



Can integrated Solid waste management for circular economy?

Egypt Case Study

Presented by
NSWMP

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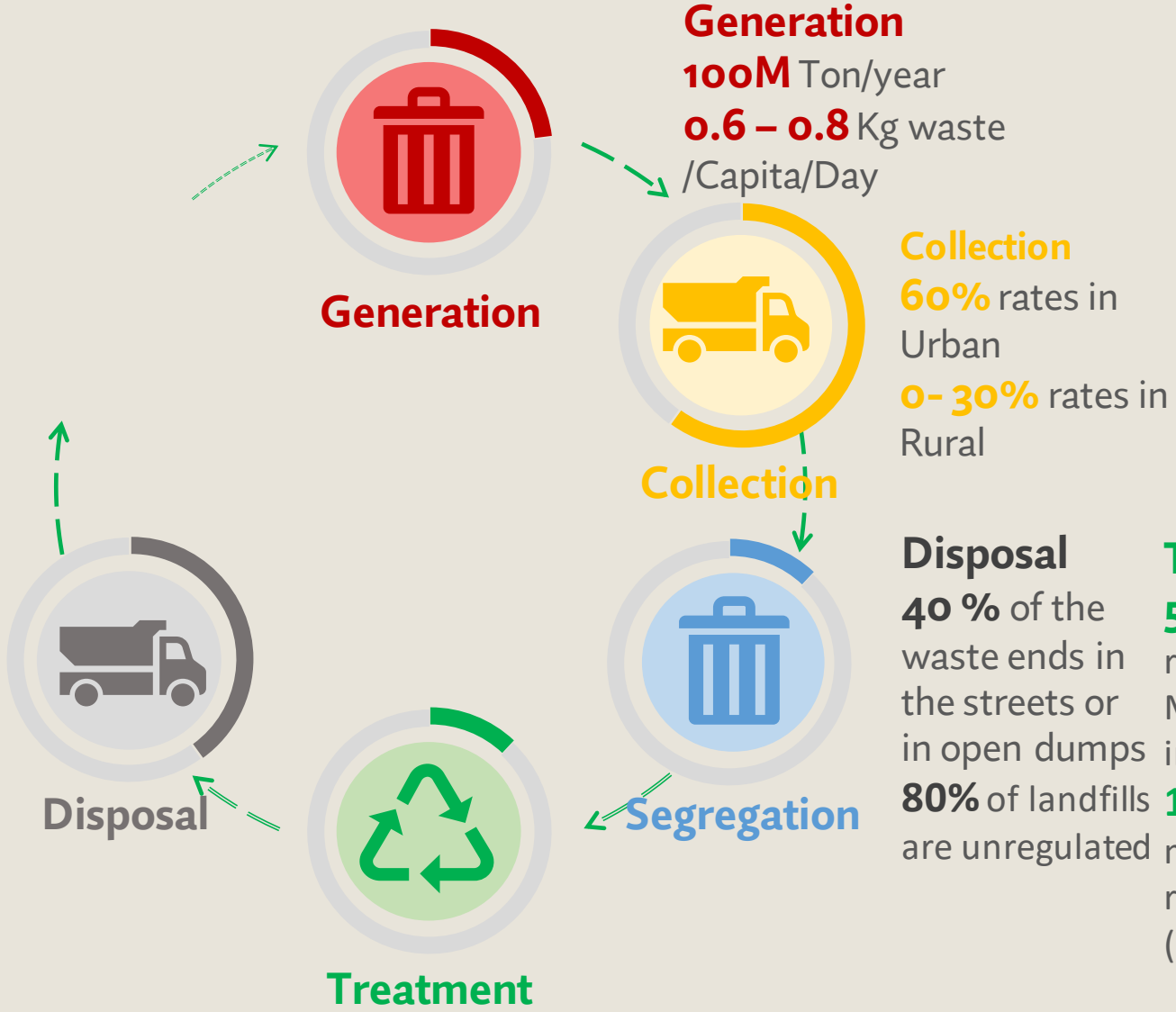
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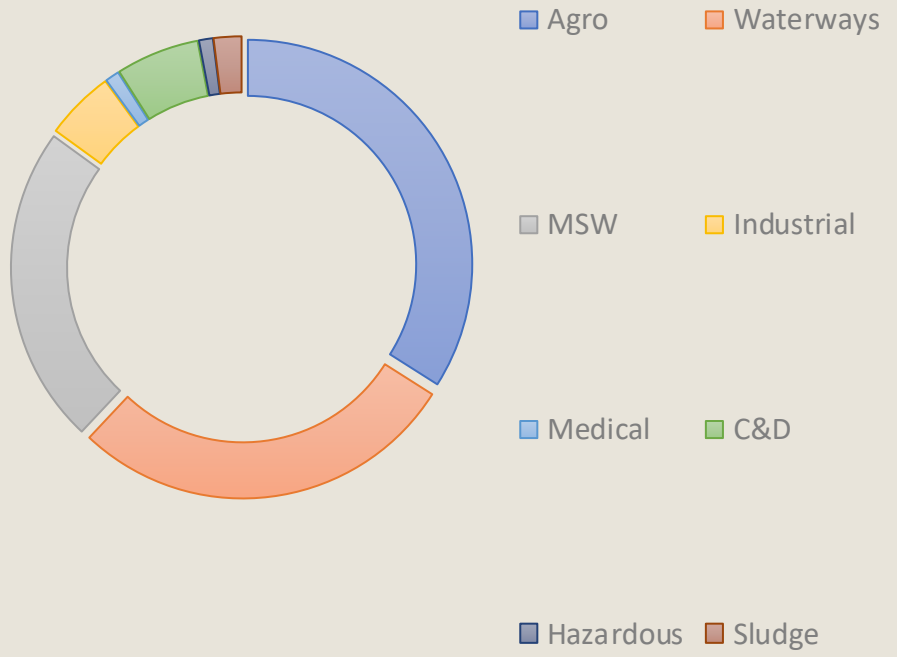
01 Introduction

