

**MAKE IN INDIA WEEK– SUB SECTORIAL SEMINAR**  
**MAKE IN INDIA-OPPORTUNITIES IN**  
**THE FOOD PROCESSING SECTOR**



**MUMBAI**

**17<sup>th</sup> FEBRUARY, 2016**

**DR N.C.SAHA**

**DIRECTOR**

**INDIAN INSTITUTE OF PACKAGING**



# **RECENT ADVANCES AND OPPORTUNITIES OF PACKAGING TECHNOLOGIES IN FOOD PROCESSING**



# STRUCTURE

- **World Packaging Scenario.**
- **Status of Indian packaging Industry.**
- **Investment Opportunities in India.**
- **Advances of Packaging Technologies.**
- **Investment Opportunities in food packaging Sector.**
- **Conclusion.**



# **WORLD PACKAGING INDUSTRY SCENARIO:**

## *FEATURES*



- **ONE OF THE WORLD'S LARGEST & DIVERSE MANUFACTURING SECTORS**
- **VALUED AT ~US\$ 771 BLN**
- **EMPLOYING > 5 MILLION PEOPLE**
- **~ 100, 000 COMPANIES WORLDWIDE**
- **ASIA-PACIFIC – WORLD'S 3<sup>RD</sup> LARGEST PACKAGING MARKET**
- **GROWING @ OVER 5-6%**
- **RANKED 9/10 IN DEVELOPED NATIONS**

ERNST & YOUNG, GK Townsend, UK as stated in Packaging India

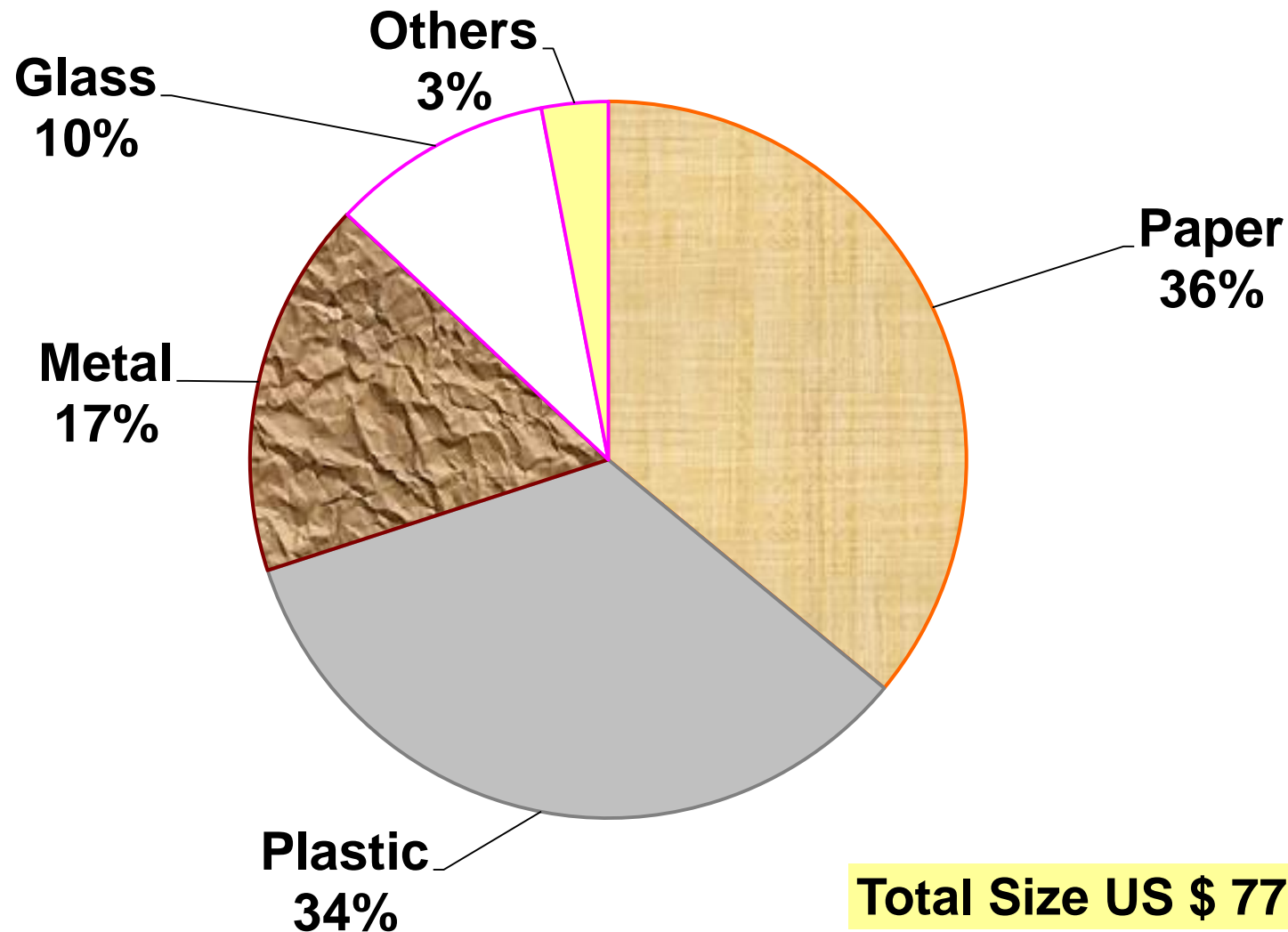
***ONE OF THE MOST IMPORTANT INDUSTRY GLOBALLY***



