

National Policy Workshop Webinar Series
On
Countermeasures for Riverine and Marine Plastic Litter in India
12 -22 May 2020

Session 1: The Science and technology of Plastics & techniques/best practices of plastics pollution assessment and investigation

**PLASTICS CONSUMPTION AND DISPOSAL-METHODOLOGY FOR
WASTE PLASTICS ASSESSMENT IN INDIA**

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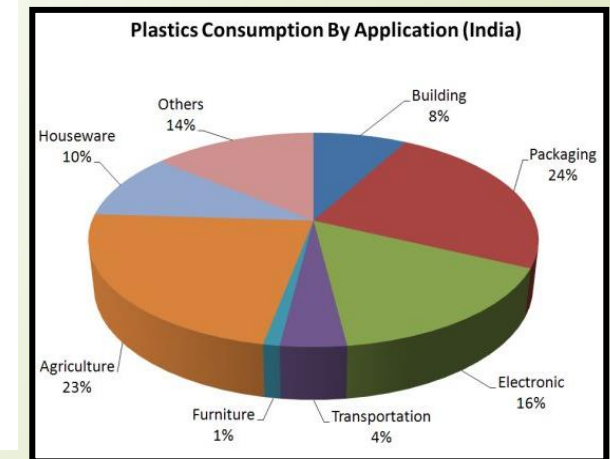
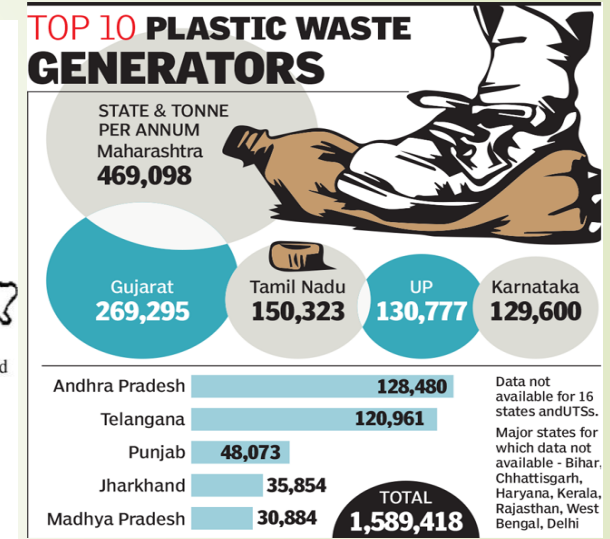
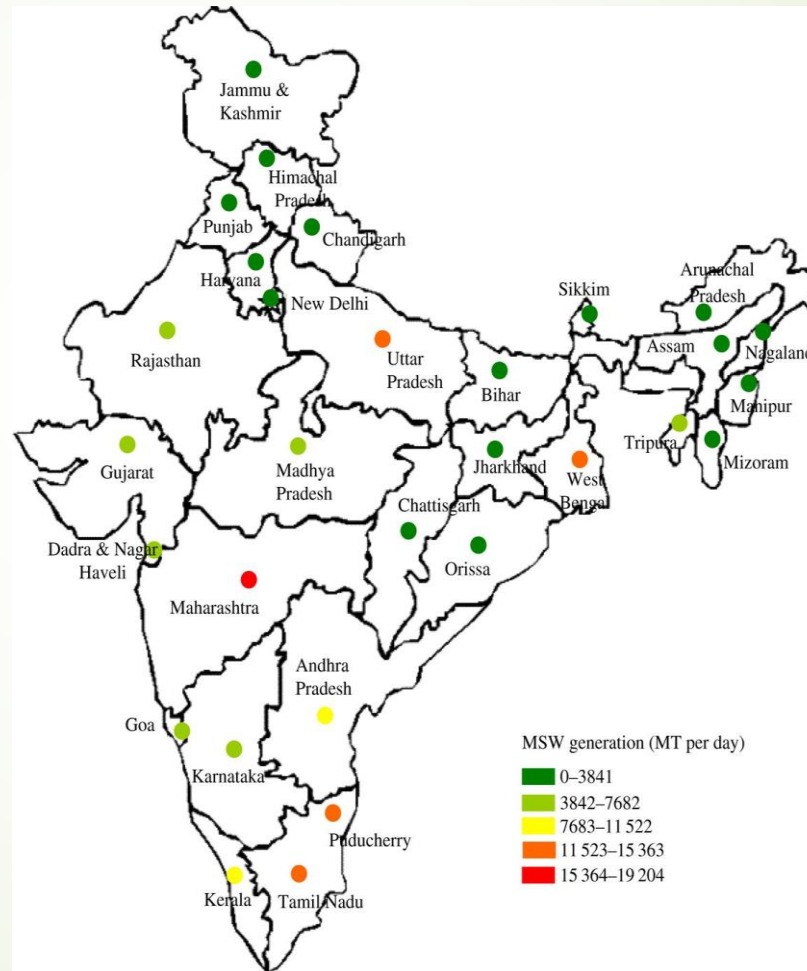
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PLASTIC CONSUMPTION IN INDIA

