

**Consultative Workshop of ‘Plastic-Free Mauritius :Defining the Road
Map’**

**Status on Recycling of Plastics wastes & Challenges
Opportunities for growth**

Caudan Arts Centre , 19 October 2021

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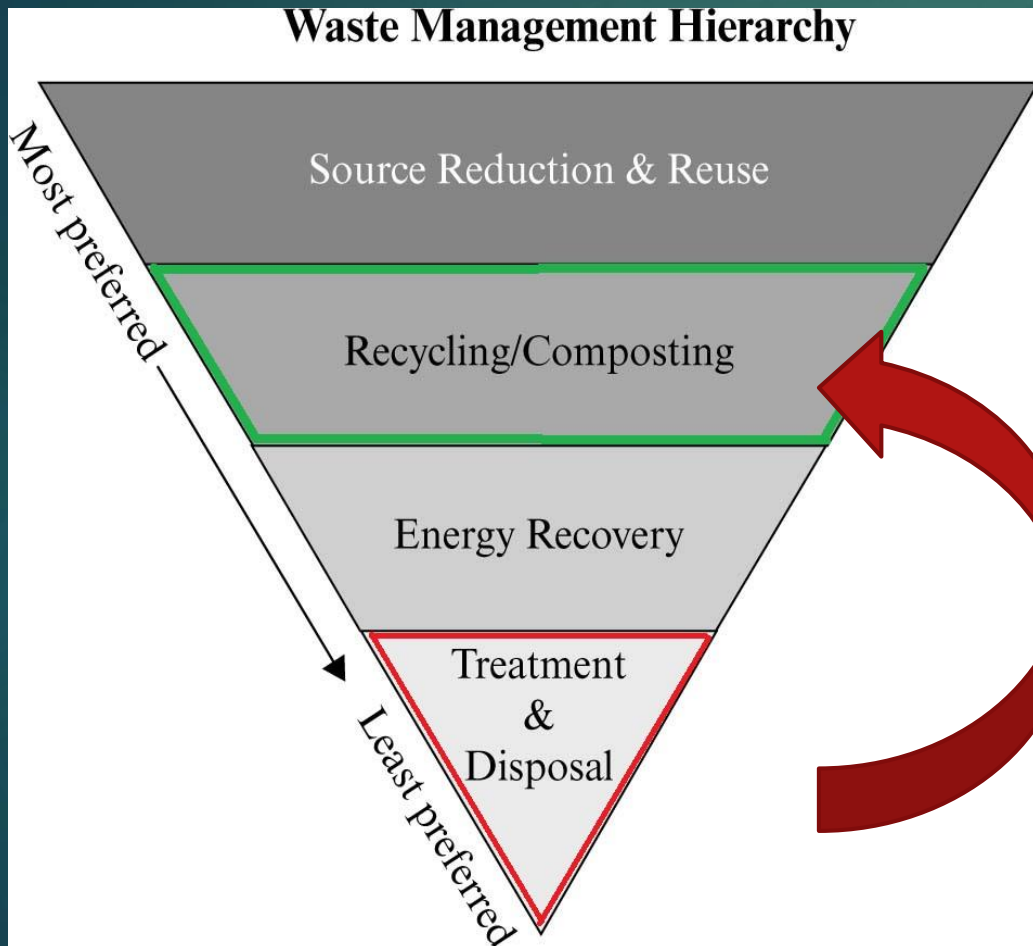
Solid Waste Management Division

Outline of Presentation

- ▶ Status on the Waste Management Hierarchy
- ▶ Estimation of amount of plastics in our wastes
- ▶ Type of plastics , their respective proportions and Recyclability
- ▶ Status of Plastics Recycling in Mauritius
- ▶ Main Processes & Current system
- ▶ Survey on Plastic Recyclers
- ▶ Boosting Circular Economy
- ▶ Growth potential

Status on the Waste Management Hierarchy

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- ▶ \approx 500,000 tons landfilled , **estimated** that 75,000 tons are plastics (2020 survey)
- ▶ Impacts of prevention, minimization and re-use of plastics products yet to be evaluated in forthcoming waste profiling exercises.
- ▶ Rate of plastics waste recycling is very low , **\approx 4%**
- ▶ World statistics on plastics : 9% recycled, 12% incinerated and 79% in landfill/environment
- ▶ Common objective : Decreasing the ratio of Landfilling to Material Recovery