# GLOBAL PACKAGING INDUSTRY –



## Packaging Material break down



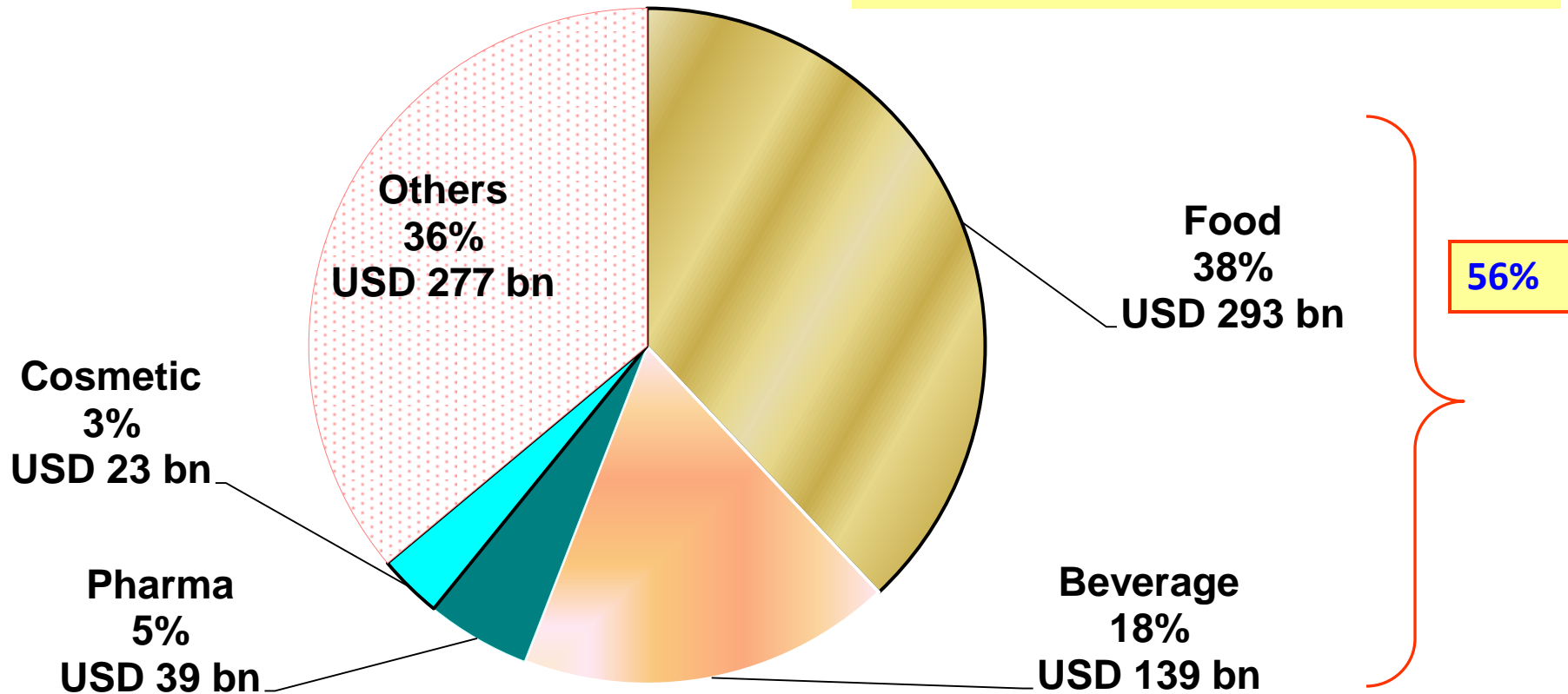


# GLOBAL PACKAGING INDUSTRY –

## Sector break down

**Total Size in 2015 : US \$ 771 Bn.**

**Expected in 2020 : US \$ 825 Bn**