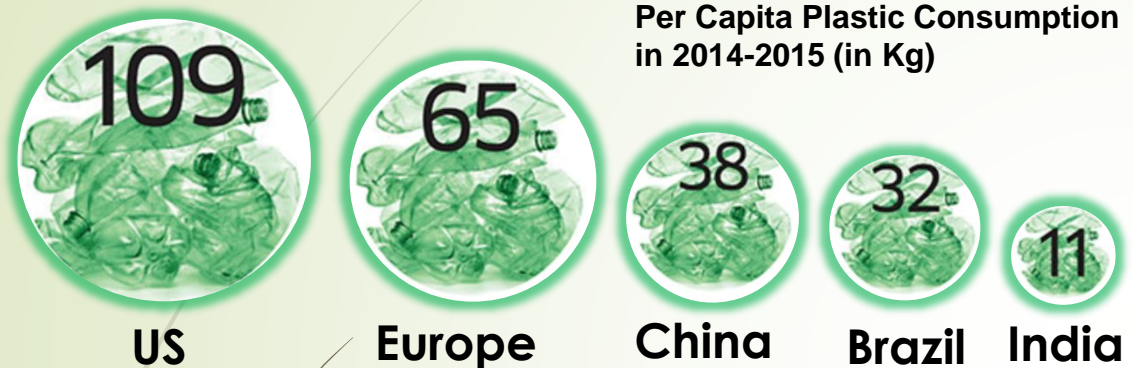
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Plastics have become an integral and important part of the global economy due to its low cost, versatility, durability and high strength to-weight ratio.

- ❖ The Plastics Processing Industry has grown at a CAGR of 10 % in volume terms from 8.3 MMTPA in FY10 to 13.4 MMTPA in FY15
 - ❖ Expected to grow at a CAGR of approximately 10.5 % from FY15 to FY20 to reach 22 MMTPA due to its extensive application.
- (Source: Industry reports, TATA strategic analysis)*
- ❖ In India the Govt. initiative such as “**Make In India**”, “**Skill In India**” and “**Digital India**” have increased the growth of plastic products.



PLASTIC PRODUCTS DEMAND GROWTH DRIVERS



Global Average: 28

Source: AIPMA and PlastIndia, TATA Strategic analysis

Per capita plastic consumption may rise to

20 kg by 2022

Annual plastic consumption may reach

20 mn tonnes by 2020

80% of plastic produced used in packaging sector

Source: TERI

Waste Side Story*
India generates **25,940 tonnes*** of plastic waste every day

This is close to the weight of **9,000 Asian elephants**

86 Boeing 747 jets

Of this, **10,376 tonnes a day** is uncollected plastic
1/6th of plastic waste generated by 60 cities
Half of this comes from **Delhi, Mumbai, Bengaluru, Chennai & Kolkata**

*Source: Central Pollution Control Board

Agriculture

- Advanced Agricultural Technology
- Distribution Channels
- Refrigerated Storage

Infrastructure

- Building & Construction
- Public Utility Services
- Mega Highway Projects

Packaging Industry

- Food/Processed Food
- FMCG Items
- Packaged & Fast Food Industry

Other Growth Areas

- Industrial / Rigid Packaging
- Automotive / Appliances
- Medical / Personal Care