Waste Management in Egypt

Solid Waste Management (SWM) has become a major concern in Egypt for many years now. The magnitude of the problem has increased due to rapid population growth, fast-growing urbanization rate (20 new cities). Moreover, the diversification of SW has put further burden on the quality of life, freshwater resources, human health and general local ecosystems resulting in serious environmental impacts.



Treatment
5 % of waste is recycled. Mostly by the informal sector
12% of waste max is recovered (WTE,..)





02 Problems and Potential Solutions

Waste Management Cycle – Problems & Impact

Impact on Climate

Decay of waste generates methane (greenhouse gas)

Soil and underground water toxicity (E-Waste and leachate)

Air pollution from burning of waste and higher Total Suspended Particles, affecting public Health.

Plastic littering affecting biodiversity/Marine life

Higher risk of clogging sewer systems in Delta

Lack of Recycling means higher raw material production and higher Energy Consumption (higher greenhouse gases)

Higher amount of landfilled waste means more transportation and emissions

Unregulated Landfills
 Open dumps and disposal in streets
 Marine littering
 Clogging sewage with plastic



Waste Management Cycle – Potential Solutions

Design products with higher recyclability for circular economy
 EPR systems
 Strategies and Laws to incentivize investing in waste management

Reducing Volume of waste
 Closure of unregulated landfills and open dumps
Better planning for landfills, better practices in Disposal



Generation

Education and Raising Awareness
 Promote **Reduce** and **Reuse**
 Culture for the public before even Recycle it



Collection

Waste Inventory Monitoring Systems and tools
 Better Infrastructure and collection plans
Capacity building for collectors and regulators
 Regulatory Reforms



Segregation

Better Infrastructure and capacity building for workers
Educational Material and best practices



Treatment

Technology Transfer = higher Recycling rate
 Infrastructure for treatment and Waste to Energy Facilities
 8 in progress
Capacity building for SMEs and NGOs Feasibility studies



Disposal



03 NSWMP

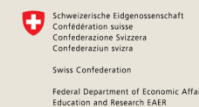
NATIONAL SOLID WASTE MANAGEMENT PROGRAMME

Partners

Donors

The Programme was launched in 2012 under the Ministry of Environment. In Behalf of BMZ (Federal Ministry of Economic Cooperation and Development in Germany), GIZ through the NSWMP supports the official partners in Egypt (The Ministry of Environment and The Waste Management Regulatory Authority (WMRA)) to establish a sustainable and integrated solid waste management system in four governorates, it aims at restructuring the waste sector at the national, regional and local level and establishing an independent central entity to regulate the management of the municipal solid waste system. The programme has two main components, the technical component and the financial one

The programme is co-financed by national (30%) and international (70%) funding institutions:





Project Funding Mechanism

The mechanism of financing and implementing of this program follows the Blending Facility approach, whereby several partners contribute to the financing of the program in addition to National Funds (represented by the Waste Management Regulatory Authority). Where a primary partner (German Development Bank) is delegated by EU and SECO will manage the investment component of the program financially and technically, in cooperation with the program management unit. The implementation is carried out through the waste management units in the program governorates and the contracted international and local consulting companies.

