India – A New Glass Hub of the World

How?

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Glass Industry- Some Current Facts

01 Glass is an inorganic product produced by melting a mixture of silica sand, soda ash, limestone, with desired metallic oxides that serve as coloring agents.

02 Four main segment of glass industry are container glass, flat glass, fiber glass and specialty glass.

03 Growth in global glass market is significantly dependent on the growth of Pharma, food and beverage, Cosmetics, building construction and automobiles.
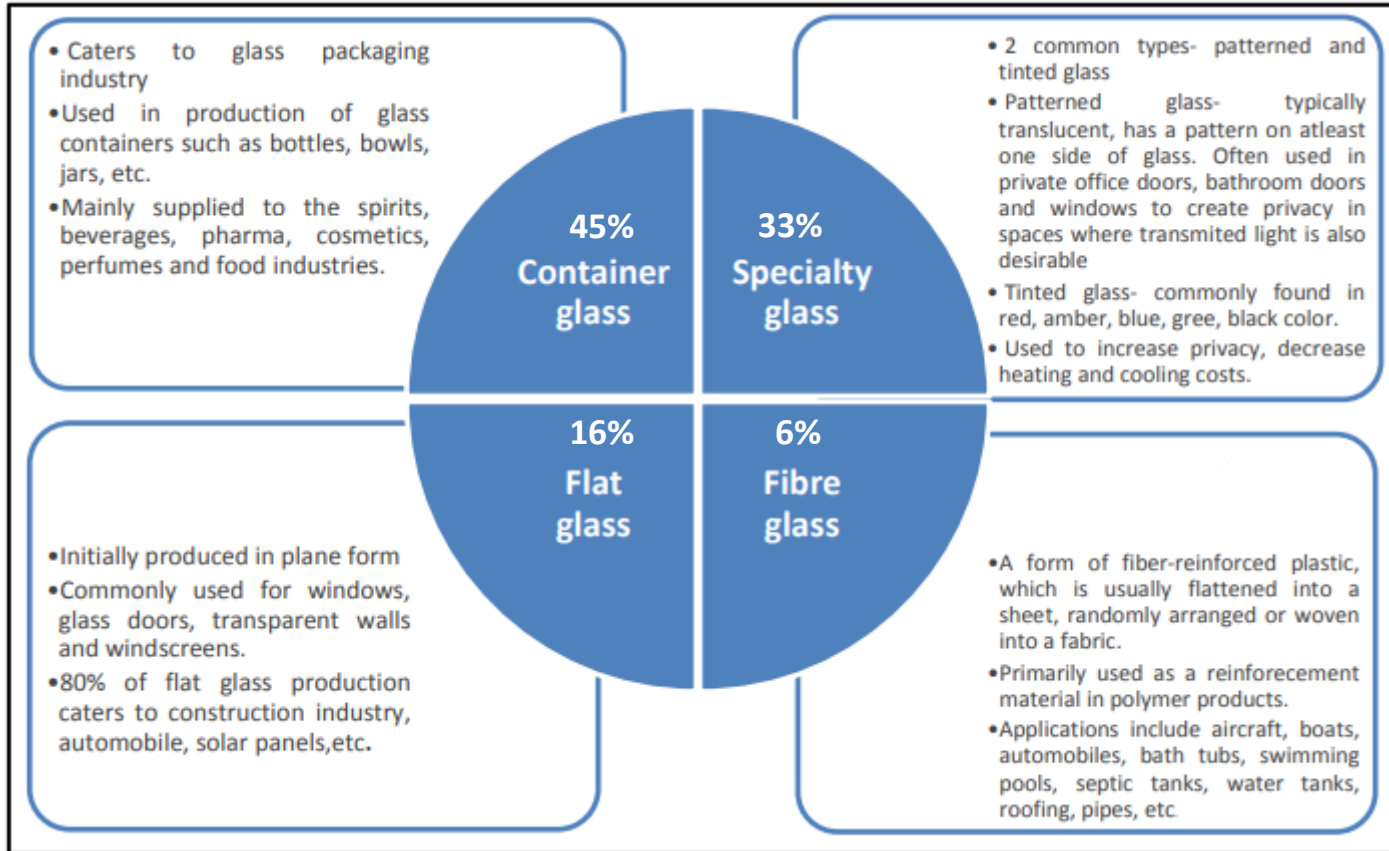
04 Glass is one of the most widely used end user products in daily households. China, Germany, USA and France are the biggest exporters of glass globally.