Source: FICCI

PLASTIC PRODUCTS DEMAND GROWTH DRIVERS

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AROUND 60% OF INDIA'S PLASTIC WASTE IS RECYCLED

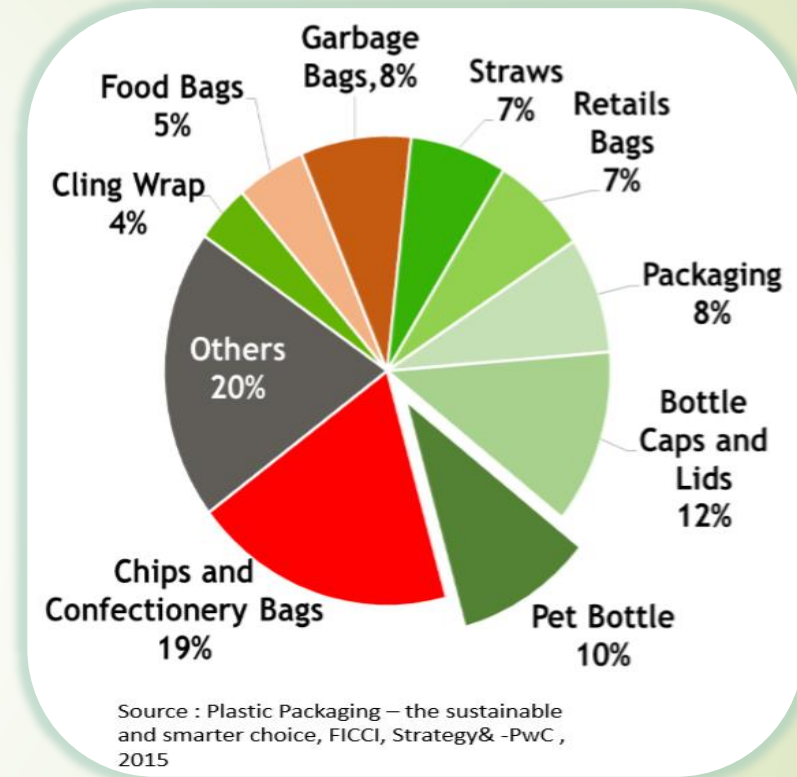
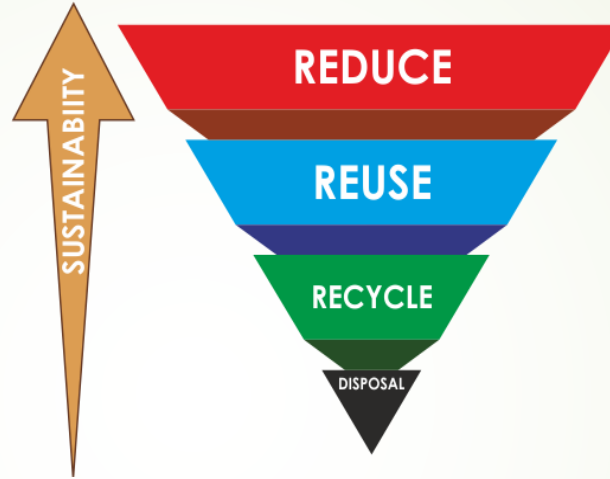
Total Plastic Waste Generated Every Day

