



# Role of Glass Packaging in Promoting Safety & Security for consumers



A Presentation by

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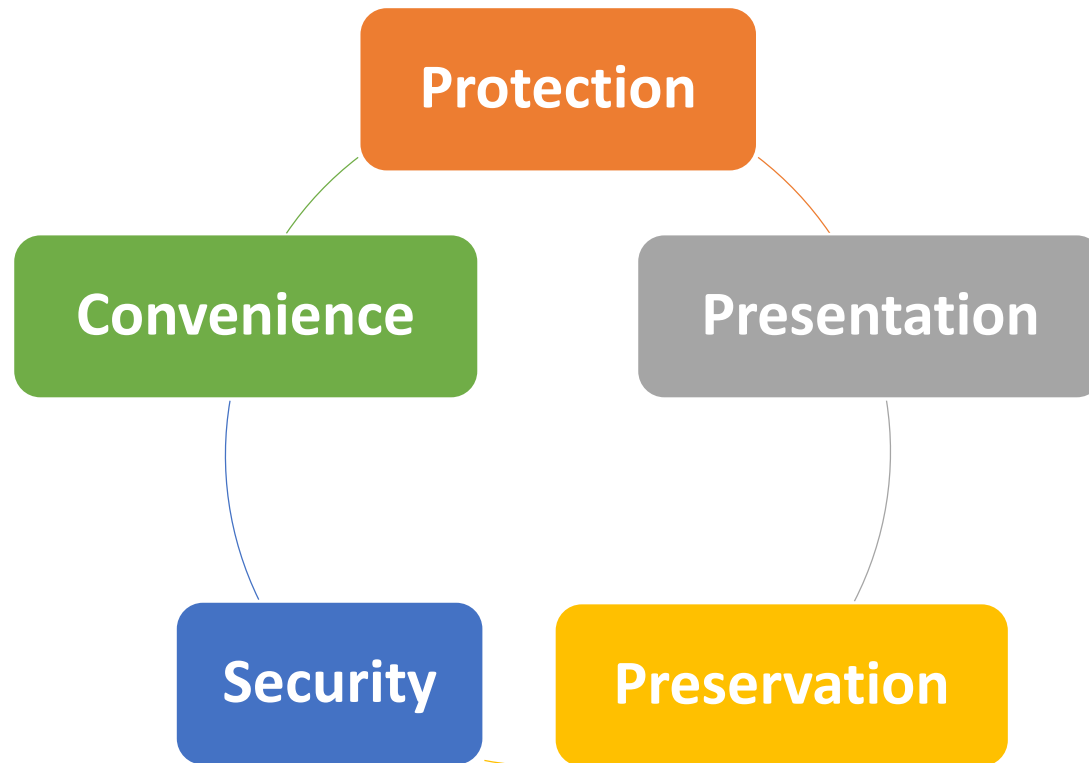
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# Definition Of Packaging & its Function

Packaging is the science, art & technology of enclosing & protecting product for storage, distribution, its sales & safe usage.

## Objectives & Function of Primary Packaging



“Packaging can be theatre, it can create a story”

Steve Jobs

## Primary Packaging

- A material comes in direct contact with content

## Secondary Packaging

- Used outside the primary packaging for grouping & containment. Like CBB/MONO Carton etc.

## Intermediate packaging

- Used to protect product from shock & vibration as intermediate cushioning material/BOPP tape

## Tertiary Packaging

- Used for bulk handling during ware housing, distribution & shipping. Like pallets

# Necessary Qualities for Packing Material – DO's and DON'Ts



1. Protect the contents from environment conditions.
2. Must be FDA approved.
3. Must meet applicable tamper resistance requirements.
4. Must be adaptable to high speed packing.



