The plastic processing industry has changed our lives in many aspects. It has the potential to continue to change the way we grow our crops, the way we build our roads, and the way we live everyday life. It has significant impact on our economy, generation of wealth and in job creation.

Currently plastic parks are taking shape in Northern India (at Panipat, Haryana and north Rajasthan); Gujarat (at Dahej and Sanand); Karnataka (at Narasapura Industrial Area, Harohalli); and Kerala. These parks would enhance the competitiveness of the plastic industry by providing them support in terms of infrastructure.

Plastics processing industry will need to invest in modern equipment to reduce costs and improve performance and improve installed capacities to achieve economies of scale so that the Indian subcontinent can reach its full potential.

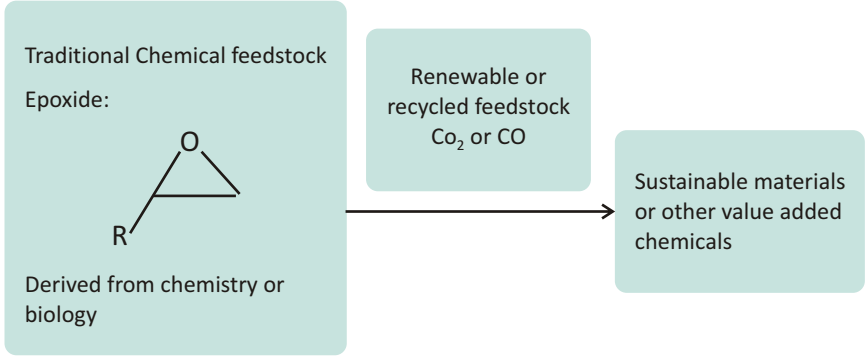
With Government's current campaign on ***'Make in India'*** which has a special focus on the chemical industry and aims to turn the country into a global manufacturing hub, a tremendous growth in the plastic processing sector is expected especially in downstream industries. The government should not hesitate to provide better infrastructure and favorable policies. Due to low plastic consumption in agricultural industry, the government should encourage the penetration of plastics into the agricultural industry.

The following are some new technologies which have the potential to take the plastic processing industry to one step ahead.

Use of bio technology for polymers Bio technology can be a powerful new driver for innovation. It also allows the use of non-petroleum renewable feedstock. This in turn can improve the carbon foot print and also reduce hazardous waste generation.

Polymers from CO_2 Using carbon dioxide as a feedstock instead of conventional petroleum-derived raw materials is an attractive alternative to produce polymers. Developing processes and products that are "sustainable" and have reduced "carbon footprint" have been important goals. CO2 is abundant, renewable, and inexpensive. [6]

Figure 9: Process of producing polymers from CO2

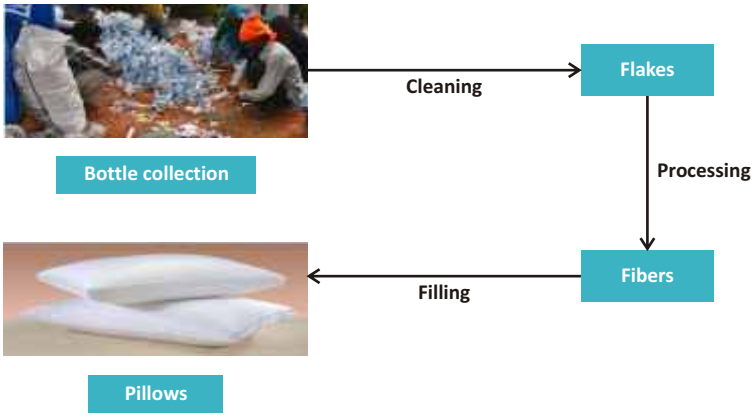


Recycling Along with earning adequate returns for shareholders, businesses should fulfill societal obligations such as recycling of plastic waste. Effective waste management solutions should be developed by all stakeholders including municipalities.

One method of sustainable recycling can be the collection of used waste bottles and recycling it to other useful forms such as fibers for pillows. This can reduce the land fill and also provides earning opportunities to the down trodden.