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Glass Industry -Segments

- Caters to glass packaging industry
- Used in production of glass containers such as bottles, bowls, jars, etc.
- Mainly supplied to the spirits, beverages, pharma, cosmetics, perfumes and food industries.

- 2 common types- patterned and tinted glass
- Patterned glass- typically translucent, has a pattern on atleast one side of glass. Often used in private office doors, bathroom doors and windows to create privacy in spaces where transmited light is also desirable
- Tinted glass- commonly found in red, amber, blue, gree, black color.
- Used to increase privacy, decrease heating and cooling costs.

45% Container glass

33% Specialty glass

16% Flat glass

6% Fibre glass

- Initially produced in plane form
- Commonly used for windows, glass doors, transparent walls and windscreens.
- 80% of flat glass production caters to construction industry, automobile, solar panels,etc.

- A form of fiber-reinforced plastic, which is usually flattened into a sheet, randomly arranged or woven into a fabric.
- Primarily used as a reinforecement material in polymer products.
- Applications include aircraft, boats, automobiles, bath tubs, swimming pools, septic tanks, water tanks, roofing, pipes, etc

Source: IBEF (https://www.ibef.org/)

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Can India Become a Glass Hub?

- Global Market Size   - USD 200 Billion (INR 14.22 Lakh Crores)
- Total Container Glass Market   - USD   70 Billion (INR   4.97 Lakh Crores)
- Indian Glass Market –Estimated USD   2 Billion (INR   0.14 Lakh Crores)
- The per capita consumption of container glass in India is at 2.5 kg; much lower compared to other nations. This provides a possibility of good upside potential.
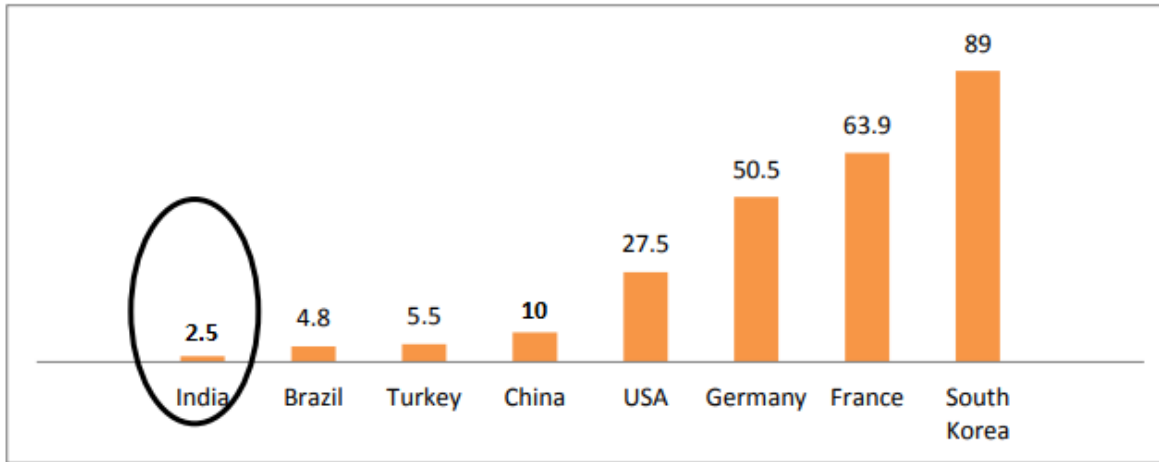
Source: Hindustan National Glass & Industries Ltd. investor PPT data through Economist Intelligence Unit