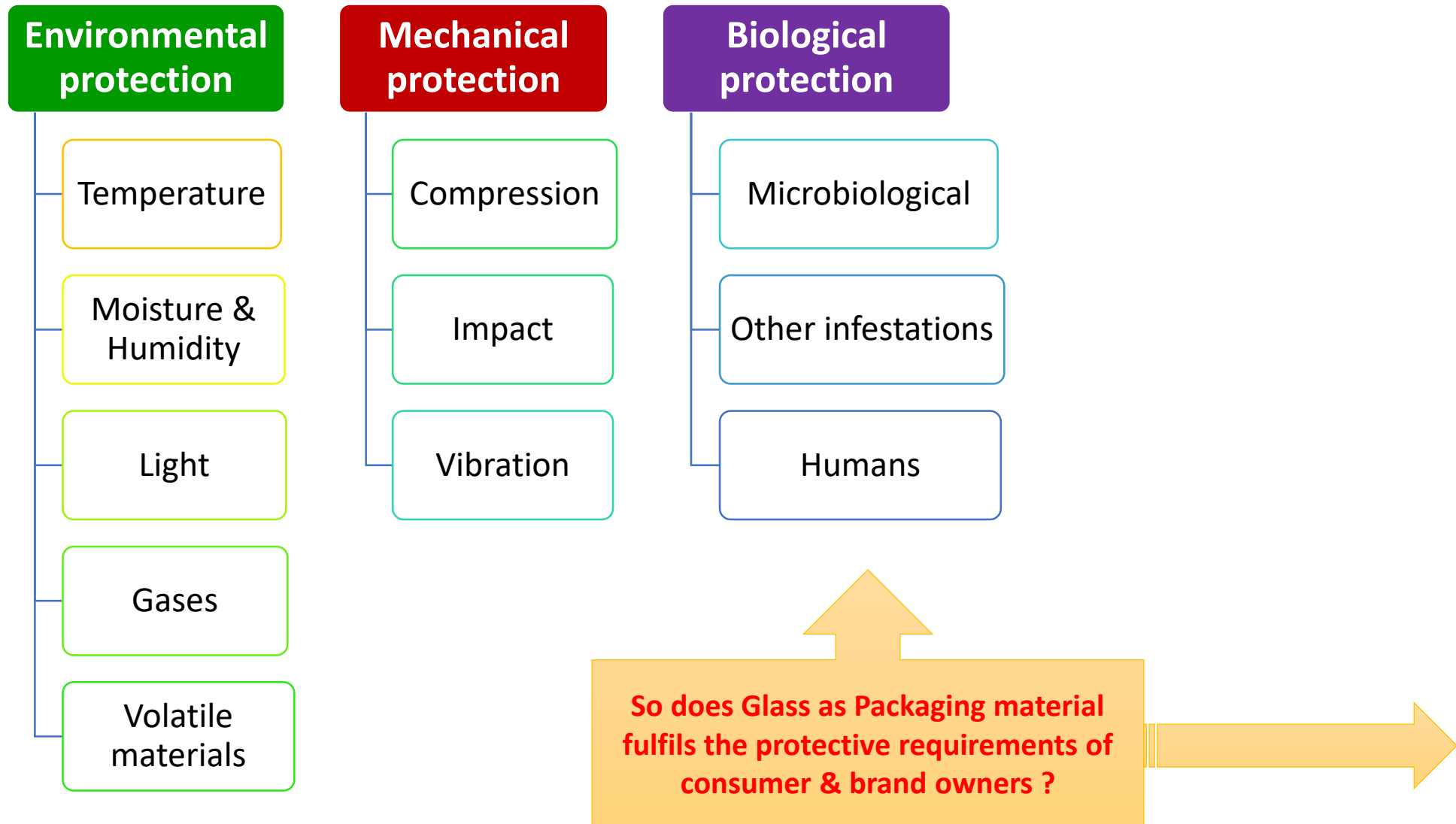
1. Must not be reactive to the product.
2. Must not alter the taste or odor of the product.
3. Must be non toxic.

Today, we need a packaging material that meets all the filling requirements, protects the contents & is most environment friendly

**Glass**



# Packaging Material – Needs to be protective



# ...evaluating Glass as primary packaging for safety & security



## Best Barrier Protection

Zero Oxygen & Water vapor transmission rate

## Exceptional Preservation

Totally inert, doesn't interact or migrate any substance to the contents & provide longer shelf life to product

## Superlative Presentation

Excellent transparency & different molded shapes gives consumer real display value of product. Value addition can be done with multiple option of decoration viz engraving/de-bossing/etching/frosting/ACL printing/UV printing/sleeving/coloring etc. is possible in glass to improve Brand Value

## Unsurpassed Security

Multiple choices of closures to guards & provide temper/pilferage evidence. Glass also prevent counterfeiting of product as it needs Huge investment to manufacture glass container & secondary markets can be cracked easily.