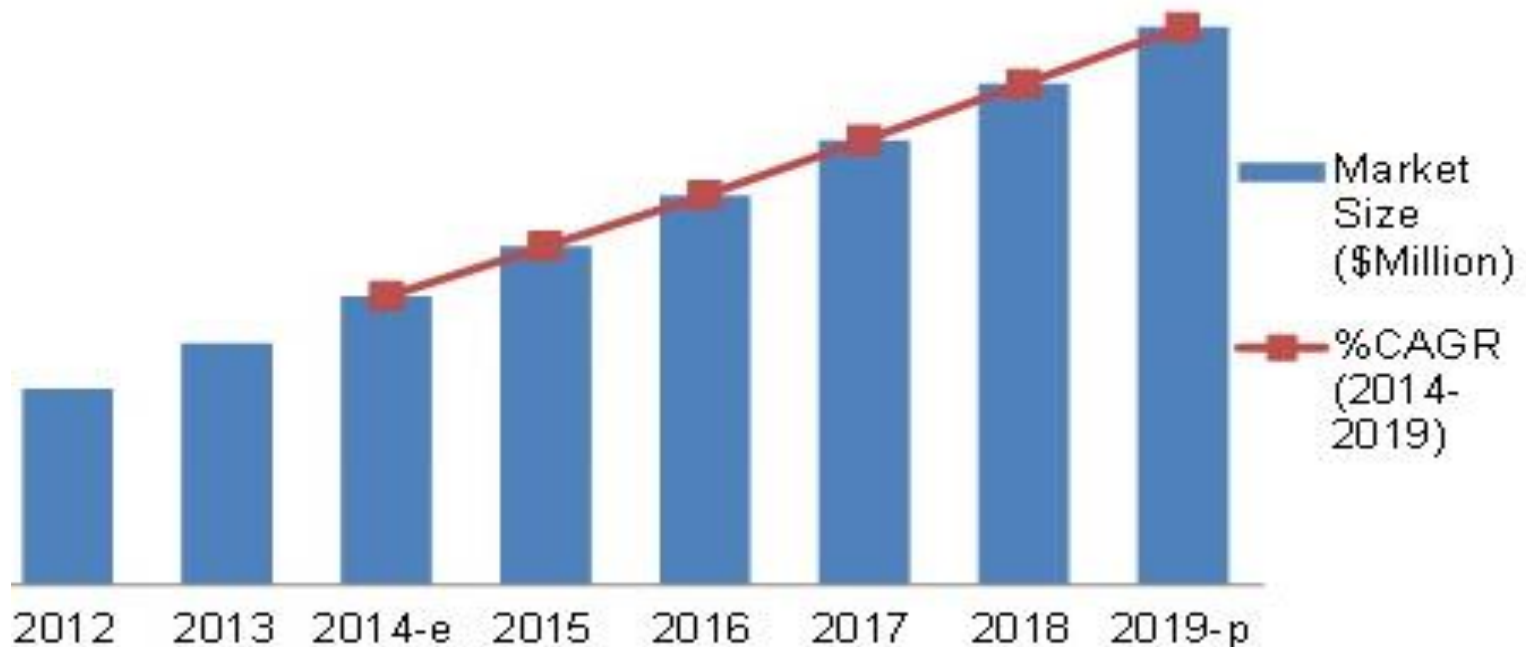


With growth getting tapered off in developed economies like EU, US & Japan, the developing economies like **India, China, Brazil** etc hold the key for future growth drivers. **Source:PIRA,UK**



