

H2020/NAP indicator assessment

Waste

Egypt

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Organisation: EEA



European Environment Agency



H2020 / NAPs Indicators	
Thematic area Waste	Date: 10/07/2020 Author(s): Mohamed Tawfic, Emanuele Bigagli
Policy theme IND 1. Municipal Waste Generation	
Indicators: IND 1.A Municipal waste composition IND 1.B Plastic waste generation per capita	

Key policy question:
What are the status and trends of municipal solid waste generation?

- Key messages**
- MSW generation in Egypt has been increasing in the last years, reaching 22 million tonnes/year in 2016 (+36% over the year 2000), driven by population growth and changes in lifestyle and consumption habits.
 - MSW in Egypt is composed mainly of organic waste (43.5%), and recyclable materials (24.3%). As such, there is a strong potential to improve current recycling rates and to convert waste into Refuse-Derived Fuel (RDF).
 - Around 81-83.5 kg per capita/year of plastic waste have been generated in 2015-2016. Given the increase trend in MSW generation, it can be assumed that plastic waste generation has also been increasing in the last decade.

Key figures/tables

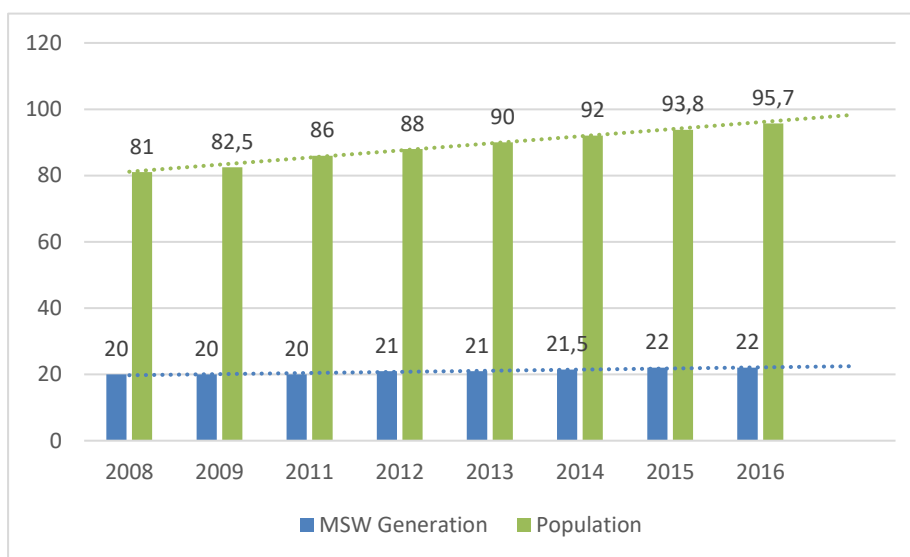


Figure 1. Total municipal solid waste (MSW) generation (thousand tonnes) and total national population, 2008-2016.



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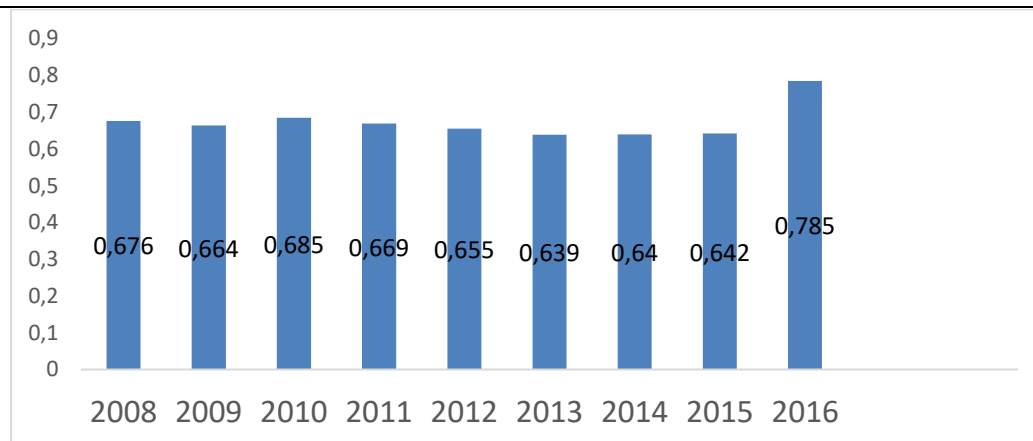


Figure 2. MSW generation (kg per capita/day), 2008-2016.