15,342 tonnes



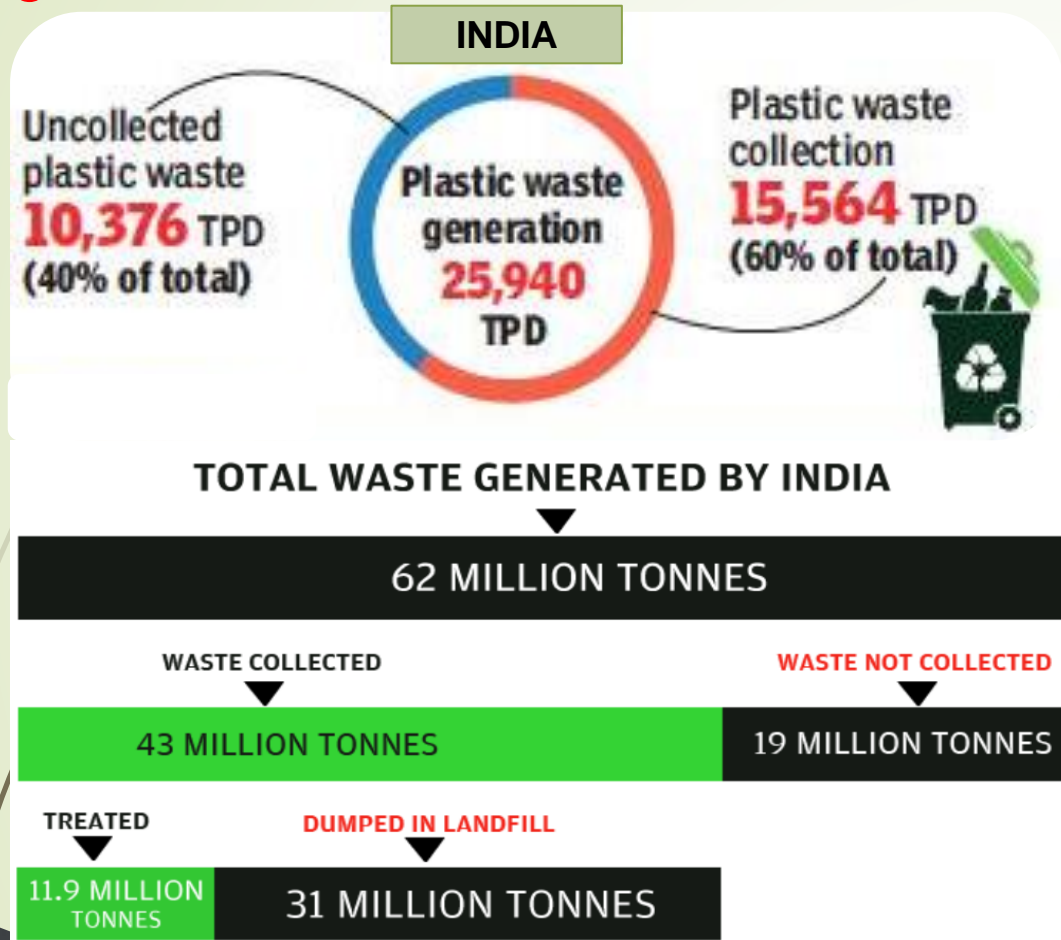
Solutions required for :

- Chips and Confectionery bags- Multilayer
- Garbage Bag
- Food Bag
- One time use sachets
- Sanitary Waste/Diapers



PLASTIC WASTE GENERATION IN INDIA

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Fate of non-recycled plastic

400 years
Time it takes for a plastic bottle to decompose

6.3 bn tonnes
Plastic waste that has accumulated globally

12 bn tonnes
Likely amount of plastic in landfills by 2050

79% Of plastic in landfills and natural environment

Source: Study In Science Advances

Disposing plastic into water risks the marine life.

Burned plastic releases poisonous chemicals in the air.

Soil fertility gets affected due to plastic waste.

Litters the landscape

Kills animals

Defeats biodegradation

SINGLE USE PLASTIC PRODUCTS – CATEGORY & ASSESSMENT

“Single-use plastics, often also referred to as disposable plastics (**use-and-throw items**), are commonly used for plastic packaging and include items intended to be used only once before they are thrown away or recycled.”



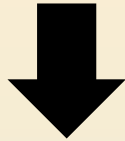
- High adverse environmental effects
- Limited utility
- Unorganized littering
- Environmental pollution

Carry bags, Food packaging, Bottles, Straws, Containers, Cups and Cutlery, Ear buds, Flex banners etc...

SINGLE USE PLASTIC PRODUCTS: CONCERNS

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Plastic carry bags for vegetables, groceries, food parcel services etc. - **irresponsibly littered directly in the environment or disposed by the collectors in the landfill.**



Plastics – highly sustainable - difficult to degrade
; tend to remain in the environment for decades.



GREAT GLOBAL CONCERN

- Migration into the land and marine food chain.
- Choking of animals & birds to death while polluting the oceans and environment.