# PACKAGING INDUSTRY-INDIA

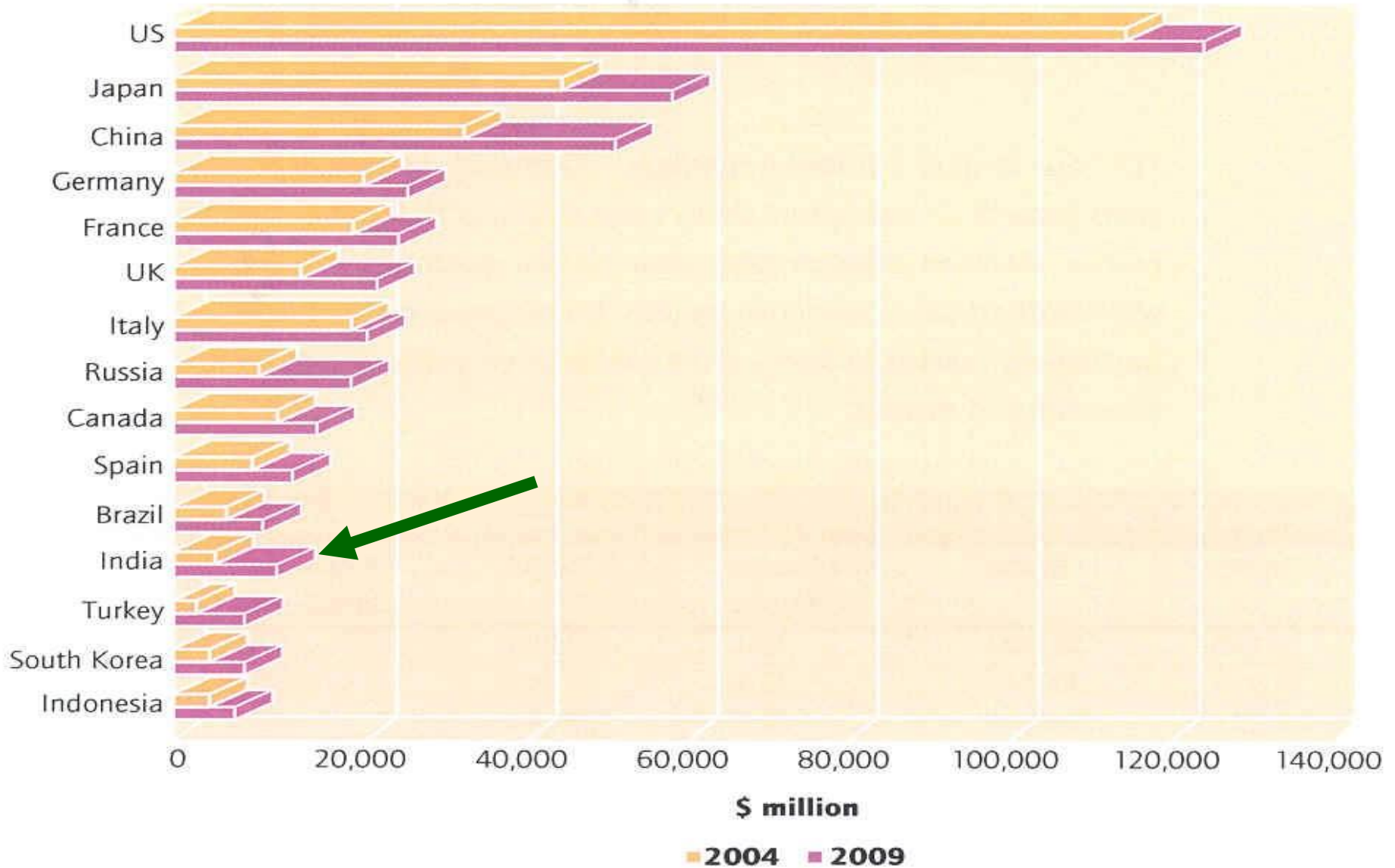
- With a turnover of **\$24.6 billion** and a growth rate of **13% to 15%** annually, the Indian packaging industry is expected to reach **\$32 billion** by 2020.
- At present, the Indian Packaging Industry is ranked **11th** in the world







