

Key Indicators Development for Solid Waste Management in Tourism Destinations: Case Study of Hotels in Tunisia

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Questionnaire for Hotels

Evaluation of hotels waste management systems

Name of the Hotel:

Category:

Address/ Governorate:

Year of construction:

Contact person:

E-mail:

Certification /Standards:

GENERAL QUESTIONS:

Number of rooms.....

Number of beds:

Average occupancy.....%

Peaks and low values during high and low season.....

Employees (Total):

WASTE MANAGEMENT

Satisfactions		
	Yes	No
Are you satisfied of the waste management system in this tourist area?	<input type="checkbox"/>	<input type="checkbox"/>
Are you satisfied of the waste management system around the Hotel?	<input type="checkbox"/>	<input type="checkbox"/>

- Where are the waste collection bins placed?
Special place ☐ In the Garden ☐ Outside the hotel ☐
- Does the size of the waste collection bins suitable?
- What is the food service offered in your Hotel?.....

- Buffet ☐ Menu ☐
 • What type of waste are collected separately in your Hotel?
 Organic ☐ Paper ☐ Plastic ☐ Metal ☐ Glass ☐ Others ☐

How much you pay per Month/Year for fertilizers (Garden)?

Or How much fertilizers do you use (Kg) per Month/Year?

Specify the number of cleaning / Waste management staff? Man ☐ Women ☐

Do you have a cleaning contractors?.....

Frequency of waste collection from rooms/ day? 1 ☐ 2 ☐ More ☐

Waste Management Monitoring

	Yes	No
The SW generation, specifically the quantity and composition, is regularly monitored in your Hotel.	<input type="checkbox"/>	<input type="checkbox"/>
The kitchen waste is regularly monitored in your Hotel.	<input type="checkbox"/>	<input type="checkbox"/>
A register of data for the solid waste generated per room (per client).	<input type="checkbox"/>	<input type="checkbox"/>
Is the staff involved in the development of strategies for waste minimization, segregation and collection?	<input type="checkbox"/>	<input type="checkbox"/>
In the hotel, there is a responsible person and an implementation timetable of activities to reduce waste?	<input type="checkbox"/>	<input type="checkbox"/>
There is a plan, featured by your establishment that identifies targets for reducing the amount of waste.	<input type="checkbox"/>	<input type="checkbox"/>
If Yes, what are the identified activities?		

Organic Waste Management

	Yes	No
Appropriate bins are used for depositing and management of organic waste.	<input type="checkbox"/>	<input type="checkbox"/>
Organic waste produced in the hotel kitchen are used in a composting program or another suitable application.	<input type="checkbox"/>	<input type="checkbox"/>
Organic waste produced from gardening activities are used in a composting program or another suitable application.	<input type="checkbox"/>	<input type="checkbox"/>

Inorganic waste management		
	Yes	No
The company has suitable containers for sorting garbage (aluminum, plastic, glass and paper).	<input type="checkbox"/>	<input type="checkbox"/>
Room service staff sorts the garbage when the client does not.	<input type="checkbox"/>	<input type="checkbox"/>
There is an equipped place in which the final sorting waste is made.	<input type="checkbox"/>	<input type="checkbox"/>
Are you collecting batteries separately?	<input type="checkbox"/>	<input type="checkbox"/>
The hotel participates in a recycling program in which he sent duly sorted waste.	<input type="checkbox"/>	<input type="checkbox"/>
Are you sending your electrical and electronic waste to a service provider, who recycles and removes it cleanly?	<input type="checkbox"/>	<input type="checkbox"/>
Are you sending your used printer cartridges to recycling sites, which recycles and eliminates it cleanly?	<input type="checkbox"/>	<input type="checkbox"/>
Final Provision		
	Yes	No
SW produced by the hotel are stored appropriately before final collection.	<input type="checkbox"/>	<input type="checkbox"/>
The hotel verifies and guarantee that the collection and final disposal of waste is carried out efficiently.	<input type="checkbox"/>	<input type="checkbox"/>
Staff Training on Waste Management		
	Yes	No
Hotel staff knows what happens with the collected waste	<input type="checkbox"/>	<input type="checkbox"/>
The hotel has an apprenticeship program for the collection and sorting of waste.	<input type="checkbox"/>	<input type="checkbox"/>
Staff training at least once a year on SWM.	<input type="checkbox"/>	<input type="checkbox"/>

Questionnaire for Municipalities

Name of the Municipality:

Address/ Governorate:

Tourist destination:

Position of the person in charge of the questionnaire:

Contact person:

Waste management in your tourist area

How many hotels exist in your tourist area?.....

How SW is collected from hotels?

Public sector ☐

Private sector ☐

Both private and public ☐

Waste collection by the public sector (Municipality)

What is the cost of waste collection (per ton) by the public sector in your tourist area?

How many times a day the collection of waste is made from hotels?

What are the means used by the public sector (municipality) for waste collection from hotels?

What are the encountered problems when collecting waste from hotels?

What kind of waste do you collect from hotels? Green waste too?

Who is cleaning beaches? How often?

Waste collection by the private sector

What is the waste collection cost (per ton) by the private sector in your tourist area?