INNOVATIVE AND COLLABORATIVE APPROACH TO ADDRESS THESE CHALLENGES SYSTEMATICALLY

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Beneficial use of material and energy

Prevention/Reduction

Reuse

Recycle

100 % material recovery
Co-processing
100 % energy recovery

Waste to earth

Incineration

Waste disposal

Land filling

Maximize through awareness campaign



Minimize waste and maximize value through circular economy approach

Minimize through regulatory intervention and landfill taxation

RECYCLING PROCESS AND TECHNIQUES ADOPTED IN INDIA

COLLECTION

SORTING

SHREDDING

CLEANING

MELTING

REUSING



MAJOR SOURCES OF PLASTICS WASTE IN INDIA

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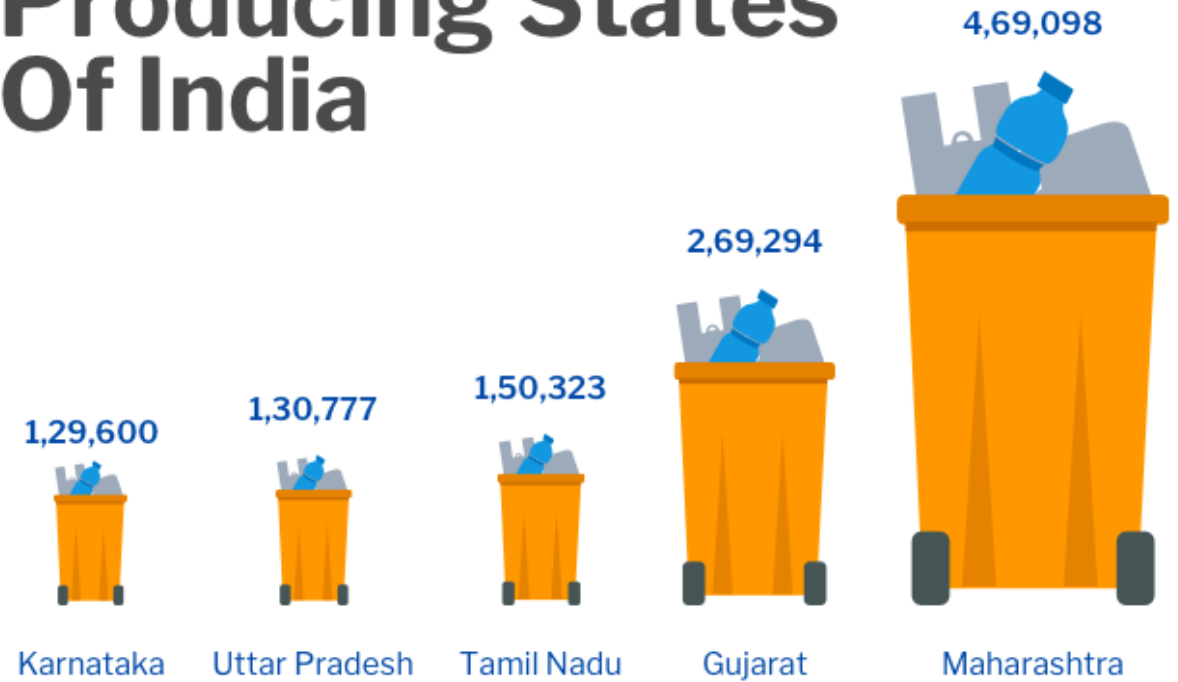
Packaging