## Best Convenience

Adequately designed for single & multiple serving with easy to open closures like RSP/ROPP/LUG/CC/GUALA/PT/Twist off/Ring Pull etc. No need to transfer the product for preservation after opening the seal

# Glass – what & why

- ✓ Made from all natural and sustainable raw material
- ✓ Mixture of silica sand, soda-ash, lime stone and other trace elements
- ✓ Glass is 100% Recyclable and can be re-used endlessly
- ✓ Glass is chemically inert and pure
- ✓ Glass is “Generally rated as safe (GRAS)” and is graded safe by the U.S. Food & Drug Administration

Every ton of glass recycled saves 322 KwH of energy, 246 kg of CO2 & 1200 kg of virgin raw material

Helps in Savings on Waste collection, Transportation and Disposal costs

Product packaged in glass denotes premium quality

Most suitable for high speed filling

Reduces the Quantity of waste to be treated or disposed

# Packaging : A safety Perspective of Glass Packaging



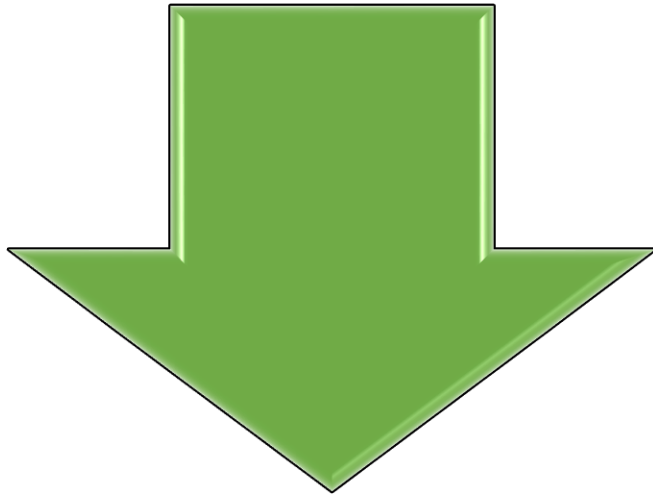
Safety Aspects	Glass
Inertness	✓
Impermeability	✓
Doesn't impart Odor	✓
No leaching	✓
Recyclability	✓
Microwave Safety	✓
FDA Approval	✓
Hermetic Sealing Capability	✓
Long Shelf Life	✓

**Hence Glass is -**  
✓ **Safer**  
✓ **Superior**





Sustainability could be defined as an ability of something to be maintained , what we need to live now, without jeopardising the potential for people in the future to meet their needs



A packaging is called sustainable, if it is safe & healthy for individuals & communities throughout its life cycle. If packaging is said to be sustainable, it should be able to continue forever, like glass packaging is sustainable since its inception from first BC, when 1<sup>st</sup> glass bottle was made. It will be sustainable for future generations to come....

## What is LCA ?

The Life Cycle Assessment (LCA) is a tool to measure, assess and orient improvements in the environmental performance and impact of a product from raw materials through to production, use, and end-of-life phases.

## Why it is important ?

- ✓ AIGMF commissioned the study to establish a clear understanding of the environmental impact of container glass at all stages of the life cycle.
- ✓ The study will also help glass manufacturers to identify and investigate potential improvement opportunities for container glass packaging.

The study was conducted on Cradle – to – Cradle approach which is the ultimate test in assessing the environmental impact of a product because it ensures that all aspects of a product's life, end-of-life and reincarnation are accounted for.

## Methodology

- ✓ Data collected on Upstream processing , Transportation, Production & end-of-life disposal.
- ✓ Site visits done for 24 sites of various member companies of AIGMF.
- ✓ The LCA model was created using the GaBi 5 Software system for life cycle engineering, developed by PE International AG. The GaBi database provides the life cycle inventory data for several of the raw and process materials obtained from the upstream system.