# INDIA IN THE GLOBAL PACKAGING MARKET



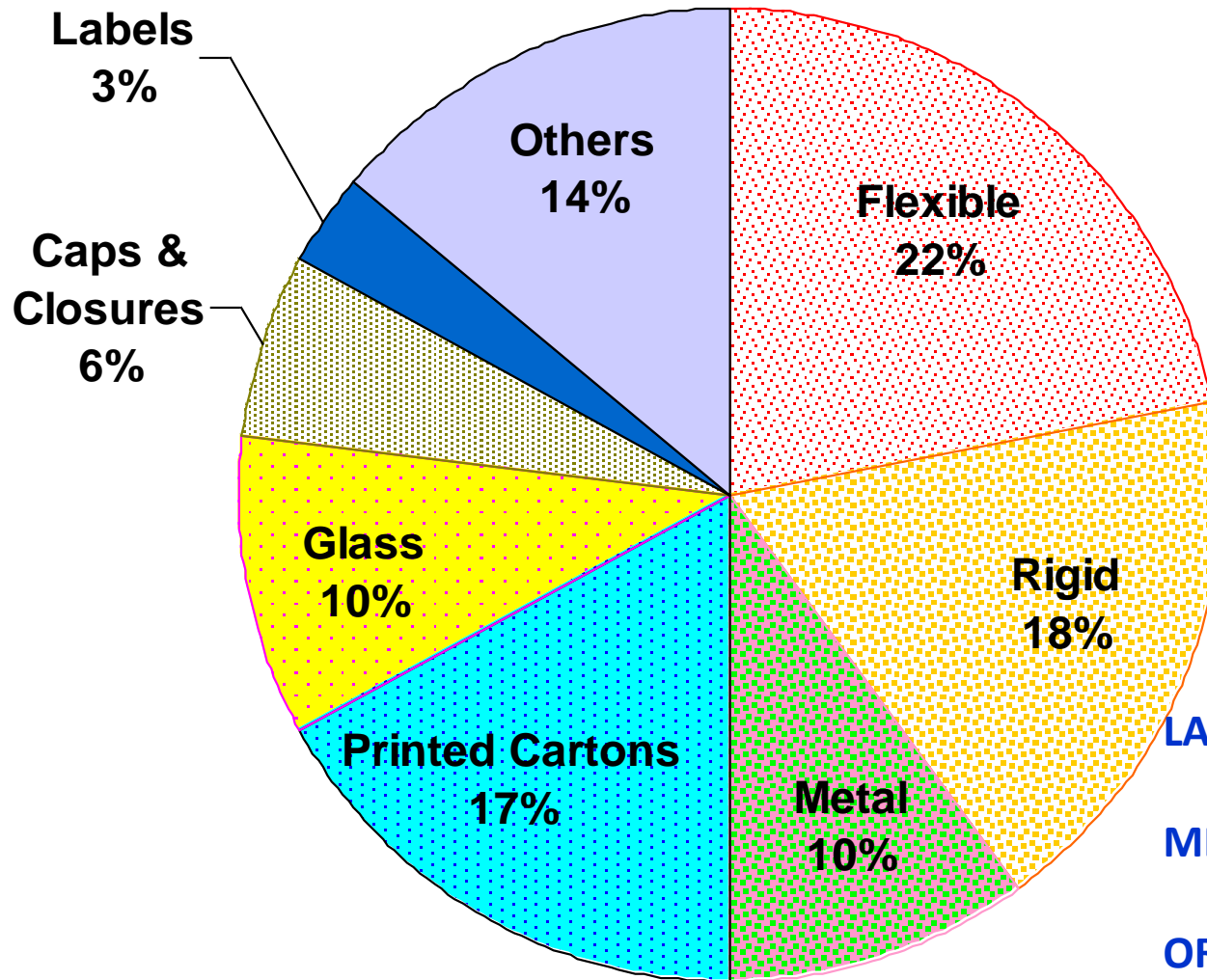
Ref-PIRA/WPO Report





# INDIAN PACKAGING INDUSTRY –

## Packaging Material break down



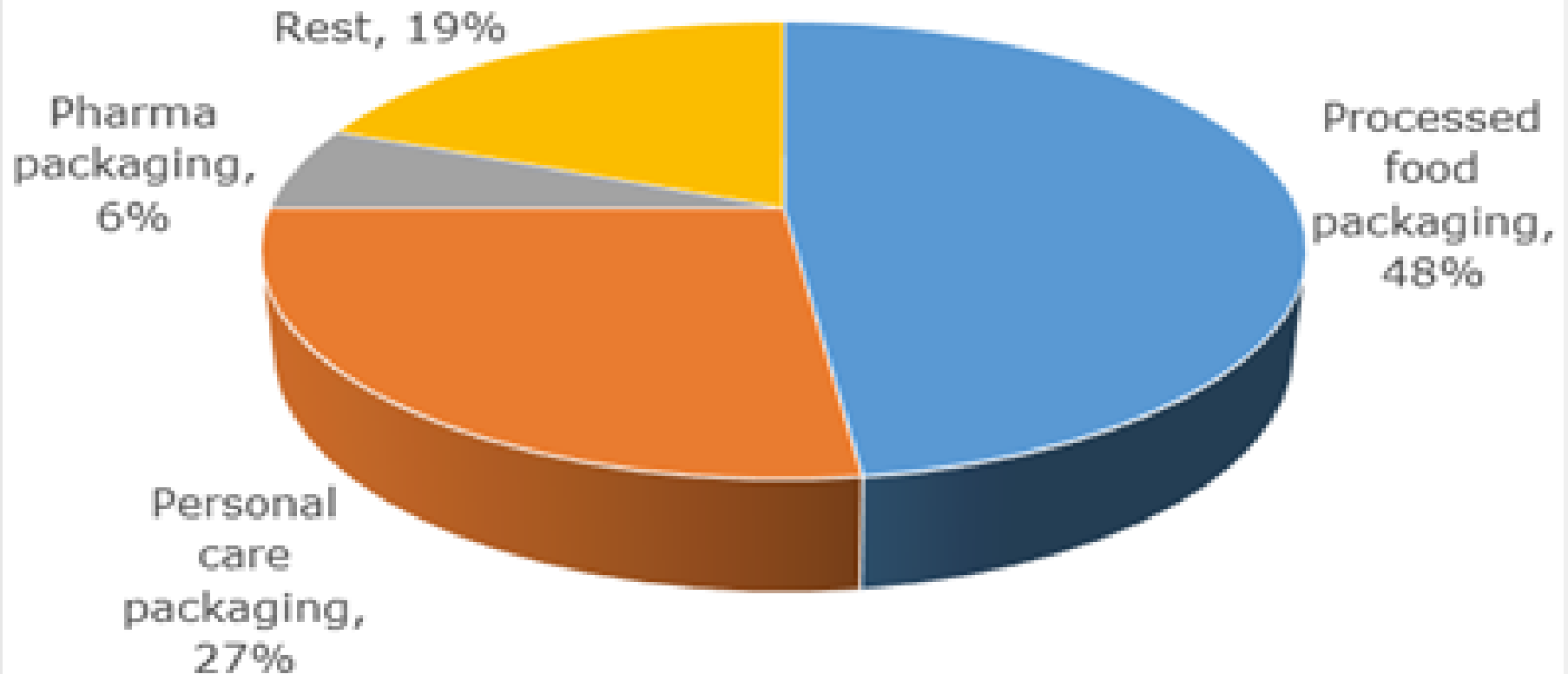
### NO. OF PLAYERS

LARGE -	40
MEDIUM -	6,000
ORGANISED- SMALL SCALE	20,000



# INDIAN PACKAGING INDUSTRY

Sector-wise break-up of packaging industry in India



*Source: Indian Packaging by Market Sector : Centre for market research & Social Development, New Delhi*



# PACKAGING

## **Means of**

- Containment, Protection, Preservation & Presentation**
- Handling & distribution**
- Product integrity**
- Brand promotion & marketing**

**Art, science & technology  
For preparing goods  
for Market and sale**

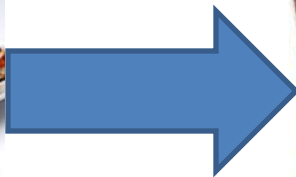
**Techno-economic function  
aimed at minimizing cost  
of delivery while  
maximising sales & profits**



# FOOD PACKAGING

Packaging plays a vital role in preserving food throughout the distribution chain.