E-Waste

Biomedical

Auto-waste

Top 5 Plastic Waste Producing States Of India



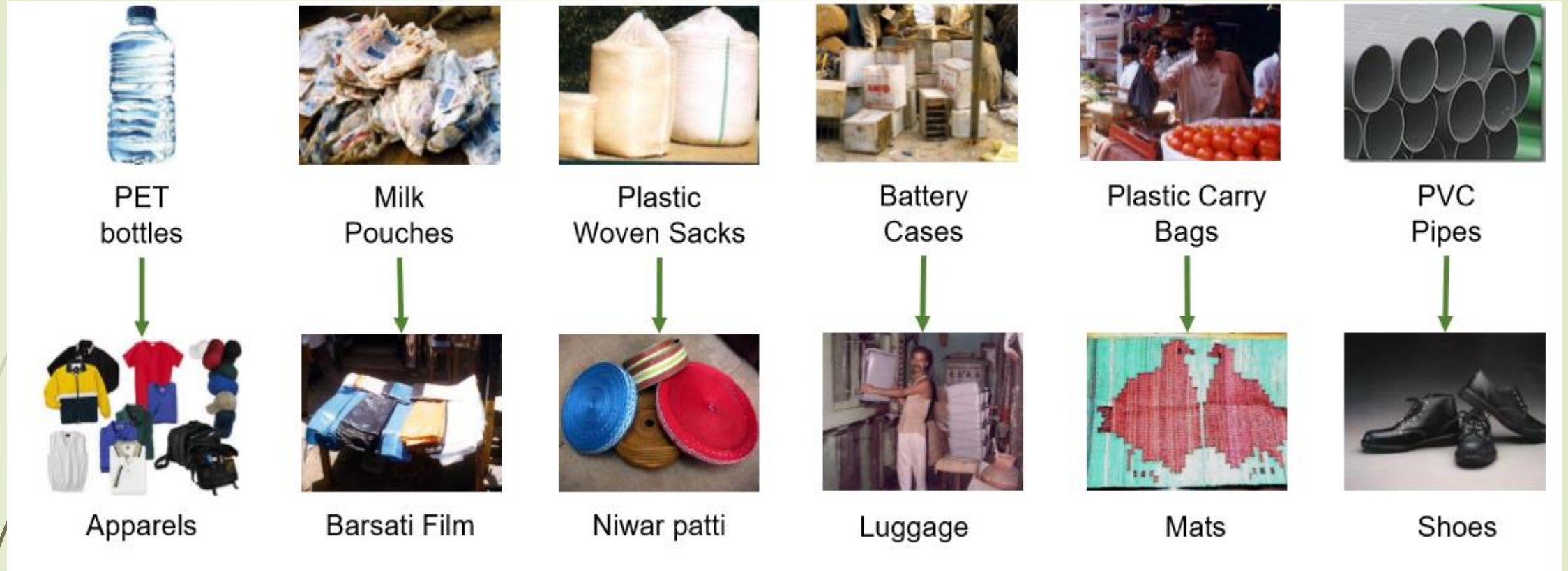
Figures in tonnes per annum

Source: Central Pollution Control Board Annual Report 2015-16

NDTV.com

VALUE ADDITION OF RECYCLED PLASTIC PACKAGING MATERIAL IN INDIA

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A thriving informal market for recycling plastics in India has emerged **HOWEVER, IS SUSCEPTIBLE TO MULTIPLE CHALLENGES.....**

Methodology for Waste Plastics Assessment in India

Extending Producer's Responsibility beyond consumption

Key objectives of EPR:

1. Design for environment
2. Resource Security
3. Share/Transfer the responsibility/cost of collection & disposal



**One Man's Waste is other's RESOURCE Towards ZERO WASTE...
Maximize recycling through unconventional solutions, sustained funding.....**