Key assessment text

Egypt has the highest waste generation rate in the ENP South Region, on account of having the highest national population (about 100 million). Population growth is the main driver of MSW generation in Egypt, together with changes in lifestyle and consumption habits of people, especially in relation to the migration from rural to urban areas.

In 2016, the total annual MSW generation in Egypt reached 22 million tonnes per year (Figure 1), with an increase of more than 36% since 2000. In the same year, the amount of MSW generated per capita was of 1.07 kg/day (or 391 kg/year) in urban areas and 0.5 kg/day (or 183 kg/year) in rural areas (Figure 2 shows the total annual values). In 2025, MSW generation in Egypt is expected to reach 35 million tonnes per year (United Nations, 2011).

Changes in consumption trends have also caused a diversification in the generation of MSW, especially in urban areas (MSEA, 2013). These changes were clearly reflected on the increase in the rate of MSW generation per capita over the last years.

References in key assessment text

MoE. (2013). Government of Egypt. Annual Report for Solid Waste Management in Egypt, 2013, Volume: 2: The Report.

MoE. (2017). Government of Egypt. State of Environment in Egypt Report, 2016.

United Nations. (2011). Shanghai Manual. Municipal Solid Waste Management. Turning Waste into Resources – A Guide for Sustainable Urban Development in the 21st Century, (2010), 1–36.

Methodology for indicator calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:

<https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment>

Data issues

The correlation between population growth and MSW generation, mentioned in the assessment text, is not clearly observed in Figure 1.

Moreover, the spike of MSW generation in 2016 observed in Figure 2, is not reflected in Figure 1.



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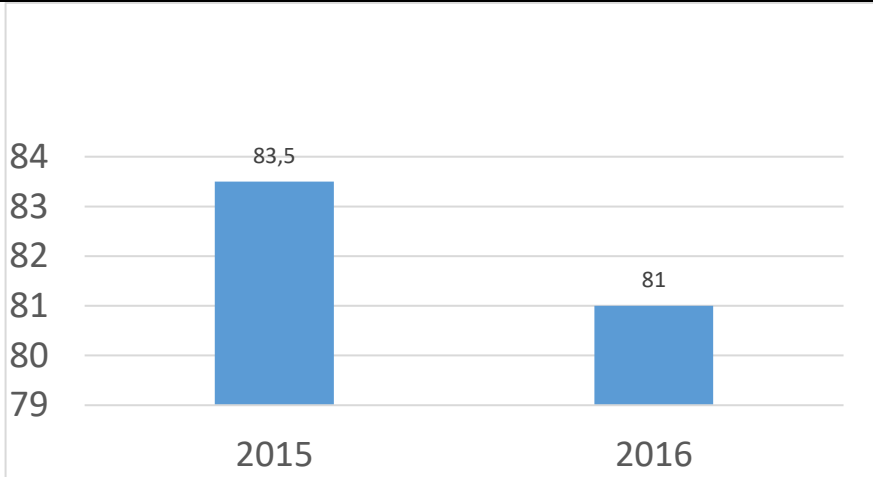