- In India, only glass is being reused(30%)
- Very high landfill rate (Up to 80%) for other packing materials
- Significant open burning for used materials in case of others, leading to environment pollution & health hazard
- Glass is by far the most eco-friendly material while packaging is concerned
- Shelf-life of Food & Beverages with glass container is much more than other packaging mediums

# LCA Study on container glass in India – Key Findings

Effect of weight reduction & recycling on environmental profile of glass

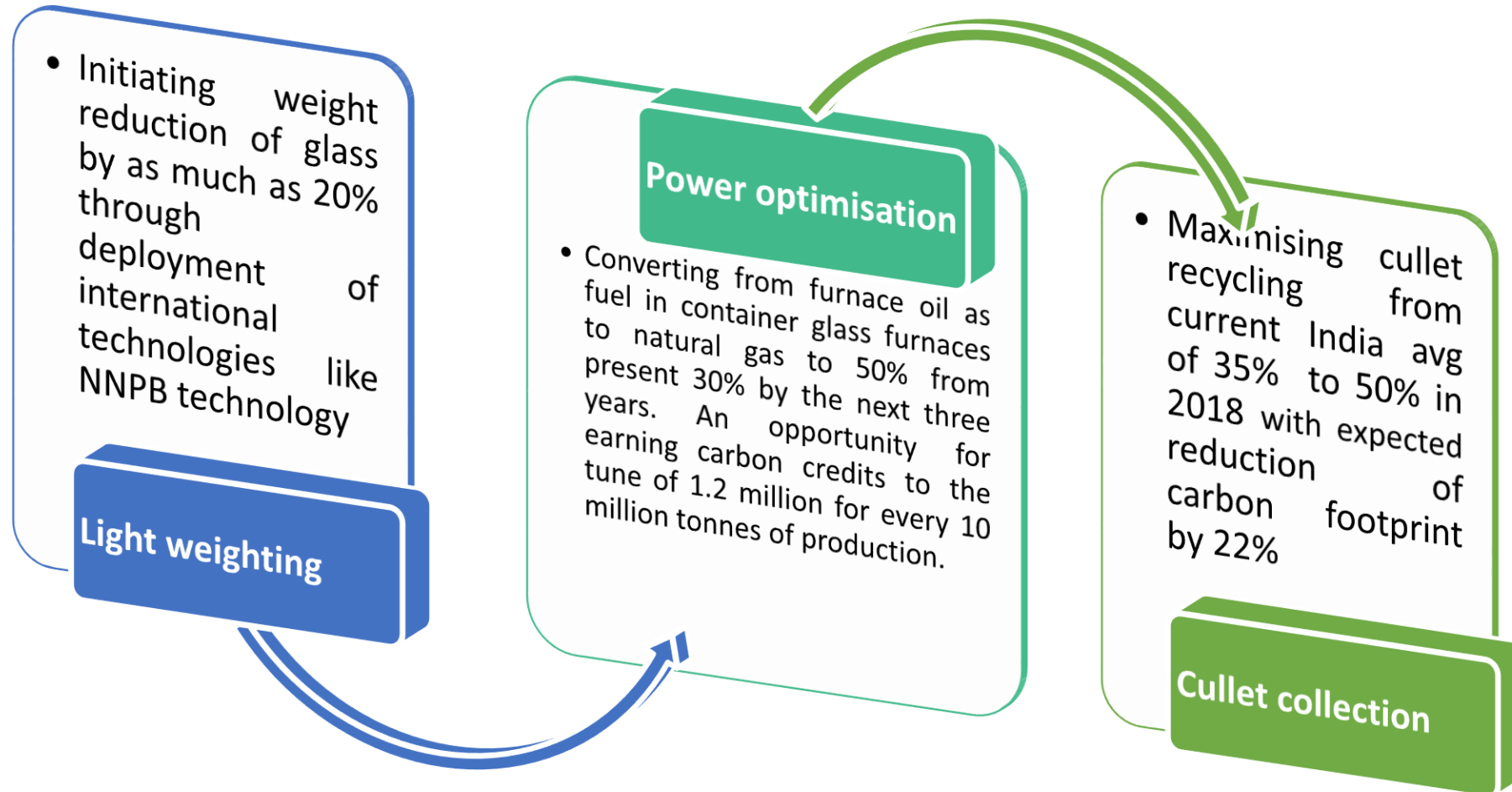
CML2001 - Nov. 2010	Weight reduction (-20%)	Recycling (75%)	Weight reduction (-20%) & Recycling (75%)
Acidification(increase in acidic nature of soil & oceans)	18%	40%	45%
Eutrophication(Depletion of dissolved oxygen in water)	17%	37%	44%
Global Warming	18%	39%	50%
Human Toxicity(Harm from chemical released)	15%	15%	27%
Terrestrial Ecotoxicity	17%	35%	52%
Photochem. Ozone Creation	18%	43%	45%
Primary energy demand from ren. and non ren. resources	16%	31%	41%

