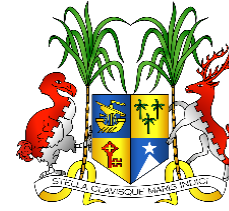




**Ministry of Environment, Solid Waste
Management & Climate Change**



**Theme: Solid Waste Management
(La gestion des déchets solides)**

Mr. B. Beerachee

Ag Director

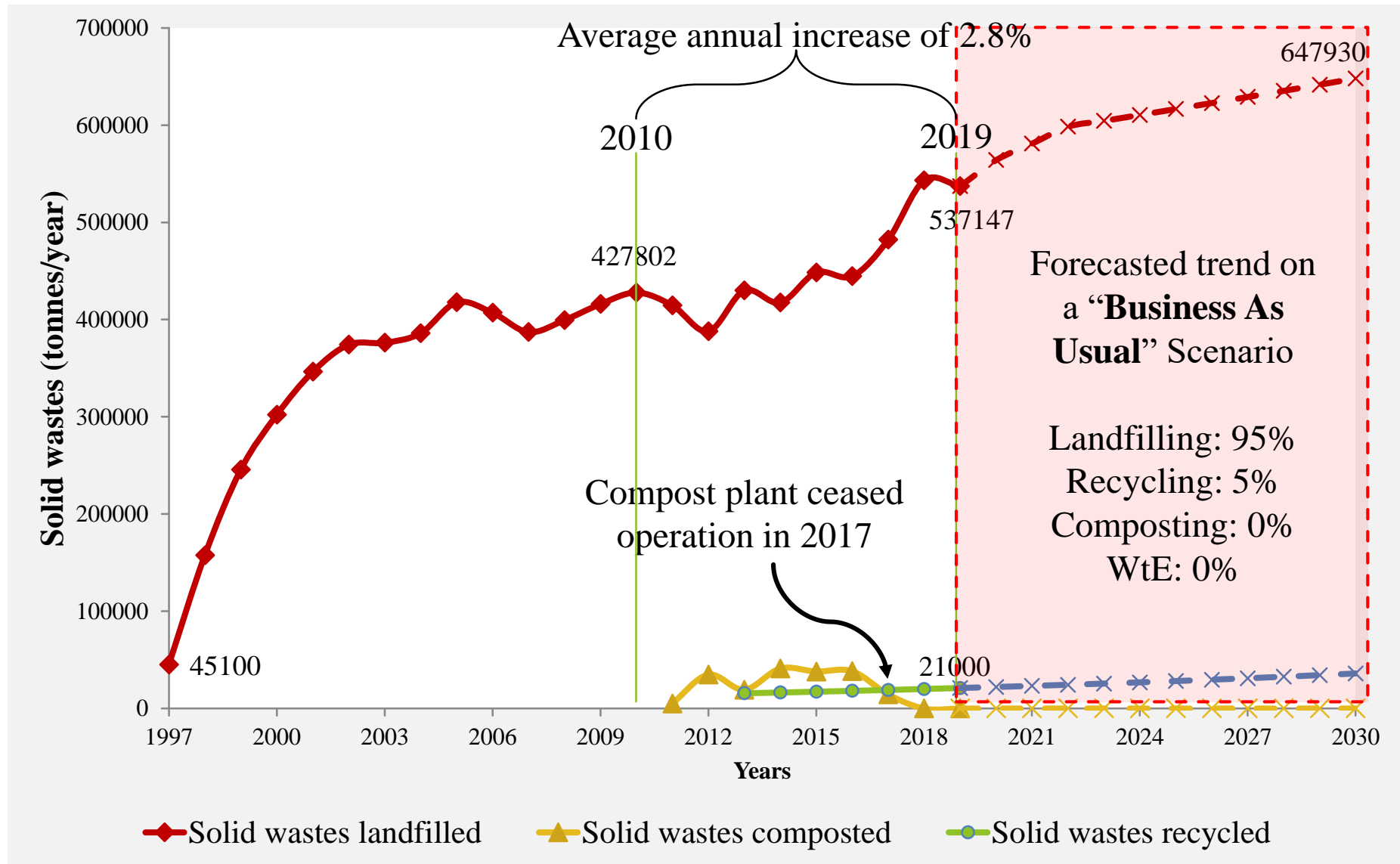
Solid Waste Management Division



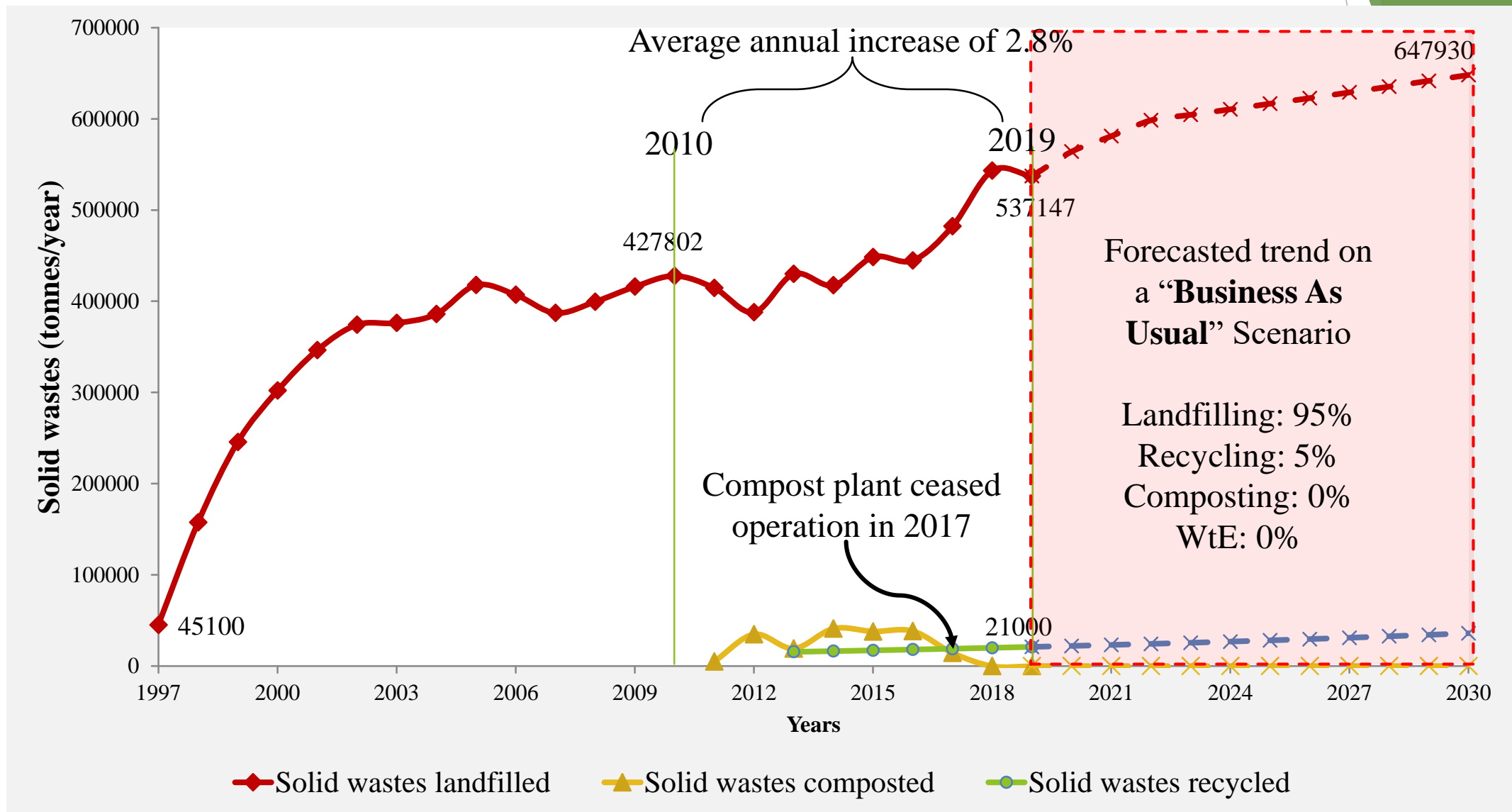
Outline of Presentation

- Waste Generation & Forecast
- Gaps & Needs for the Solid Waste Sector
- Long-Term Vision
- Recommendations during les Assises de l'Environnement
- Policies and Strategies & Approach for Action Plan and Implementation
- Roadmap for the solid waste sector
- Expected diversion by 2030