Specific policy question: <i>what is the composition of municipal solid waste in your country?</i>											
Specific figure(s)											
<table border="1" style="margin: auto;"> <caption>MSW Composition in Egypt</caption> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Organic</td> <td>43.5%</td> </tr> <tr> <td>Recyclable</td> <td>24.3%</td> </tr> <tr> <td>RDF</td> <td>13.9%</td> </tr> <tr> <td>Others</td> <td>18.3%</td> </tr> </tbody> </table>		Category	Percentage	Organic	43.5%	Recyclable	24.3%	RDF	13.9%	Others	18.3%
Category	Percentage										
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Figure 3. MSW composition in Egypt.											
Specific assessment text											
<p>Waste composition is an essential indicator with a strong bearing on the possibilities of resource recovery, and which also gives a perspective on possible circular economy approaches. The composition of MSW depends to a large extent on the affluence of the population contributing to the waste stream. Waste composition is important to decide the most suitable options for disposal and the potential for recovery.</p> <p>MSW in Egypt is composed mainly of organic waste (43.5%; see Figure 3). More than 24% of the MSW generated is composed of materials that can be recycled. In addition, nearly 14% of all MSW generated can be converted into Refuse-Derived Fuel (RDF). These values clearly indicate the potential opportunity to reduce landfilling and increase the economic feasibility and value-added of the waste sector.</p>											
References in specific assessment text											
MoE. (2018). Government of Egypt. Integrated solid waste management master plans (2018).											
Methodology for indicator calculation											
<p>The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment</p>											
Data issues											
The temporal coverage of the data available is limited to a specific year.											



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Specific policy question: <i>is generation of plastic waste per capita decreasing?</i>						
Specific figure(s)						
 <table border="1"> <thead> <tr> <th>Year</th> <th>Plastic waste generation (kg per capita/year)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83,5</td> </tr> <tr> <td>2016</td> <td>81</td> </tr> </tbody> </table>	Year	Plastic waste generation (kg per capita/year)	2015	83,5	2016	81
Year	Plastic waste generation (kg per capita/year)					
2015	83,5					
2016	81					
Figure 4. Plastic waste generation (kg per capita/year) in Egypt in 2015-2016.						
Specific assessment text						
The plastic waste generation per capita is a useful indicator to perform a preliminary assessment of marine litter. However, there is currently no official indicator of plastic waste generation in Egypt. Figure 4 shows that the amount of plastic waste generation in Egypt in 2015 was around 81-83.5 kg per capita/year. It was elaborated using only data available in scientific literature.						
References in specific assessment text						
Methodology for indicator calculation						
Current estimates of plastic waste generation in Egypt are based on existing studies, as there is no official indicator to measure this aspect. The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment						
Data issues						
There is no official indicator in Egypt to measure plastic waste generation; the information reported is based on data taken from scientific studies.						

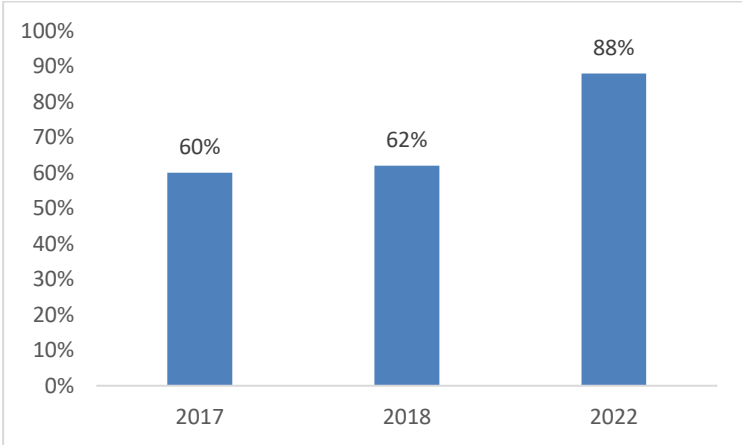


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H2020 / NAPs Indicators	
Thematic area Waste	Date: 10/07/2020 Author(s): Mohamed Tawfic, Emanuele Bigagli
Policy theme IND 2. “Hardware” of Waste Management	
Indicators: IND 2.A Waste Collection IND 2.B.1% of waste to uncontrolled dumpsites	

Key policy question: <i>is municipal solid waste management improving?</i>
Key messages
<ul style="list-style-type: none"> 60% of all MSW generated was collected in 2016-2017. Urbanisation and population increase are the main reasons hindering waste collection efficiency. About 81% of the MSW collected goes to both regulated and non-regulated dumpsites, while 12% is recovered. A target to increase MSW collection rate to 88% of MSW generated, and to recycle and treat 60% of all MSW collected by 2022, have been set by the new MSW management plan.