**With increased recycling & reduced weight , environmental effects of glass can be reduced by 50%.**

Source : LCA report on container glass, AIGMF

# LCA Study on container glass in India – Recommendations

Glass manufacturers to lower environmental effects of glass to establish glass' green edge over other packaging mediums on human and environment impact parameters through.....



Source : LCA report on container glass, AIGMF

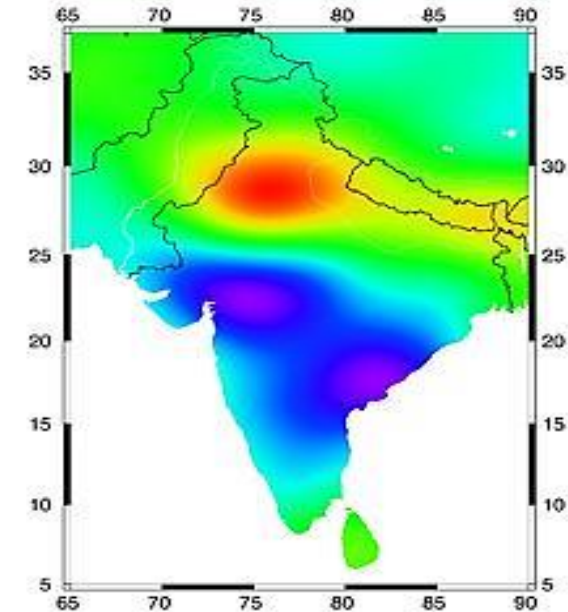
# Water footprint – Glass has minimal impact

**Freshwater is a scarce resource; its annual availability is limited and demand is growing**

"If measures are not taken to ensure sustainable groundwater usage, consequences for the 114 million residents of India may include a collapse of agricultural output and severe shortages of potable water,"

Matt Rodell, NASA

The map shows groundwater changes in India during 2002-08, with losses in red and gains in blue. The estimated rate of depletion of groundwater in northwestern India is 4.0 centimeters of water per year



Source: NASA



**500 ml glass bottle will have water footprint of approx. 127 ml, much less than what is required for other packaging materials**

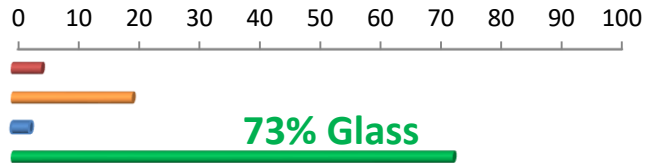
- ❑ **100% Recyclable and can be re-used endlessly**
- ❑ **Eco-friendly** packing material
- ❑ **Chemically inert** and pure
- ❑ **Every ton of glass recycled saves 322KwH of energy, 246 kg of CO2 and 1200 kg of virgin raw material**



# What the consumers say across the globe ...

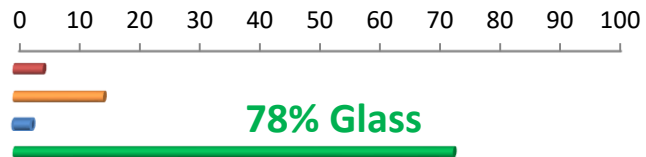


## Trust Glass



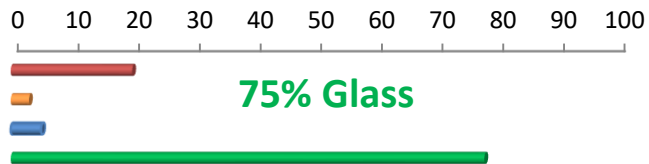
### Highest Quality

73% of consumers surveyed believe that **glass keeps the highest quality of any container**