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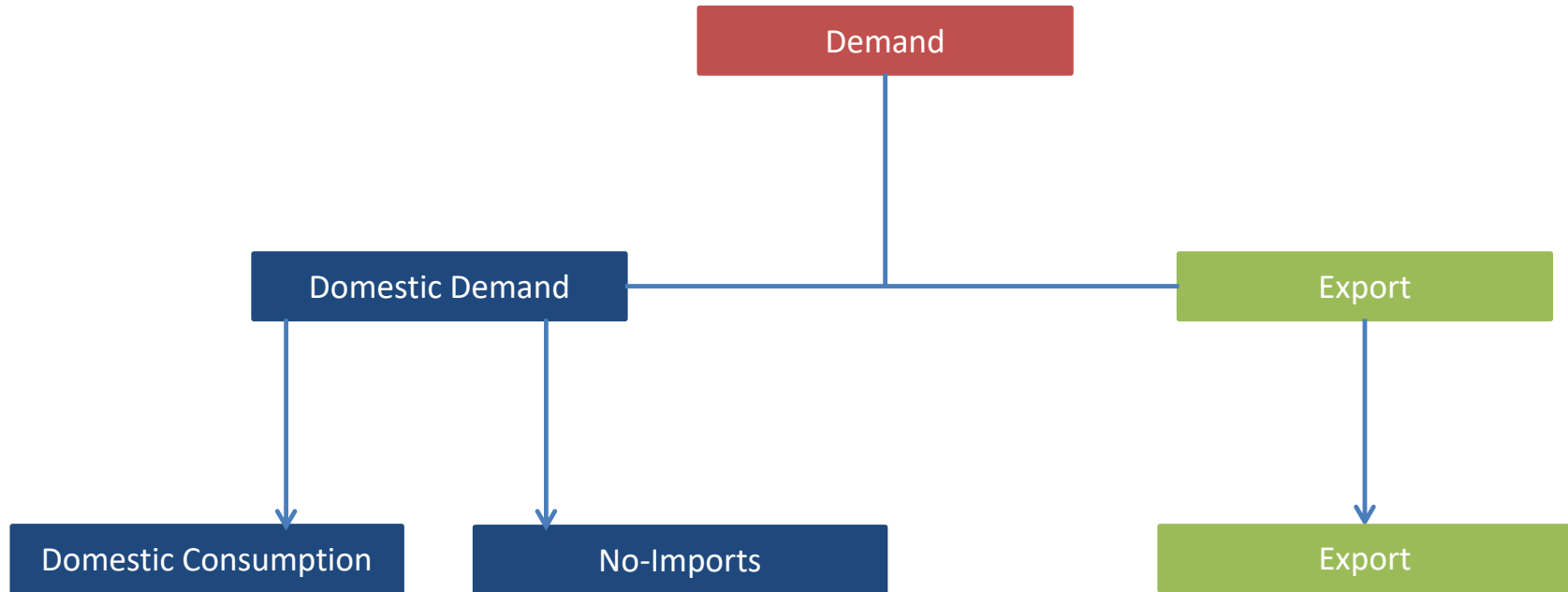# Impact of increasing Per Capita Glass Consumption – Phased Approach

India – 2.5 Kg

China – 10 Kg

Germany – 50.5 Kg
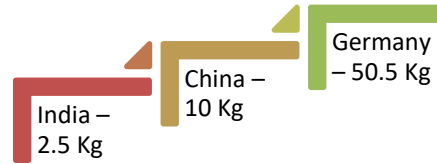
Classification	India (Current)	China	Germany
Per Capita Consumption	2.5	10	50.5
Capacity (MT)	3.3 Million	13.3 Million	67.2 Million
Additional No. of Plants (Assumed Plant Capacity – 1,000 MT)		27 Plants	175 Plants
Investment		USD 1.90 Billions (INR 13,517 Crores)	USD 12.32 Billion (INR 87,650 Crores)
Generation of New employment		50,000 Staff	320,000 Staff