Specific policy question: <i>what is the progress of municipal solid waste collection? How much solid waste is collected?</i>								
Specific figure(s)								
 <table border="1"> <thead> <tr> <th>Year</th> <th>Share of MSW collected (%)</th> </tr> </thead> <tbody> <tr> <td>2017</td> <td>60%</td> </tr> <tr> <td>2018</td> <td>62%</td> </tr> <tr> <td>2022 (Target)</td> <td>88%</td> </tr> </tbody> </table>	Year	Share of MSW collected (%)	2017	60%	2018	62%	2022 (Target)	88%
Year	Share of MSW collected (%)							
2017	60%							
2018	62%							
2022 (Target)	88%							
Figure 5. Share of MSW generated that was collected in Egypt in 2017 and 2018, and target for 2022.								
Specific assessment text								
The efficiency of waste collection is one of the main problems of waste management in Egypt. The process of urbanization, with the increase in informal settlements especially in Cairo and other big cities since early 1970s, has resulted in the development of a narrow network of streets, with non-								



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regulated building, which contributes to aggravate waste collection and management in those districts.

As shown in Figure 5, 60% of all MSW generated was collected in 2017, while nearly 40% was not collected, corresponding to about 9 million tonnes/year. Uncollected waste has a negative impact on public health, and is one of the main causes of air pollution and greenhouse gas (GHGs) emissions. In fact, in 2015 the waste sector contributed to about 8.1% of the national GHGs emissions in Egypt (BUR, 2018).

To this respect, Egypt has set a new MSW management system, which includes an ambitious plan to raise the effectiveness and the capacity of the MSW management through an increase of the collection efficiency rates to reach 88% of the total MSW generated. This plan includes the involvement of the private sector into the management process.

References in specific assessment text

MoE. (2020). Government of Egypt. State of Environment in Egypt Report, 2018. Egypt’s First Biennial Update Report, 2018.

Methodology for indicator calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:

<https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment>

Data issues

The temporal coverage of the data is limited to the years 2017 and 2018.

Specific policy question: *amount of municipal solid waste captured by the management system and delivered to an official facility for treatment*

Specific figure(s)

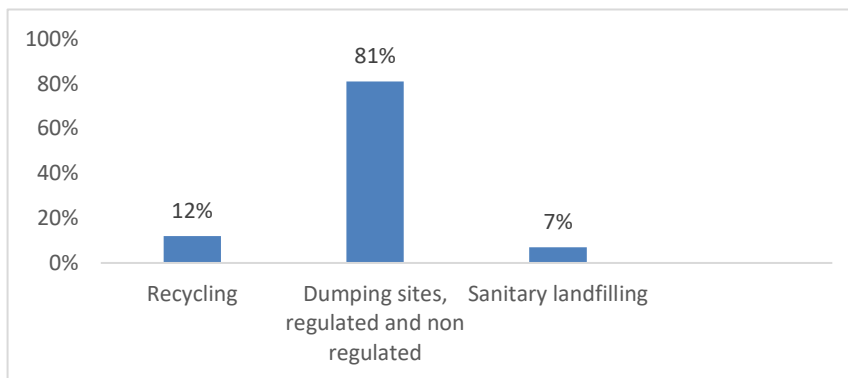


Figure 6. MSW disposal in 2016, as % of the total MSW collected.