### Most Pure

When purity is essential, 78% of consumers surveyed feel **glass is best at maintaining that purity.**



### Truest Flavour

75% of consumers surveyed agree that **glass keeps the truest taste and flavor of the product inside.**

**Glass has been the preferred packaging choice for food and beverages since it was first introduced.**

**It's no wonder the leading food, beverage, beer, wine and spirits brands continue to trust glass containers to preserve both their products and their brand image.**



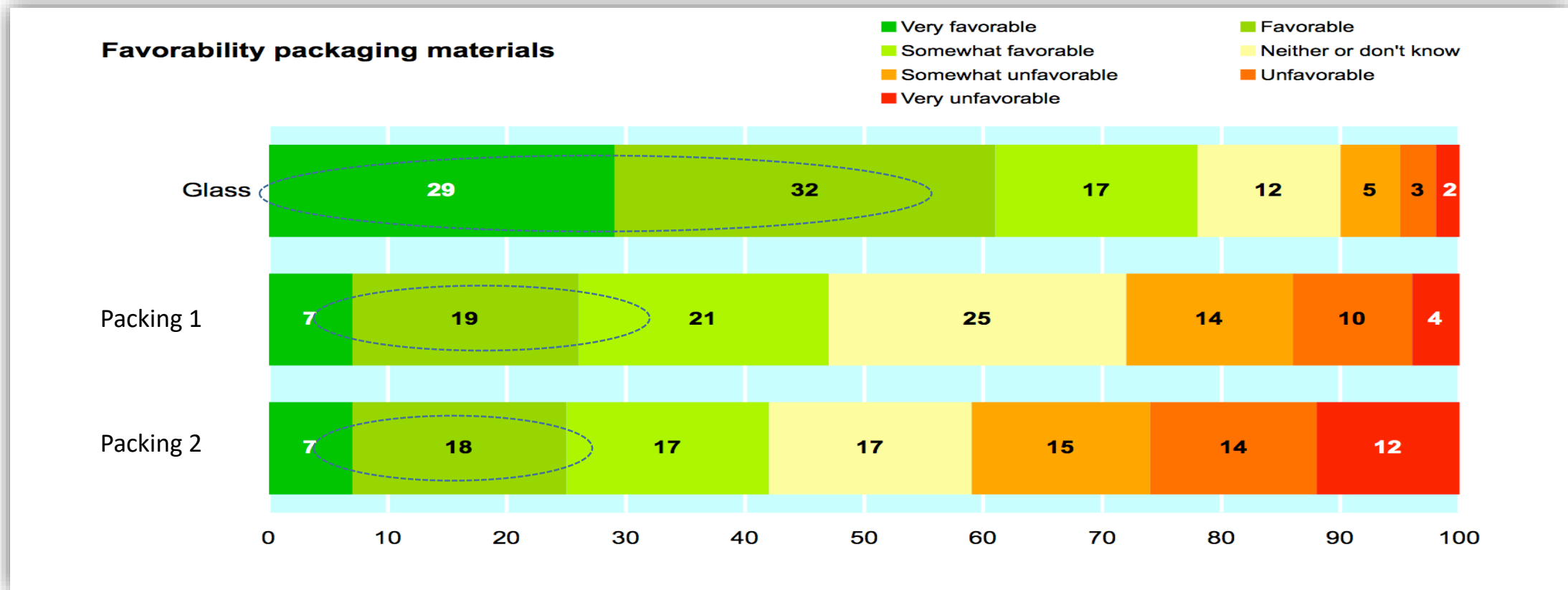
Source : Newton Marketing research SAINT GOBAIN VERELLIA



# What the consumers say across the globe ...

92% of consumers want safe drinking water and are willing to pay more for a better packaging

60% say they are willing to pay more than current level for further sustainable packaging