Methodology for Waste Plastics Assessment in India



सत्यमेव जयते

Government of
India

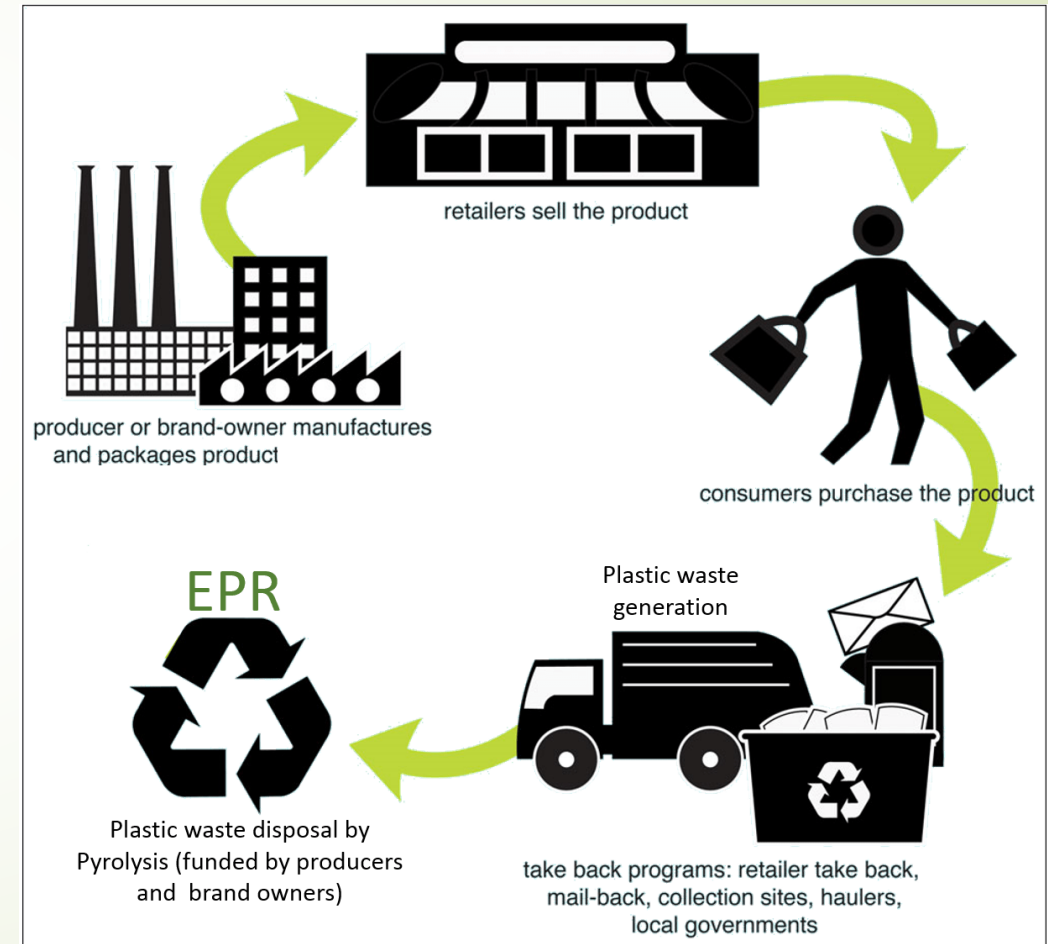


CIPET सि पे ट
probe · perform · practice · Plastics

- Lead Acid Batteries since 2000
- E Waste Management Rules, 2011, 2016
- **Plastic Waste Management Rules, 2016 & 2018**

Issues:

- Lack of understanding around EPR- what would work for India with a large rural base
- No consistent long term strategy around CE and EPR
- Lack of infrastructure for collection and recycling, largely informal, can't be tracked
- Not much clarity on the roles and responsibilities of different stake holders
- Inadequate monitoring, provision for penal action