Current waste generation and forecasted values



Current waste generation and forecasted values



Gaps

- Waste Management System is over-reliant on 'end of pipe' treatment, i.e. landfilling (~96%)
- The current waste management infrastructures have not been designed for retrieval of recyclables - low rate of recycling (~4%)
- No source segregation in place
- No system in place for collection and management of waste streams such as e-wastes, construction and demolition debris, etc.
- The overall system is outdated and goes against the precepts of sustainable waste management whereby more thrust is laid on material & energy recovery
- Lack of information on solid waste management projects, initiatives.

Needs

- ✓ High time to have an Integrated National Solid Waste Management Strategy with clear vision, objectives and targets and with a revised legal framework to meet the needs of a new strategy.
- ✓ Reduce reliance on landfilling and move from linear economy focusing on waste management to circular economy which lays emphasis on resource management.
- ✓ Encourage prevention and minimisation of solid waste generation by adopting responsible consumption and production practices.
- ✓ Use of economic instruments for the purpose for which they were intended

Recommendations during Les Assises de l'Environnement

- ✓ Finalise the National Solid Waste Management Strategy at the earliest
- ✓ Implement segregation at source at national level for MSW – promulgation of regulations, provision of separate bins for wet and dry wastes, etc
- ✓ Setting-up of Material Recovery Facilities (sorting centres, composting plants)
- ✓ Setting up of civic amenity centres (déchetteries) at Local Authority level for the collection of bulky wastes, including e-wastes, construction and demolition debris
- ✓ Application of Extended Producer Responsibility approach to manage waste streams such as e-wastes, etc.
- ✓ Implement deposit-refund schemes for other waste streams such aluminium cans, other types of plastics
- ✓ Need for feasibility studies before considering waste-to-energy projects in the long-term
- ✓ Need for proper systems for collection and management of other wastes streams like glass, textiles , etc
- ✓ Recyclers to be given incentives in terms of equipment for recycling

Long-Term Vision

- ▶ By 2030, to achieve at least 70% diversion of solid wastes from landfilling through the establishment of an integrated and sustainable waste management system in a progressive manner
- ▶ By 2030, to achieve 80% collection of hazardous wastes generated for treatment and/or exportation



Policies and Strategies / Approach for Action Plan & Implementation

Strategic Area I: Promoting responsible consumption and production

▶ **Action: Harmonisation of a Regulatory Framework**

- ▶ Harmonising the Environment Protection Act and the Local Government (Dumping and Waste Carriers) Regulations 2003 to address the offence made with regards to illegal dumping of wastes.
- ▶ Review of the penalty for the offence made with regards to illegal dumping of wastes.

▶ **Policy: Development of a Framework for Extended Producer Responsibility (EPR)**

- ▶ In-depth discussions with key stakeholders on the EPR system (starting with E-wastes)
- ▶ Technical Working Group drafting the EPR Regulations including the roles, responsibilities and accountability of the importer, distributor, consumer, Ministry and PRO.
- ▶ **Status of Project:** Comments are being awaited on the draft regulations from the Private Sector (Business Mauritius & MCCI)
- ▶ **Planned Actions**
 - ▶ The draft regulations will be sent to the State Law Office for vetting and is expected to be promulgated in 2021
 - ▶ Draft regulations on Extended Producer Responsibility for other items will be initiated in 2021

Strategic Area II: Maximising Resource Recovery

▶ **Action: Increasing the capture and collection of PET bottles through provision of eco-bags and fixing of eco-bins**

- ▶ Meeting with Local Authorities to discuss on the practical implications of this measure

- ▶ Procurement exercise for acquisition of the bags & eco-bins

- ▶ Distribution of 4,000 eco-bags to households and placement of 400 eco-bins islandwide