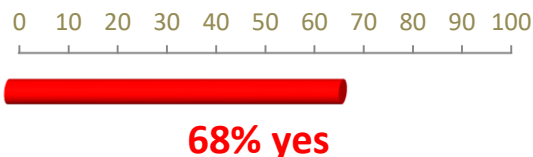
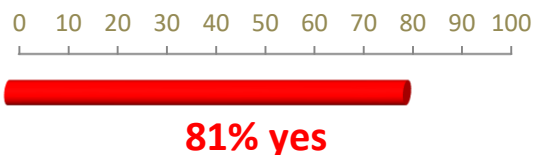
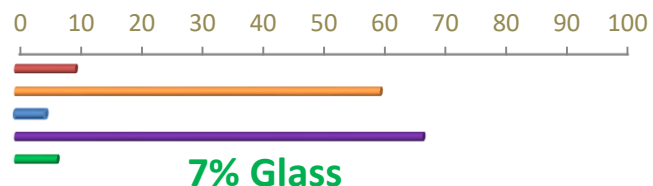
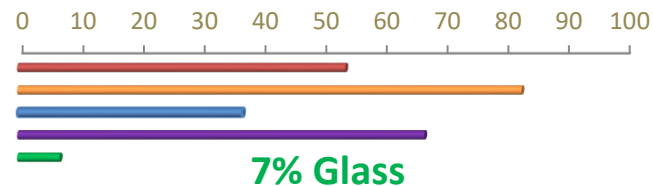
72% say they want more environment friendly packaging

81% want industry to use more glass containers

Source : European Container Glass Federation (FEVE) Consumer Research

# What the consumers say across the globe ...

## Protect your health



- Metal
- Plastic
- Paper
- Plastic pouch
- Glass

### Glass safe

Glass is seen as one of the containers *least likely* to leach chemicals into foods.

### Glass is green

Glass is seen as one of the *least polluting* containers.

### Material Matters

81% of consumers believe that **the container you choose, depending on its material, can leach chemicals** into the product.

### Purchase persuasion

68% of consumer **purchases are influenced by the health impact of the container** housing the product itself.

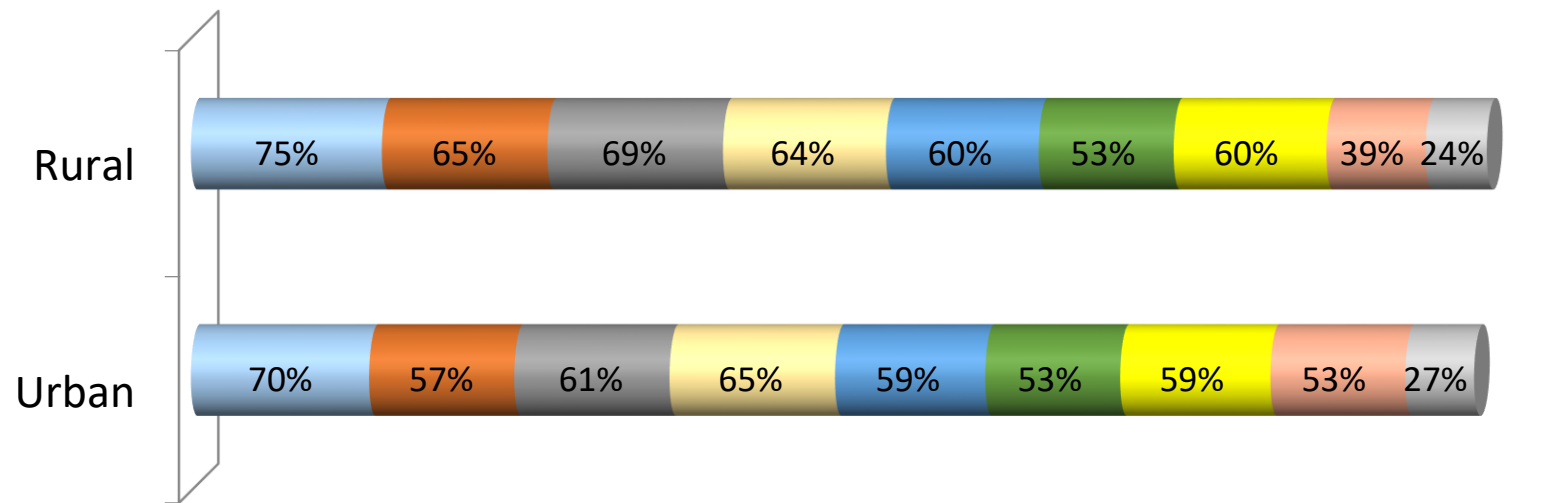
Consumers are becoming more aware of packaging and how it can affect the foods and beverages they consume.