[6] *http://www.ihs.com/products/chemical/technology/pep/co2-based-polymers.aspx*

Figure 9: An example of plastic recycling



With adequate support from Government and growth in end use demand, our study indicates that the market for plastic processing industry in India is expected to grow at a CAGR of 10% from FY'13 to reach 18 MnMT by FY '18. In value terms, it is likely to grow at a CAGR of 11% to reach INR 1,37,000 Cr. by FY '18.

A Window to Plasticulture

The growing use of plastics in different segments of economy has been very useful. The use of plastics esp. in agriculture has helped farmers increase crop production, improve food quality as also in more efficient usage of water resources. Similar has been their contribution to other key sectors namely; Automotive, Construction, Electronics, Healthcare, Textiles, and FMCG etc. The sector has been growing at a very good pace at above 10% for the past many years and is also highly employment intensive. With a turnover of above Rs.90,000 crores and employing above 3.6 million persons (both directly and indirectly) the sector is making good contribution to the national economy.

There is a huge unrealised potential of further growth of plastic industry as indicated by the present very low per capita consumption level in the country. Per capita consumption of plastics in only about 9kgs in india compared to about 95 kgs in USA and about 65 kgs in Europe, 46 kgs in China and the world average of about 28 kgs.

India observes significant regional diversity in consumption of plastics with Western India accounting for 47%, Northern India for 23% and Southern India for 21% of consumption. Bulk of the consumption in Northern India is from end use industries of Auto, packaging (including bulk packaging), plasticulture applications, electronic appliances etc. which are concentrated mostly in UP and Delhi- NCR (>50%). Northern India is said to have an inherent disadvantage of being away from ports hence a difficult target for low cost supply of plastics through import. However this same situation makes the domestic plastic processing more competitive and provides significant opportunity.

Population Vs Petrochem Demand

Region	Population (%age)	Demand (%age)
Northern	33	24
East	27	12
West	21	45
South	19	19

This indicates regional imbalance as also potential in North India.

Due to their versatility, and imperviousness to water, Plastics save significant amounts of energy and water resources and emit lower quantum of green house gases. They have already displaced many traditional materials, such as wood, leather, paper, metal, glass and ceramic, in most of their former uses.

- **Plasticulture applications** are one of the most useful indirect economy & agriculture inputs with huge unrealized potential such as:
- **Water Management** - Lining of canals, ponds & reservoirs with plastics film/Drip & sprinkler irrigation system/Water conveyance using PVC & HDPE pipes & Sub-surface drainage
- **Nursery Management** - Nursery bags, Pots, Pro-trays, Root trainers, Coco peats, Hanging baskets, Plastic trays, etc.
- **Surface cover cultivation** - Soil Solarisation /Plastics Mulching
- **Controlled environment agriculture** - Greenhouses/Shade net houses/Plastic tunnels/ Plant protection nets
- **Innovative Packaging Solutions** - Plastic crates, bins, boxes, leno bags, unit packaging nets etc/CAP covers, controlled atmospheric packaging (CAP) & modified atmospheric packaging (MAP)
- Organic Farming-HDPE vermin bed
- **Benefits of Plasticulture Applications** - These can help the country to meet both food and nutrition needs at a time when population growth is @ +1% per annum with depleting natural resources such as land & water.

S.No.	Plasticulture Applications	Water Saving (%)	Water Use Efficiency (%)	Fertilizer Use Efficiency (%)
1	Drip Irrigation System	40-70	30-70	20-40
2	Sprinkle Irrigation System	30-50	35-60	30-40
3	Plastic Mulching	40-60	15-20	20-25
4	Greenhouse	60-85	20-25	30-35
5	Shade nets	30-40	30-50	Not Available
6	Plastic Tunnel	40-50	20-30	Not Available
7	Farm Pond Lined with Plastic Film	100	40-60	Not Applicable