▶ **Status of Project**

- ▶ Bids received for the supply of eco-bags are under evaluation

- ▶ Awaiting financial clearance for project on eco-bins

▶ **Planned Actions**

- ▶ Supply of eco-bags and awareness-raising by 1st quarter of 2021

- ▶ Fixing of eco-bins in 2021

Strategic Area II: Maximising Resource Recovery

- ▶ **Action: Promoting the recycled of used tyres**
 - ▶ 4500-5000 of used tyres are generated annually
 - ▶ Budget Measure: Financial incentive of Rs. 2,000/tonne of used tyres recycled or exported for recycling
 - ▶ **Project:** Setting-up of a used tyres recycling/processing facility in Mauritius
 - ▶ **Status:** Bidding documents (on BOT basis) have already been prepared and will be launched soon

Strategic Area II: Maximising Resource Recovery

▶ **Action: Setting-up and operation of Civic Amenity Centre (CAC)**

- ▶ **Purpose:** To allow households and SMEs to dispose of certain waste items that are not accepted as part of the regular waste collection process
- ▶ **Wastes accepted at a CAC:** paper/carton, plastics, metals, construction and demolition wastes, used tyres, E-wastes, green wastes, wood wastes and waste oils

▶ **Status of Project**

- ▶ The first CAC has been constructed at La Chaumiere transfer station and is operational since 18th Nov. 2020.
- ▶ Another CAC is being constructed at La Laura transfer station and will be operational by the 1st quarter of 2021

▶ **Planned Actions**

- ▶ Tender for CACs at Roche Bois, La Laura and La Brasserie transfer stations are being finalised
- ▶ Other civic amenity centres are planned to be constructed in 7 other strategic locations

Strategic Area II: Maximising Resource Recovery



Civic Amenity Centre at La Chaumiere



Planned Civic Amenity Centres

Strategic Area II: Maximising Resource Recovery

▶ **Action: Setting-up and operation of composting plants and sorting units**

- ▶ The new Solid Waste Management Strategy, funded by the AFD, comprises two phases:
 - ▶ **Phase 1:** The preparation of the Strategy and Action Plan, including a baseline review, and an analysis of strategic options and recommendations.
 - ▶ **Phase 2:** Feasibility study of composting plants and sorting units. (North and West)
- ▶ Phase 1 of the Strategy has been completed and approval has been obtained from Government to move to Phase 2 of the Consultancy study.
- ▶ **Status of Phase 2:** Ongoing and will be completed by end March 2021
- ▶ **Planned Actions**
 - ▶ Following the completion of Phase 2, a **transaction advisor** will be recruited to prepare the request for proposal documents for the setting-up and operation of a composting plant and sorting unit on a PPP basis
 - ▶ Launching of document for setting-up and operation of a composting plant and sorting unit on a PPP basis by August 2021
- ▶ Time frame: Composting plant and sorting unit expected to be commissioned by 2023/2024

Strategic Area II: Maximising Resource Recovery

- ▶ **Action: Implementation of waste segregation at source**
 - ▶ **Acquisition of bins:** Technical specifications and number of bins to procure and procurement exercise to acquire bins. (Dry and Wet wastes)
 - ▶ **Distribution of bins and sensitisation**
 - ▶ **Amendments to Local Government Act or by-laws or new regulations to make waste segregation at source an obligation.**
 - ▶ Discussions with LAs on collection of segregated wastes (collection frequency, collection vehicles: separate collection vehicles or compartmentalised collection vehicles).
 - ▶ Note: Source segregation will be implemented once the required infrastructures (composting plant and sorting unit) have been commissioned.
 - ▶ Time frame: Implementation of source segregation expected by 2023/2024