Not only do glass containers protect the flavor and purity of organics, but choosing glass demonstrates an elevated commitment to sustainability and the preservation of our natural resources.

Source : Newton Marketing research SAINT GOBAIN VERELLIA

# Do Indians prefer glass ???

- ❑ Rural consumers seem to prefer glass more than urban consumers considering all aspects
- ❑ Glass is considered the best in true preservation of taste and retention of freshness
- ❑ Safety in handling is the only major issue in which glass is least preferred



- True Taste preservation
- Purity
- Longer shelf life
- Retention of freshness
- Healthy & Hygienic
- Premium Look
- Provision for reuse
- Environment friendly
- Safe to handle

**75% of respondents across all categories (urban and rural) are willing to pay premium for modified glass packaging**

Source: Nielsen market survey

# 2017 – What consumers want .....



Key findings from a survey conducted by EcoFocus Worldwide in 2017 on wellness and sustainability trends impacting the food and beverage industry....

## Millennial Motivators

- 73%** Try to buy products in packaging that is recyclable
- 59%** Look for beverages in packaging that is made with renewable materials

Millennials aren't just thinking about the product's contents, they are also differentiating packaging for improved personal and planetary health.

## Clean packaging gains momentum

**86%** of grocery shoppers and **87%** of Millennials believe some types of packaging can leave undesirable chemicals in beverages.

They say cartons and glass containers are the least likely to do so, and that cartons and glass best protect freshness without preservatives.

## Fresh + Clean = Healthy

**71%** of grocery shoppers and **72%** of Millennials say that packaging that keeps beverages fresh without preservatives is the most important quality for healthy beverage packaging

Smart brands must align with consumer values & effectively communicate commitments behind their product, processing, & packaging choices.

“For consumers, the priorities of health and sustainability are clearly linked together, packaging has a growing role in their perception of both of these attributes. These are powerful synergies that speak to the 2017 consumer's holistic view of what is healthy.”

Linda Gilbert, Chief Executive Officer of EcoFocus Worldwide

# What the consumers say across the globe ...



## The Natural choice

Organic food and beverage manufacturers go to great lengths to ensure the quality and purity of their products.

Glass also portrays a premium image and enhances shelf appearance.

### Taste

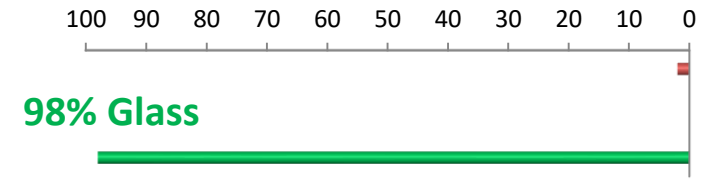
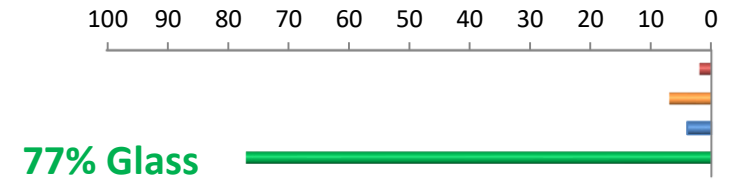
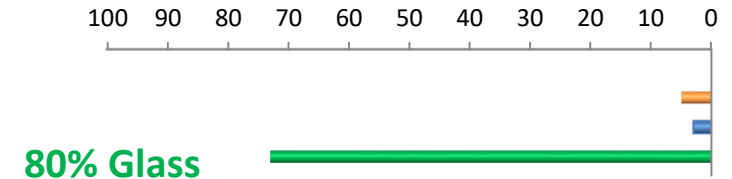
The fact that glass never loses purity makes it easy to see why nearly 80% of organic food consumers feel that **glass is best for maintaining the true flavor and taste of their products.**

### Health

77% of organic American families feel that **glass is the healthiest way to preserve foods.** They also agree that healthy foods make healthy families.

### Most Appealing

Just under 98% of consumers find the **appearance of glass to be most appealing when making a wine purchase.**



Source : Newton Marketing research SAINT GOBAIN VERELLIA



*Thank You*