Estimation of Amount of plastics in our wastes – 14.5 % (approx. 75,000 tons p.a)



Paper
Textiles
Glass

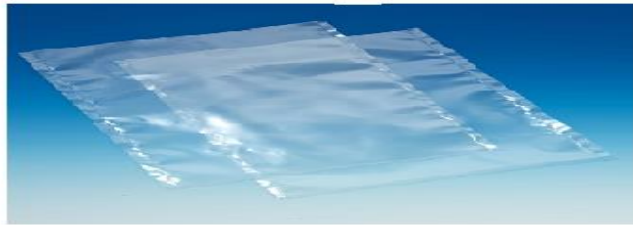


Type of Plastics in our lives and in our wastes (I)

PET



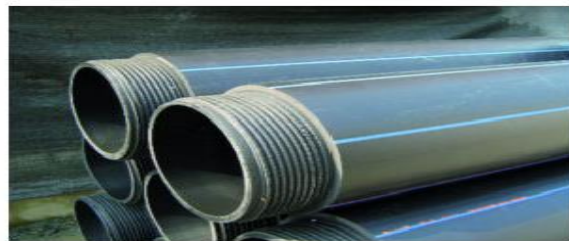
LDPE



HDPE



PP



Types of plastics in our lives and in our wastes (II)

PVC



PS / EPS



E-waste Plastics

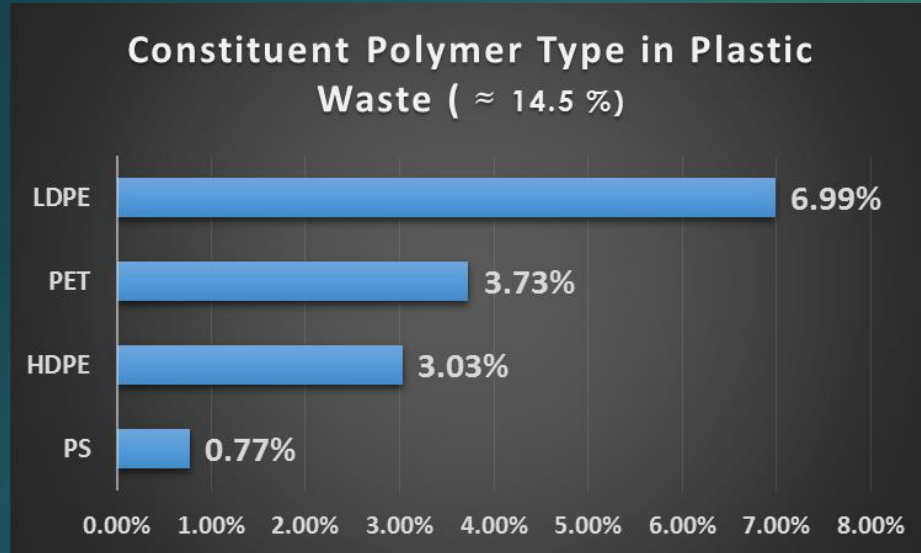


ABS, PA
Brf's



Characterisation of the Plastics Portion of Waste

Results of survey 2020



- Predominantly packaging, i.e commonly LDPE.
- A non-negligible portions of PP and e-plastics should be expected

Thermoplastics / Thermosetting plastics

- **Thermoplastics** : Polymers that melt on heating and harden on cooling heated. Usual basis for recycling in most countries.
- **Thermosetting plastics** : Polymers that irreversibly hardens by heat. Strong cross linking covalent bonds. Enhanced materials characteristics.



Melamine/Urea Formaldehyde



Polyurethane

Silicon rubber

Which Plastics can be recycled ?