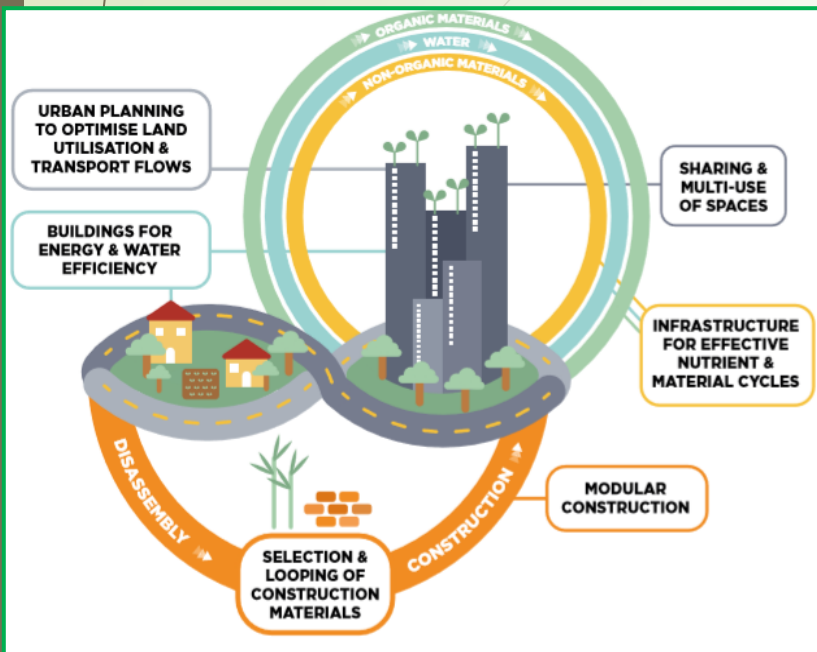




सत्यमेव जयते
Government of
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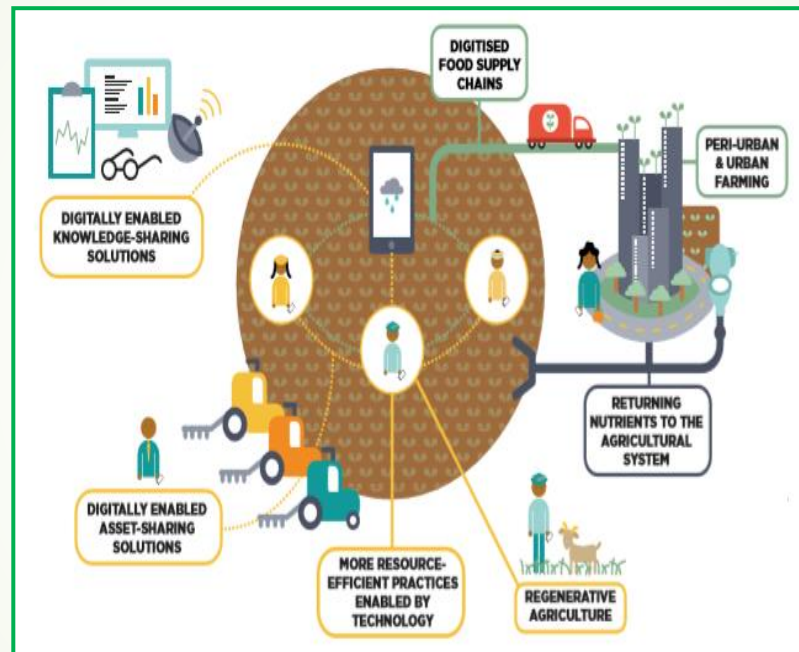


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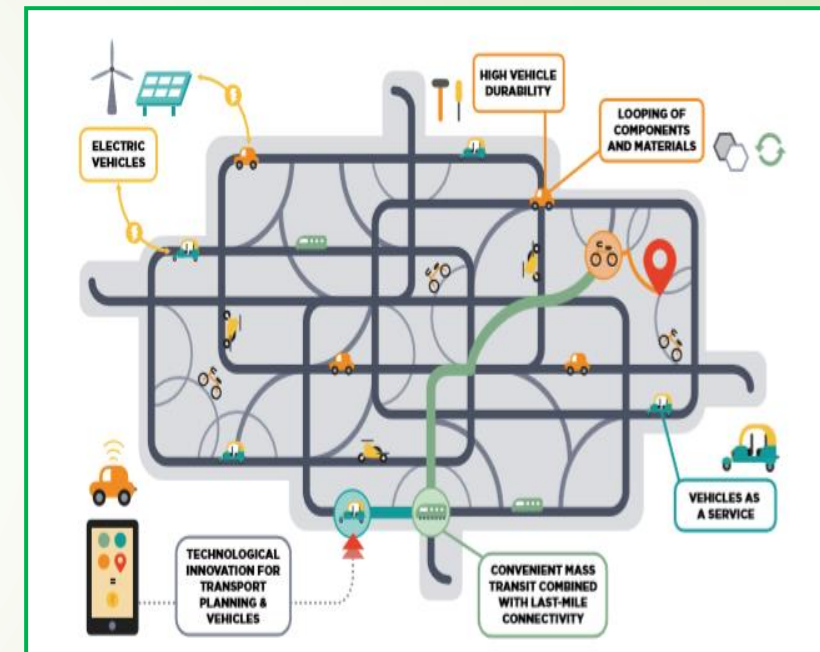
Cities and construction:

liveable cities with buildings, infrastructure and facilities that can cater the future needs of India's expanding population growth



Food and agriculture:

regenerative, restorative agricultural system that combines modern technology with traditional practices to meet India's growing food demand



Mobility and vehicle manufacturing:

a convenient, multimodal transport system enabled by digital technology, for resource-optimized and efficient mobility

ECONOMIC ASPECT OF RECYCLING IN INDIA

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Financial Benefits

- Make money selling recyclables
- Community Financial Benefits



Resource Conservation

- Proper utilization of plastics leads to lesser production demand



Job Creation

- Sector is ripe with work opportunities for middle-class people and those with limited education
- Green jobs are essential for our economy and have an equally significant hand in making our planet a better place to live on



Saves Energy

- Use of recycled materials reduce the energy consumption



Builds Community

- People work together, Communicate, Share ideas, Support each other



Thank You