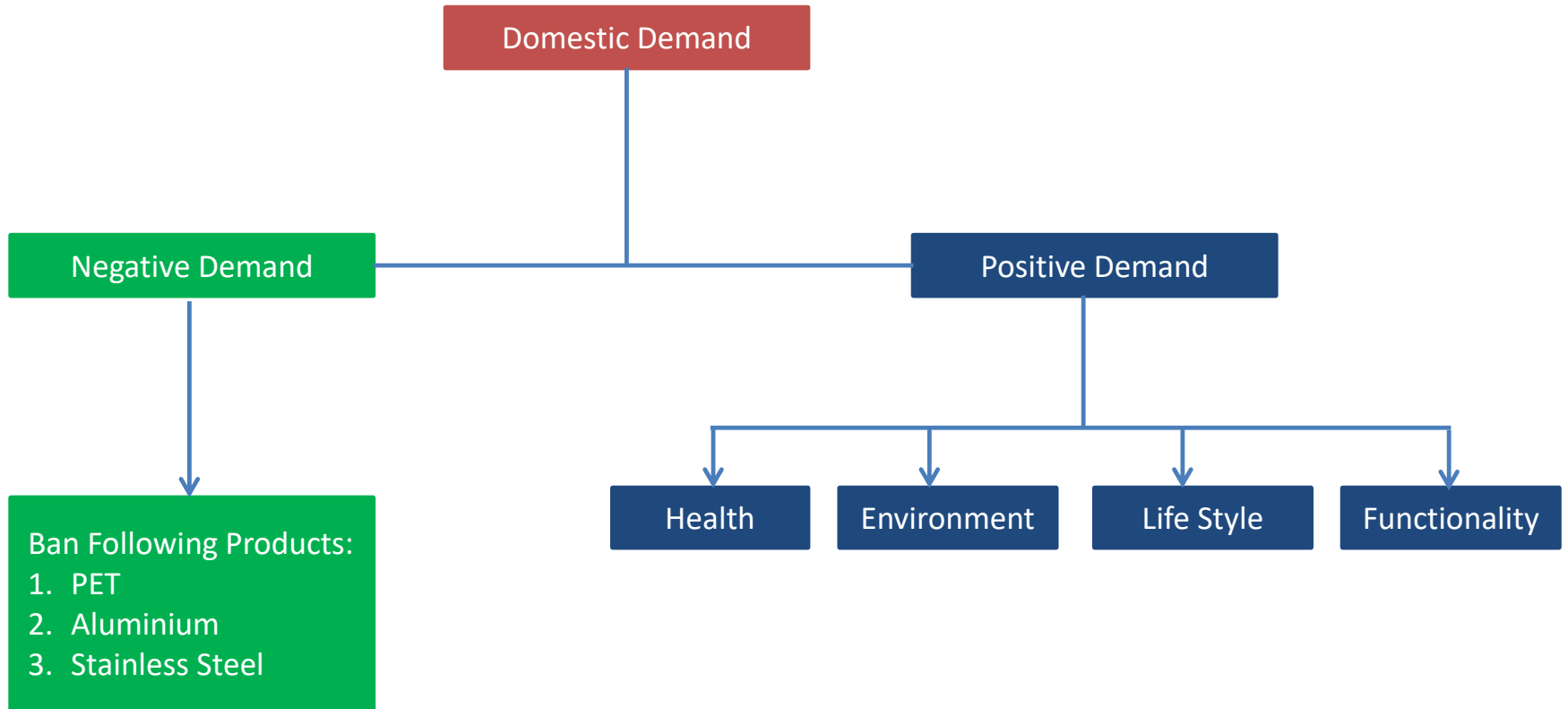AGI glaspac

Supply

Demand

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                          Demand

Domestic Demand                          Export

Domestic Consumption    No-Imports       Export
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How to Increase Domestic Demand?

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                        ┌─────────────────────┐
                        │   Domestic Demand   │
                        └─────────────────────┘
                                   │
         ┌─────────────────────┐       ┌─────────────────────┐
         │   Negative Demand   │───────│   Positive Demand   │
         └─────────────────────┘       └─────────────────────┘
                  │
                  ▼
  ┌──────────────────────────┐   ┌─────────┐ ┌─────────────┐ ┌───────────┐ ┌───────────────┐
  │ Ban Following Products:  │   │ Health  │ │ Environment │ │ Life Style│ │ Functionality │
  │ 1.  PET                  │   └─────────┘ └─────────────┘ └───────────┘ └───────────────┘
  │ 2. Aluminium             │
  │ 3. Stainless Steel       │
  └──────────────────────────┘
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Domestic Demand

Negative Demand

Positive Demand

Ban Following Products:
1. PET
2. Aluminium
3. Stainless Steel

Health

Environment

Life Style

Functionality

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Negative Demand-Reduce Using PET, Aluminium & Stainless Steel

PET

- Decomposition - Leaching

- Difficult to Recycle

- Hard to Reuse

- Hazardous

Aluminium

- Not Durable

- Risk of acquiring Alzheimer's disease

- Requires special processes to be welded

- More Expensive

Stainless Steel

- Low elasticity

- Difficulty in welding

- Very brittle

- Poor Heat Distribution

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Positive Demand - Promote Health Benefits

- ✓ 100% pure raw material – Sand, Soda ash and limestone with no harmful chemicals or toxins to leak from the glass packaging into the food.

- ✓ Glass packaging is safe as it preserves food, keeps it fresh for longer periods of time

- ✓ A glass container can go from a recycling bin to a store shelf in as little as 30 days

- ✓ Glass has an almost **zero rate of chemical interactions**, ensuring that the products inside a glass bottle keep their strength, aroma, and flavor.