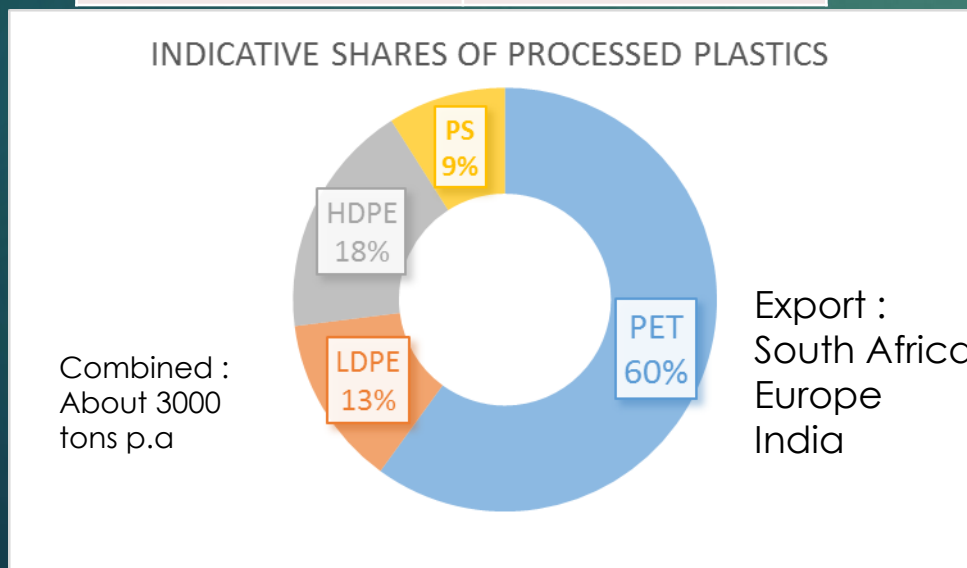
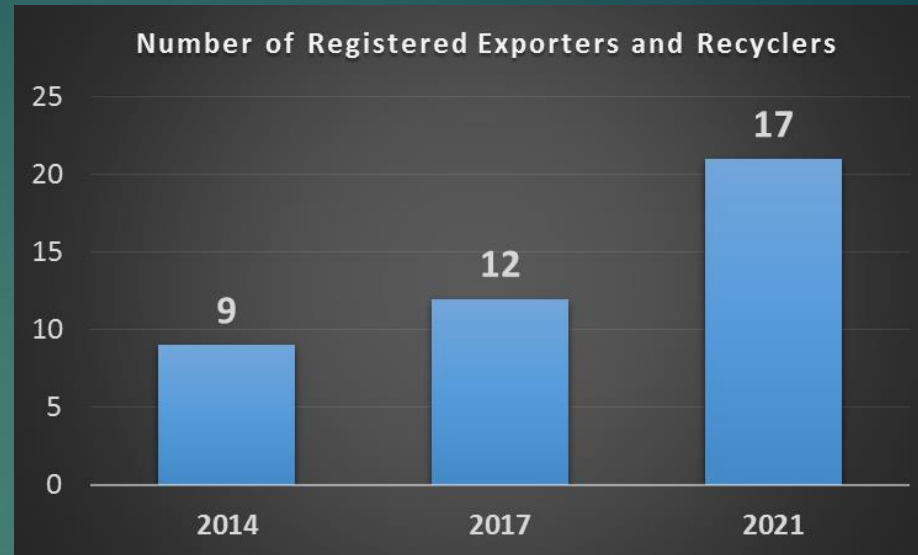
Thermoset Plastics 

E-wastes Plastics 

Status of Recycling of Plastics Wastes in Mauritius

- ▶ Local Government (Registration of Recycler and Exporter) Regulations 2013
- ▶ Total No. of Registered in 2021 : 17

Active entities :11	
Export Oriented	Recyclers
8	3



Main Processes (I)

PET :

- Bailing and exporting
- Removal of labels (PP) and caps (HDPE), shredding of bottles , densification and exportation



LDPE Packaging

- Bailing and exporting
- Recycled Packaging



Main Processes (II)

▶ HDPE /PP



Extrusion / Injection Moulding



Plastic recovery under current system

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▶ Current System

- Mixed Waste : No obligation to segregate
- Transfer Stations Design provides for swift dispatching of waste to landfill
- Recyclers use their own means to source the materials against payment, ...network of collectors and transportation

▶ Existing Supporting Measures

- Economic support from Government on PET at MUR 15/kg.
- Rs 300 / ton of waste diverted from transfer stations
- Some level of access provided to collectors at Transfer Stations
- Civic Amenity Centre at La Chaumiere is operational & others will follow : La Laura, Roche Bois and P. D'Or



Surveys – Feedback from recyclers (challenges)

▶ All Recyclers/Exporters have expressed that

- There is not enough materials;
- Machinery are under-utilized;
- Can and would like to grow their businesses;
- There is not a well established market for recycled products;
- High electricity cost;
- Volatile prices of recycled material

➤ In particular, PET exporters have indicated

- - high cost of material purchase , ,i.e basically they are a pass through of the economic support of Rs 15/kg
- Recycling business is holding only on the economic value of the waste
- High cost of freight
- Materials have to be bought in cash every day

➤ Economic Viability

- Most exporters / recyclers indicate that their business are fragile.