Project Objectives



Protecting the Environment

Protecting the public health of citizens & the environment from the negative effects of unsustainable waste management.



Institutional Development

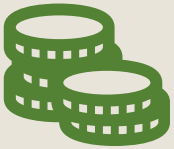
Developing and restructuring the waste sector at the national and decentralized level, including the institutional and legislative aspect, and providing efficient human resources to manage the system to reach a good level of service



Improving the Infrastructure

Providing the necessary infrastructure for the program governorates with specific service areas.

Project Objectives



Financial Sustainability

Develop mechanisms for long-term financial sustainability and improvements in the medium term (Immediate Intervention Plan).



Public Participation

Raising environmental awareness among young people and citizens in general with the integrated management of the solid waste system and working to change the behavior through awareness campaigns and community participation



Economical Development

Providing the necessary infrastructure for the program governorates with specific service areas.



04
Contribution

Financial Component

01 Equipment

Supplying equipment to SWMU in the 4 governorates



02 Infrastructure

Upgrading Mechanical and Biological treatment units as well as transfer stations, rehabilitation of landfills and closure of unregulated ones.



03 Current Tendering

7 tenders on going



04 Future



Technical Component

01

Institutional Strengthen

Institutional Strengthen and capacity building of the waste management regulatory authority to better regulate the waste management in Egypt



02

Governorates

Build and enhance the capacity of the solid waste management units in 4 different governorates in financial management and citizen participation



03

Private Sector

Improve the capacity of the SMEs working across the value chain of waste management specially in collection and recycling industry



04

Education

Put the foundation of the waste management education and training qualifications in a practical way



Contribution to the Sustainable Development Goals and Egypt's 2030 Sustainable Development Strategy



3 GOOD HEALTH AND WELL-BEING



Production of series of videos and virtual trainings on Protective Personal Equipment (PPE) for waste workers

Preparing materials and holding training courses on occupational safety and health

4 QUALITY EDUCATION



Assessment and mapping of available curricula in SWM within Universities and Institutes in Egypt

Three 3 training modules on state-of-the art technology for waste management (Maximum Yield Technology/MYT) for (Students, University staff including professors, private consultants, WMRA Staff, SWMUs, RBOs)

Development of an Online Waste Recycling Hub that hosts courses for building the capacities and help the SMEs in the field of waste management.

15 SMEs graduated from Teroos “Growth Management Programme for Waste Businesses”.

<https://wmra-academy.com/>

11 SUSTAINABLE CITIES AND COMMUNITIES



30.000 house holds have an improved waste collection and recycling systems in the 4 pilot governorates due to the establishment of 13 primary waste collection and recycling models.

Standardized digital tools for cost calculation regarding solid waste

Development of a Performance benchmark calculation program (A digital program to measure the performance of the waste management system at the governorate level)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Introduction of Extended Producer Responsibility (EPR) guidelines and implementation of EPR-pilot on Packaging waste in Red Sea Governorate (German Federal Ministry of Environment) that will reduce the marine litter and increase the recycling rates.

Updating Egyptian 16 construction codes to support the recycling industry of construction and demolition waste, this will increase the business opportunities in the field of construction and demolition waste.

Development of 19 business opportunities and feasibility studies in the field of waste recycling in Egypt.

A prototype initiative to collect spent fluorescent lamps in Alexandria Governorate



Concept of circular economy first introduced in Egypt through the organization of “Egypt’s Circular Economy: Access to Finance for Egypt’s Waste Industry” conference where awareness on the concept as framework concept for integrated solid waste management was created.

Closure of many unregulated landfills that directly contribute to generation of methane gas.



Introduction of Extended Producer Responsibility (EPR) guidelines and implementation of EPR-pilot on Packaging waste in Red Sea Governorate that will reduce the marine litter and increase the recycling rates

improved collection rates, sound management of land based waste reduces proliferation of wastes on land as well as in the sea and rivers.

Waste Management For Circular Economy

- Durable Material for reuse
- Higher recyclability
- Climate friendly product design
- Biodegradable and greener materials
- Active promotion for **Refuse**, **Reduce** and **Reuse** concepts for the public before even Recycling the waste
- Zero-waste industrial process



Way Forward

01 Institutional Strengthen

Restructuring and capacity building of SWMU, WMRA and RBOs, including M&E and SWM-cost calculation



02 Green Entrepreneurs and NGOs

Private sector and NGO integration is Climate sensitive SWM, Entrepreneurs Map & Agri-waste map



03 Governorates

Continue the support of the four pilot governorates in the field of Waste Management and circular Economy