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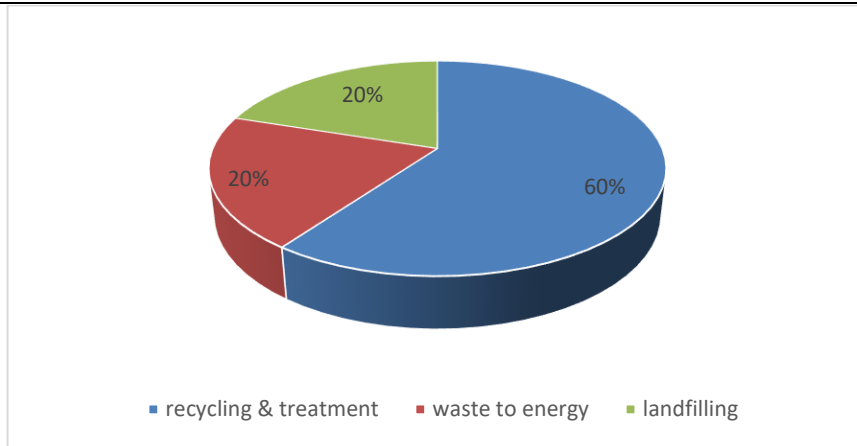


Figure 7. New MSW management plan targets for 2022.

Specific assessment text

The safe disposal of the collected waste is another pressing issue for waste management in Egypt. In particular, the lack of funds for waste management leads to delays and insufficiency in service coverage and efficiency.

Figure 6 shows that about 81% of the collected waste currently goes to dumpsites (both regulated or not) and only 12% is recovered, giving an indication of the limits of the current waste management system.

These values also give an indication about the economic losses caused by weak waste management, besides the cost associated with of negative impacts of the uncollected MSW on environment and public health.

Egypt has taken a number of actions in order to organize the waste management procedures and increase the efficiency of these procedures through several pillars that include:

- Developing a solid waste management master plan for each of the 27 governorates including an assessment of the current situation, and the identification of gaps and investment opportunities.
- Implementing a pilot project to develop a solid waste management system in 4 governorates (Gharbia, Kafr El-Sheikh, Assiut, Qena).
- Developing a new system at the national level for solid waste management, aiming to increase the efficiency of the waste collection and the recycling quantities and to decrease the land filling by establishing the needed infrastructure to fill the gaps. In addition, efforts are made to the allow private sector to manage some of the newly established landfills. Moreover, the private sector will be involved in the door-to-door collection and transportation of MSW.
- Launching a national campaign to raise the environmental awareness about the different environmental issues including the waste management (Reduce, Reuse, Recycle).

The Ministry of Environment is currently working in cooperation with the Ministry of Local Development on the preparation of a new law for waste management to deliver to the Parliament for approval, which concerns the concepts of the circular economy and Extended Producer Responsibility (EPR).

The new MSW management plan aims to increase the capacity of the safe treatment and disposal of the collected MSW, setting the target of 60% of all MSW collected to be recycled and treated



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by 2022. The plan includes also a target of waste-to-energy opportunities to 20% of the MSW collected, and a significant reduction of landfilling rates by 20%. The implementation of this plan will lead to a significant improvement of the efficiency of MSW management, and to a remarkable reduction of the negative impacts of poor MSW management.

References in specific assessment text

MoE. (2018). Government of Egypt. Integrated solid waste management master plans (2018).

Methodology for indicator calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:

<https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment>

Data issues

The temporal coverage of the data available is limited to the year 2016.



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H2020 / NAPs Indicators	
Thematic area WASTE	Date: 10/07/2020 Author(s): Mohamed Tawfic, Emanuele Bigagli
Policy theme IND Q “Software of waste management” (Policies)	
Questions: IND Q.A Marine Litter and Waste Management Framework IND Q.B Resource Recovery IND Q.C Sustainable Consumption and Production	