- ✓ Heating glass in microwave is safe

- ✓ Switching to reusable water bottles can potentially save money over lifetime

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Positive Demand – Promote as Environment Friendly

Safety

- **Nonporous surface of glass doesn't absorb food and germs**
- **Building glass is rust resistant , doesn't degrade naturally.**
- **Patterned glass introduce privacy in places where natural light is desired.**
- **Impossible to conduct electric current as it is excellent insulator against electricity.**
- **Natural barrier for high temperatures or bacteria, keep the food fresh for longer period of time.**

At 50% recycled glass in manufacturing, approx. 2.2 million MT of CO2 emissions = 400,000 cars off the road each year

Environment

- **Recycling glass decreases amount of raw materials used, lessens demand for energy, cuts CO2 emissions, extends furnace life**
- **Recycling broken glass, using 50% cullet, will reduce carbon footprint by 22%**

Health

- **Lowering glass weight by 15–20% using advanced technologies can result in Lower primary energy requirement , Reduction in carbon footprint & Lowering of toxicity for *Human beings.***
- **Glass is by far the most eco-friendly packaging material & with 75% recyclability of glass , the toxicity potential gets further reduced by almost 40% when compared to other packaging products which can effects the Human Health badly.**

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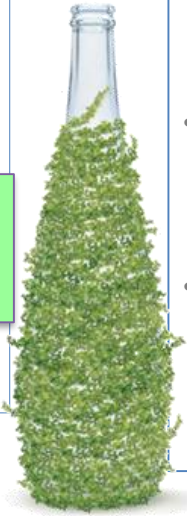
Learn to enjoy every second of your *Life*

- ✓ Attractive for Modern Youth
- ✓ Responsible & environment friendly product
- ✓ Introduce as a subject in schools & colleges
- ✓ Open Indian Institutes for Design & Glass
- ✓ Organize Technology related exhibitions
- ✓ Introduce research projects and case studies for benchmarking international standards.

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Positive Demand - Promote Functionality

- ✓ Glass can be rolled and molded into different shapes, colors and sizes based on requirement.

- ✓ It is very hygienic, doesn't have any odor and doesn't allow any gases to pass through it.

- ✓ Glass used for flooring is toughened to withstand load. The anti-slip top surface provides slip resistance value when wet or dry.

- ✓ Transparent floor allows light to enter below area

- ✓ Due to strong chemical bonds, glass has high tensile strength.

- ✓ It is imperative part of modern Appliances & Electronics - Oven doors, cook top, LED, computer screens, smart-phones, windscreens, backlight.

- ✓ It is also used in Fibre optic cables to carry information (phones, TV, computer)

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Glass bridge in Hongyagu, China

City of Arts and Sciences Valencia, Spain

The Sage Gateshead, England

Burj Khalifa, Dubai

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Glass bottles & containers look **NEAT, PREMIUM and ELEGANT**…

KEEPS FOOD & LIQUIDS SAFE with no transfer of toxins/germs from non porous surface…

MAINTAINS FOOD FLAVOR as food tastes fresh, clean and is without food odors & residual flavors…

EASE OF STORAGE & CLEAN-UP as it reduces food waste & easy to clean

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Positive Demand – Promote Building Materials

The glass that absorb, refracts or transmits light, can be made transparent or translucent so it adds extraordinary beauty to the building

Glass is fully weather resistance so it can withstand the effects of the wind, rain, or the sun and can retain its appearance and integrity

Glass has a smooth glossy surface so it is dust proof and can be easily cleaned

Available in varieties of colors and when we combine the glass sheet in laminated or insulated units, they change in color and appearance

100% Non degradable and recyclable

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Positive Demand – Promote Building Materials

The glass is stable over a wide range of temperature. It is used for fireplace glass, high-temperature light lenses, and wood burning stoves, cooking tops & high-temperature areas where low expansion is needed.

Glass protects against outside barriers - noise, air, water and most of the acids

Used in the interiors, glass saves space

Glass allows natural light to enter the house even if doors/windows are closed, thus it saves energy and also lowers the electricity bills, brightens up the room

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How to Increase Domestic demand?

01 Product Innovation and Automation in Glass

02 Digitalization in Glass industry

03 Catering to New Segments–Ice Cream jars, juice bottles

04 Creative & Efficient Designs

05 Enhance manpower skill set

06 The activities of a company associated with buying.

07 Better Govt. Import & Export Policies

08 Promoting Container Glass Over Pet Bottles

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How to increase Exports?