Strategic Area II: Maximising Resource Recovery

- ▶ **Action: Setting-up of a construction and demolition (C&D) wastes management system**
 - ▶ Regulatory Framework for recycling of C & D wastes , **if required.**
 - ▶ *Segregation of C&D wastes on construction sites*
 - ▶ *Development of standards for use of recycled C&D wastes*
 - ▶ *Obligation to use a minimum % of recycled C&D wastes*
 - ▶ C&D waste recycling by stone crushing companies
 - ▶ Time frame: Medium to long-term
- ▶ **Action: Banning of green wastes and selected recyclables at transfer stations and landfill**
 - ▶ Drafting of a policy paper on the banning of green wastes and selected recyclables from transfer stations and the landfill.
 - ▶ Amendments to any existing Regulations and implementation of the Policy.
 - ▶ Local Authorities: Composting of green/market wastes

Strategic Area II: Maximising Resource Recovery

- ▶ **Project: Consultancy services for preparation of feasibility study for a scrapyard facility for end-of-life vehicles in Mauritius**
 - ▶ Status
 - ▶ Bids received have already been evaluated
 - ▶ Feasibility study to start by beginning of 2021

Strategic Area III: Tapping the energy recovery potential of wastes

▶ **Action: Solid Waste Characterisation Studies**

- ▶ National solid waste characterisation studies over a 1-year period at 5-year regular intervals.
- ▶ **Status:** A national solid waste characterisation study is currently ongoing and will be completed by mid 2021.

▶ **Action: Implementation of anaerobic digestion of organic wastes (food wastes from hotels and households, market wastes)**

- ▶ Procurement of consultancy services for the feasibility study
- ▶ Initiation of the procedures under the PPP route for the setting-up of the biogas plant:
- ▶ Commissioning and operation of the biogas plant on a Design, Build, Operate and Transfer basis
 - ▶ *Procurement*
 - ▶ *Pre-conditions (EIA)*
 - ▶ *Design, Construction and operation*
 - ▶ **Time frame: medium to long term**

Strategic Area III: Tapping the Energy Recovery Potential of Wastes

► **Action: Implementation thermal waste-to-energy (WtE) plant (Long-Term)**

It must be recognised that recycling and resource recovery has its limitations and that thermal WtE solutions may eventually be required in Mauritius in the long term due to the increasing amount of wastes being generated.

However, prior to considering thermal WtE, the following pre-requisites are primordial:

- **In-depth feasibility study** of solid waste incineration including detailed investment costs, operating and maintenance costs, cost-benefit analyses, design and sizing of the different components of the incineration plant and siting criteria, amongst others.
- **Sensitisation and awareness-raising campaign** on modern incineration plants with advanced flue gas treatment systems, the potential environmental impacts of the incineration plant and the proposed mitigation measures.
- Establishment of an institutional and regulatory framework for WtE projects.
- Initiation of the procedures under the PPP route for the setting-up of the incineration plant.
- The implementation of WtE in Mauritius is only expected in the long-term once all other options have been explored.

Strategic Area IV: Ensuring the safe disposal of solid wastes

▶ **Action: Increasing the disposal capacity of the Mare Chicose landfill**

- ▶ Vertical Expansion of the Mare Chicose landfill to increase its disposal capacity for at least 10 years
- ▶ **Status:** Bidding documents have been launched. It is expected that the Vertical Expansion Works will start by June 2021.

▶ **Action: Search for alternative sites for landfilling**

- ▶ Discussions with owners of land adjacent to Mare Chicose landfill in view of land acquisition
- ▶ Continue the search for another site for the development of a landfill