Packaging provides protection to processed foods from all kinds of physical, chemical, and biological contamination and thus to enhance shelf life.





# **PACKAGING – CONSUMER DRIVEN INDUSTRY**



# CHANGING TRENDS – INDIAN SOCIETY



- **CHANGING DEMOGRAPHICS.**
- **CHANGE IN LIFE STYLE.**
- **MORE NUCLEAR FAMILIES WITH DUAL INCOME.**
- **GROWTH OF LITERACY.**
- **DEMANDS ON CONVENIENCE.**
- **CHANGE IN FOOD HABITS.**



# CHANGING PATTERN – INDIAN SOCIETY

- **CHANGE IN CONSUMER ATTITUDE.**
- **THE DECISION MAKING SEGMENT OF 15-44 YEAR GROWING.**
- **BOOMING OF RETAIL MARKET**
- **A LARGE MIDDLE CLASS WITH RELATIVELY BIGGER SPENDING POWER.**
- **GROWTH IN NUMBER OF WORKING WOMEN.**
- **TOMORROW'S CONSUMER – IS THE KEY FACTORS FOR THE FUTURE DEMAND ON PACKAGING.**





# INDIA-INVESTMENT OPPORTUNITY





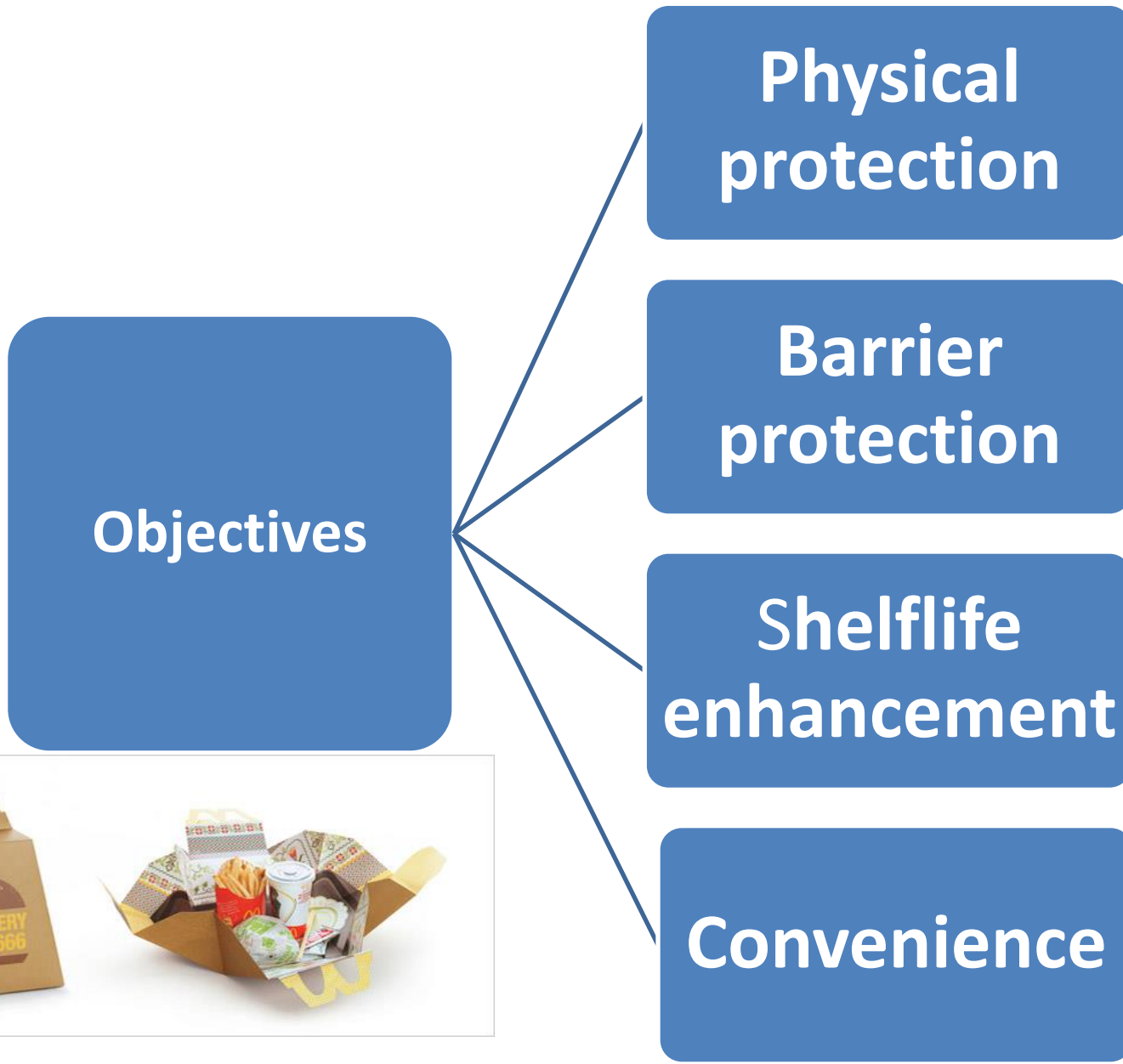
# LEADS TO MORE –PACKAGING DEMAND



- CONSUMER PACKAGE ( 100GMS ONWARDS....)
- HYGIENIC AND **SAFE FOODS** IN PACKAGE.
- **READY TO EAT** FOODS.
- OPTIMUM SHELF LIFE.
- MORE **ETHNIC FOODS** IN PACKAGED FORM.
- PACKAGES WITH **CONVENIENT** FEATURES.
- 100 % EFFICIENT PACKAGE.
- VALUE ADDED PACKAGE.
- PACKAGES TO COMPLY WITH **ENVIRONMENTAL** REGULATION.