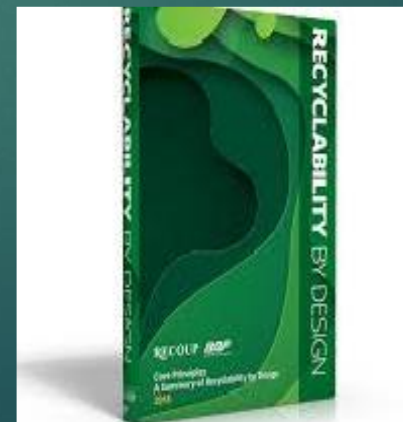
Elements for boosting Circular economy (I)

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▶ Circular economy is no different from any other economy !

A. Adequate and continuous flow of materials

- Source segregation at commercial entities
- Optimisation of Civic Amenity Centres
- Ban at transfer stations /landfill of recyclables
- Source segregation at domestic level
- Infrastructures for sorting of recyclables
- Product design to ease recycling / imports
- Not all plastics are recyclable...
.....to focus on the recyclable ones.
- Public sensitization campaigns
- SYMBIOSIS – Co-operation among recyclers for waste exchange



Elements for boosting Circular economy (II)

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▶ B. Firm /incentivized markets

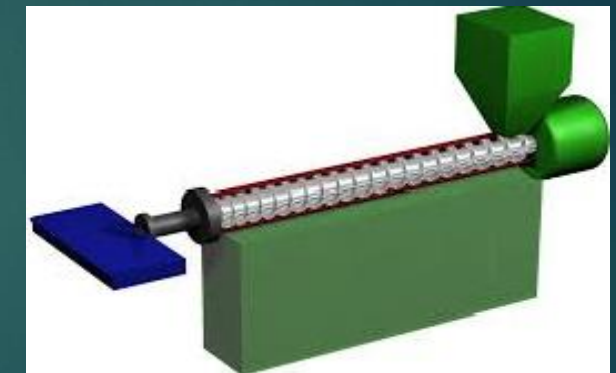
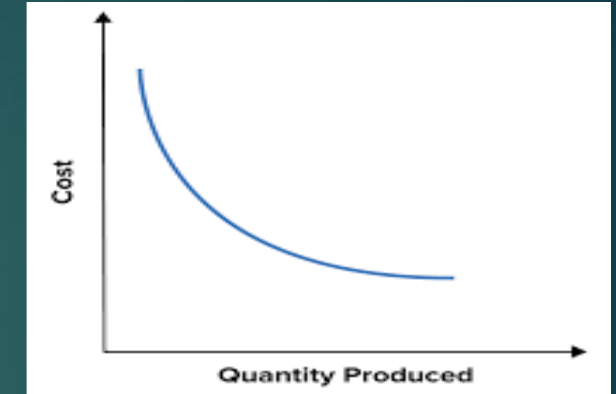
- Promotion of recyclable products
- Creation of markets both a public and private sector levels
- Consideration of economic incentives
- Economy of scale to make products competitive

▶ C. Technical Capacity

- Knowledge on polymers (product design & safety)
- Machinery
- Low /High grade products
- Research and Development

▶ D. Financing

- Leasing facilities for equipment
- Attractive loan conditions



Growth Potential

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- ▶ Currently , with some 3000 tons of plastic retrieved. The plastic recycling is estimated at some **MUR 150M** p.a
- ▶ With the necessary engineered sorting programme and on the assumption that some 20,000 tons of plastic may be retrieved p.a , the sector may be worth **MUR 1 B.**
- ▶ Exceeding significantly the yearly capital & recurrent budget of the landfill
- ▶ The plastic recycling sector currently provides for some 250 direct labour and \approx 1500 Indirect labour.
- ▶ A beefed up recycling sector has a good potential for further jobs creation



Issues to ponder on

- ▶ Are all plastics to be source segregated and sorted ?
- ▶ Is there a risk of too many recyclers doing the same line of business ? How to encourage diversification among recyclers?
- ▶ How to promote symbiosis among recyclers ?

'Plastic isn't the problem. It's what we do with it'

Erik Solheim – Head of UN Environment.



THANK YOU FOR YOUR ATTENTION