Strategic Area V: Information, Education and Communication

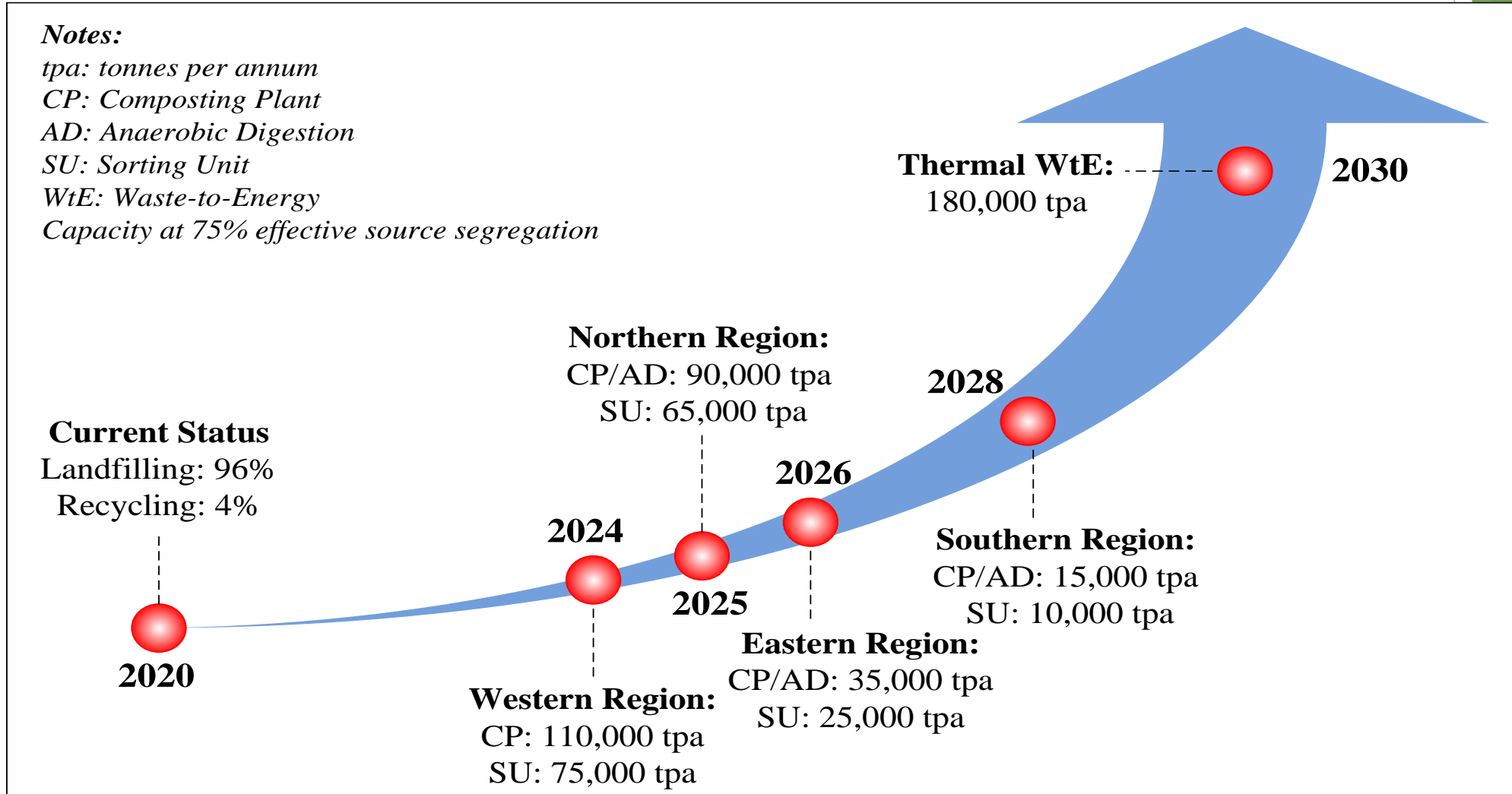
▶ **Action: Capacity-building of staffs at the SWMD and Local Authorities**

- ▶ Capacity-building on different waste management techniques.