FTA Agreement

Zero Duty on Glass

Export Incentives

Subsidy-Credit & Insurance
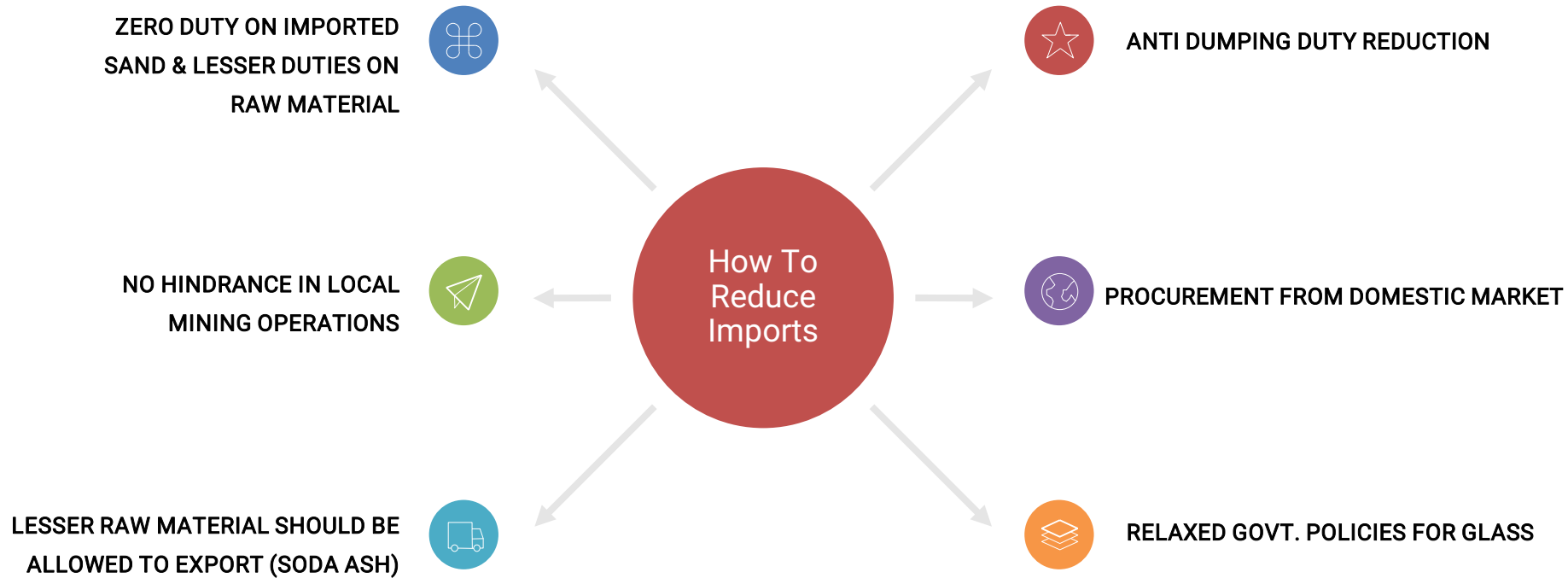
Reduce Barriers for FDI

Support from DGFT for Policies

Low-Cost Outbound Freight

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ZERO DUTY ON IMPORTED SAND & LESSER DUTIES ON RAW MATERIAL

ANTI DUMPING DUTY REDUCTION

How To Reduce Imports

NO HINDRANCE IN LOCAL MINING OPERATIONS

PROCUREMENT FROM DOMESTIC MARKET

LESSER RAW MATERIAL SHOULD BE ALLOWED TO EXPORT (SODA ASH)

RELAXED GOVT. POLICIES FOR GLASS

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Actionable Points to achieve the Road map

AIGMF should form a steering Committee to execute the following:

- Formulate detailed Plan for finalizing the road map.

- Liasoning with Government to simplify policies & procedures.

- Undergo projects for studying detailed demand – Domestic & Export.

- Collaborate with Glass & design institutes & introduce glass as a Subject.

- Support various Research and Development initiatives for Glass.

- Work together with technology based firms to develop innovative value added products.

- Partner with Supply chain organizations - Work on developing cost effective purchasing strategies & optimized logistical networks.

- Explore , Train & Develop low cost raw material producers.

- Organize Awareness programs, Seminars & Exhibitions to promote benefits of glass.

- Award and reward the efforts of various Individuals / Institutes / Business groups.

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THANK YOU

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