# INNOVATIONS IN FOOD PACKAGING





# ADVANCES OF TECHNOLOGIES IN FOOD PACKAGING

## • CANNING



## • RETORT PACKAGING

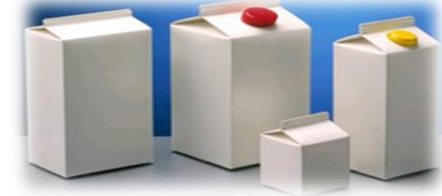


## • CONTROLLED ATMOSPHERE PACKAGING (CAP)



## • MODIFIED ATMOSPHERE PACKAGING (MAP)

## • ASEPTIC PACKAGING



## • ACTIVE, INTELLIGENT AND SMART PACKAGING





# INVESTMENT OPPORTUNITIES IN FOOD PACKAGING SECTOR

- MANUFACTURING OF **BREATHING FILM** IN INDIA TO ENHANCE SHELF LIFE OF FRESH PRODUCES.
- ENZYME BASED **BIO-DEGRADABLE FILMS** FOR FRESH PRODUCE TO ENHANCE SHELF LIFE.
- MANUFACTURING OF HIGH **BARRIER FILM** FOR **MAP** TO ENHANCE SHELF LIFE OF FOODS.
- HIGH EFFICIENT **VACCUM** PACKAGING MACHINERIES.
- **ASEPTING PACKAGING** SYSTEMS FOR PROCESSED FOODS.
- SENSOR BASED **SMART PACKAGING** SYSTEM FOR FOODS ( SPOILAGE INDICATOR, RIPENING INDICATORS)



# PLASTIC LAMINATED TUBE FOR NALEN GUR ( LIQUID JAGGERY)







# MODIFIED ATMOSPHERE PACKAGING ( MAP)











# CONCLUSION

**FOOD PROCESSING & PACKAGING ARE  
COMPLIMENTARY TO EACH OTHER.**

**THE DEVELOPMENT OF FOOD  
PROCESSING CREATE THE DEMAND FOR  
INNOVATION OF PACKAGING  
TECHNOLOGY FOR FOODS.**

**CONSTANT INNOVATIONS OF FOOD  
PACKAGING TECHNOLOGY REQUIRED**

- TO ENHANCE THE SHELF LIFE**
- TO MEET CONSUMER DEMAND**
- TO MEET MARKET DEMAND OF HUGE  
POPULATION.**

**INVESTMENT DESTINATION – INDIA**