▶ **Action: Sensitisation and awareness raising**

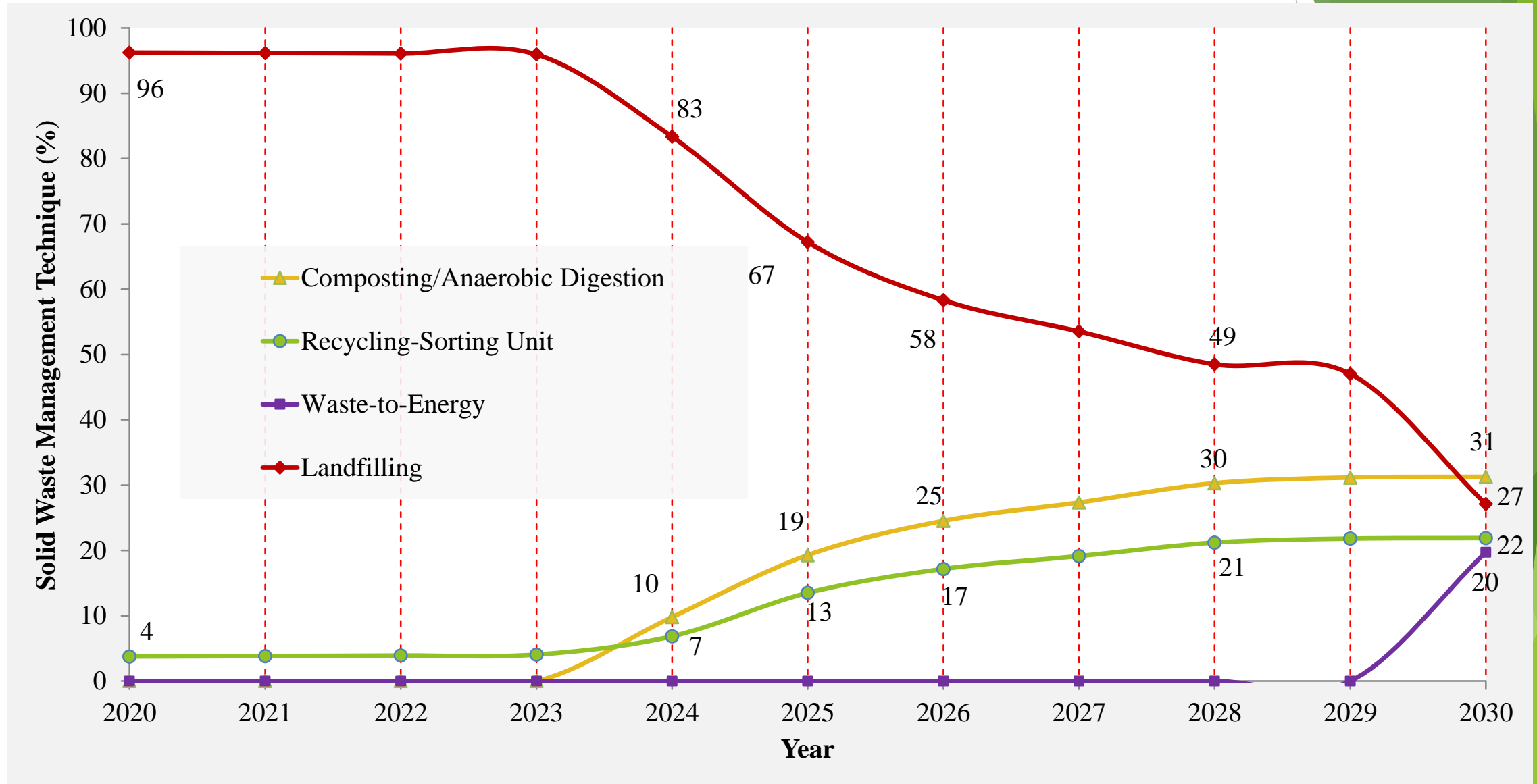
- ▶ Communication, sensitisation and awareness-raising campaigns at national level and in schools/colleges on the impacts of waste generation and mismanagement and sustainable consumption and production practices that can be adopted.
- ▶ Sensitisation and awareness-raising campaigns at national and regional levels on upcoming solid waste management projects.
- ▶ Sensitisation and awareness raising campaigns during sports, religious and cultural events.

Roadmap for the solid waste sector



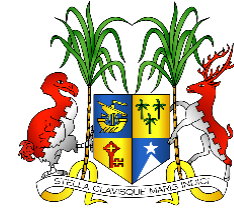
- **Note:** Thermal WtE will only be envisaged in the long-term **if the need arises** and subject to the outcome of a proper feasibility study and the setting-up of all legal and institutional frameworks

Expected waste diversion by 2030





Ministry of Environment, Solid Waste Management & Climate Change



Thank you for your kind attention