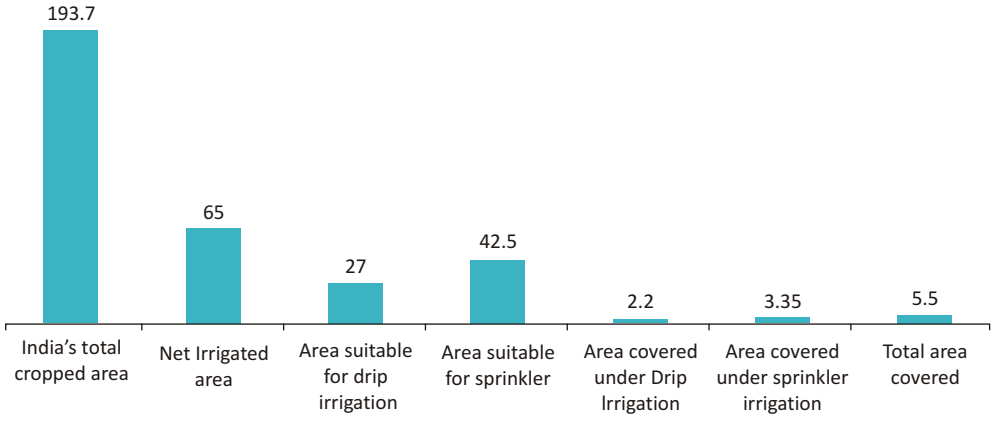
(Source: National Committee on Plasticulture Applications in Agriculture and Horticulture, Department of Agriculture and Cooperation, Ministry of Agriculture Govt. of India)

While the usage and benefits of plastics are manifold, the sector has an image issue (which can be linked to inappropriate civic handling of waste). The myth regarding the polluting characteristic of plastic needs to be addressed. Plastics are chemically inert substances and they do not cause either environmental or health hazards. If plastics can be collected and disposed off or recycled as per laid down guidelines/rules, the issue of plastic waste can be suitably addressed. In fact, there is good potential for industries based on re-cycling of plastics waste.

In recent times, there have been developments which have resulted in increased availability of raw materials and opportunities in the plastics sector in north India. The refinery project of HPCL-Mittal group at Bhatinda has been commissioned and the same includes a Polypropylene unit. Similarly there is increased availability of raw materials from the Panipat Petrochemical complex of IOC.

However, the quantum of usage of plasticulture applications is still limited in India. Out of total 193.7 million hectares (mha) of cropped area in the country, 65.0 mha is under different forms of irrigation sources out of which only about 5.5 mha is under Micro Irrigation. Estimates show that the total cropped area suitable for drip irrigation in the country is to the tune of 27 mha and sprinkler irrigation is about 42.5 mha. Thus there is huge unrealized potential in this sector.

Agriculture Area (Million Hectare)



(This article is co authored by: Mr Prabhsharan Singh; prabhsharan.singh@ficci.com & Ms Charu Smita; charu.smita@ficci.com)

About Tata Strategic

Founded in 1991 as a division of Tata Industries Ltd, Tata Strategic Management Group is the largest Indian own management consulting firm. It has a 50 member strong consulting team supported by a panel of domain experts. Tata Strategic has undertaken 500+ engagements, with over 100 clients, across countries and sectors.

It has a growing client base outside India with increasing presence outside the Tata Group. A majority of revenues now come from outside the group and more than 20% revenues from clients outside India.

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- Throughput
- Key Milestones
- Profit
- Lead Time

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Industry's Voice for Policy Change

Federation of Indian Chambers of Commerce & Industry

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global economies. A non-government, not-for- profit organisation. FICCI is the voice of India's business and industry.

FICCI draws its membership from the corporate sector, both private and public, including SMEs and MNCs; FICCI enjoys an indirect membership of over 2, 50,000 companies from various regional chambers of commerce. For more information please log on to www.ficci.com

Organization of Plastics Processors of India

Organization of Plastics Processors of India (OPPI) was established in 1984 to promote healthy growth of the plastics processing industry in India in the overall interests of the processors, consumers and society at large; and creates a platform for interaction with the government for formulation of progressive policies and good manufacturing practices. It represents major segment of plastic processing industry.

For more information please log on to www.oppindia.org

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