IND Q.A MARINE LITTER & WASTE MANAGEMENT FRAMEWORK	
Question	Answer (Yes / No / Not reported)
<i>IND Q.A.1.: Is there a National Assessment for ML and its impacts?</i>	YES
<i>IND Q.A.2.: Is there a National plan or strategy for ML?</i>	YES
<i>IND Q.A.3.: Is there a National plan or strategy for waste management?</i>	YES
<i>IND Q.A.4.: Is there a National law on waste?</i>	YES
<i>IND Q.A.5.: Is there a National plan or target to close the dumpsites before 2030?</i>	YES
<i>IND Q.A.6.: Is there a National information system for waste management in place?</i>	NO*
* Egypt is currently working to build a new waste monitoring system through the National Solid Waste Management Programme (NSWMP).	
IND Q.B RESOURCE RECOVERY	
<i>IND Q.B.1.: Is there a National plan or strategy for waste prevention?</i>	YES
Several strategies, plans, and programmes are in place that include waste prevention, such as the National Strategy or Sustainable Development, Egypt Vision 2030, the National Action Plan for Sustainable Consumption and Production, the Agricultural Waste Strategy, the MSW Strategic Directions, and the NSWMP.	



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IND Q.B.2.: Are there mandatory targets for recycling-recovery of packaging waste?	YES
Egypt targets to achieve a recycling of 60% of the MSW collected by 2022 in the new MSW system.	
IND Q.B.3.: Are there EPR or deposit-return schemes for packaging waste?	YES
Several companies in Egypt are performing EPR on a voluntary basis. The concept of EPR has been included in the new waste law, currently being discussed at the Egyptian Parliament at the moment of writing.	
IND Q.B.4.: Are there national policies to eliminate or reduce single-use plastics?	YES
Policies targeting single-use plastics are currently implemented in some Governorates (e.g., Red Sea), while several initiatives are in place at local level. This aspect has been included in the new waste law, currently being discussed at the Egyptian Parliament at the moment of writing.	
IND Q.B.5.: Are there financial recovery activities?	NO*
* Financial recovery activities are being provisionally applied in some districts of the Cairo Governorate.	
IND Q.C SUSTAINABLE CONSUMPTION AND PRODUCTION	
IND Q.C.1.: Are there sustainable consumption and production plans or strategies?	YES
See the National Action Plan for Sustainable Consumption and Production (SCP), issued in 2015.	
IND Q.C.2.: Are there green procurement rules for the public sector in place?	YES
Green procurement rules are in place as one of the main pillars to apply green budgeting of governmental investments.	
IND Q.C.3.: Are there policies to support sustainable tourism?	YES
IND Q.C.4.: Are there policies to support eco-labelling and eco-design?	YES
They are already applied in some sectors such as agriculture and textiles, especially for exported products.	

Methodology for indicators calculation
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Data issues
The information related to indicators Q.A.6, Q.B, and Q.C was not reported.



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Next steps / plans for future work

Egypt has taken a number of actions in order to organise the waste management procedures and increase their efficiency through several pillars that include:

- Developing a solid waste management master plan for each of the 27 governorates including an assessment of the current situation, and the identification of gaps and investment opportunities.
- Implementing a pilot project to develop a solid waste management system in 4 governorates (Gharbia, Kafr El-Sheikh, Assiut, Qena).
- Developing a new system at the national level for solid waste management, aiming to increase the efficiency of the waste collection and the recycling quantities and to decrease the land filling by establishing the needed infrastructure to fill the gaps. In addition, efforts are made to the allow private sector to manage some of the newly established landfills. Moreover, the private sector will be involved in the door-to-door collection and transportation of MSW.
- Launching a national campaign to raise the environmental awareness about the different environmental issues including the waste management (Reduce, Reuse, Recycle).

The Ministry of Environment is working now in cooperation with the Ministry of Local Development on the preparation of a new law for waste management to deliver to the parliament for approval, concerning the concepts of circular economy and EPR.

Egypt has set a new MSW management system, which includes an ambitious plan to raise the effectiveness and the capacity of the MSW management system, to increase the collection efficiency rates to 88% of the total MSW generated. This plan includes the involvement of the private sector into the management process.

The new MSW management plan targets to increase the capacity of the safe treatment and disposal of the collected MSW, setting the target of 60% of all MSW collected to be recycled and treated by 2022. The plan includes also a target of waste-to-energy opportunities of 20% of the MSW collected, and a significant reduction of landfilling rates by 20%. The implementation of this plan will lead to a significant improvement of the efficiency of MSW management, and to a remarkable reduction of the negative impacts of poor MSW management.



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