Is it about:

Large collection companies ☐

Small collection companies ☐

Both ☐

What is the duration of contracts signed with private collection companies?

What is the percentage of privatization of waste collection in your region / municipality?

In case of separation of green waste from other mixed waste, how does the private collector manage this waste after collection?

What are the private sector's means of collecting waste?

What types of private recycling / sorting companies exist? Number?

Do you cooperate with them (as a municipality)?

Hotel tax

Do you think that the hotel taxes (1% of the turnover for the municipalities) can cover the expenses of the municipality as regards to SWM of hotels?

Do you benefit from the tourism fund? if so, how much (in TND) per year?

Can the municipality choose how to manage these funds according to its needs?

Fate of the waste after collection

What is the circuit of the waste after the collection of the hotels (Valorisation? Landfilling? Dumpsite?)

Are there initiatives for the sorting and recovery of waste collected from hotels?

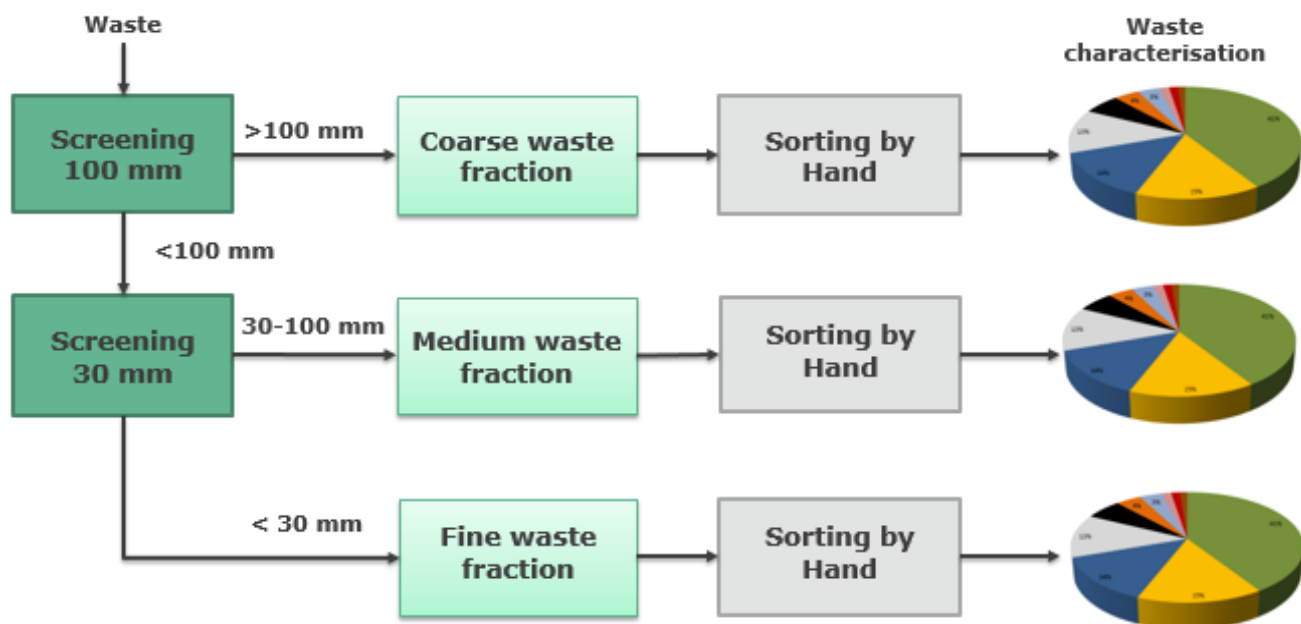


Figure 1. Sorting analysis methodology

Table 1. Key Indicators classification for SWM in tourist destinations

	Indicators
Technical indicators	<ul style="list-style-type: none"> • General information (N° of beds, rooms, occupancy rate, etc) • SW generation in the hotel (kg/day) • SW generation by tourist /guest (kg/day) • SW composition and characteristics • Types of SW generated in different hotels departments • SWM practices in hotels (landfilling, recycling, etc) • Source and characteristics of SW generated from kitchens • SW reduction activities in hotels • Frequency of SW collection from Hotels
Financial indicators	<ul style="list-style-type: none"> • SWM costs per guest-night • SWM general costs paid by hotels • Paid taxes by hotels for SW collection • SW collection costs (per tones) • Adequacy of paid taxes for SWM
Organizational indicators	<ul style="list-style-type: none"> • Role of different actors in SWM in tourism regions • Percentage of TD covered by SW collection services • Types of SW collection services in TD (public or private) • Number of collection and recycling facilities installed in the tourist municipality
Legal indicators	<ul style="list-style-type: none"> • SWM law in tourist areas • National law on the environment • Control law for hotels • Requirements of the municipalities on SWM in hotels • Municipal SWM plan and local objectives
Social indicators	<ul style="list-style-type: none"> • Employee involvement in the separation and recycling activities • Hotels satisfaction (about the cleanliness) • Customer's satisfaction (about the cleanliness) • Responsibility for the assigned area • Motivation of the hotel • Education on SWM in the hotel

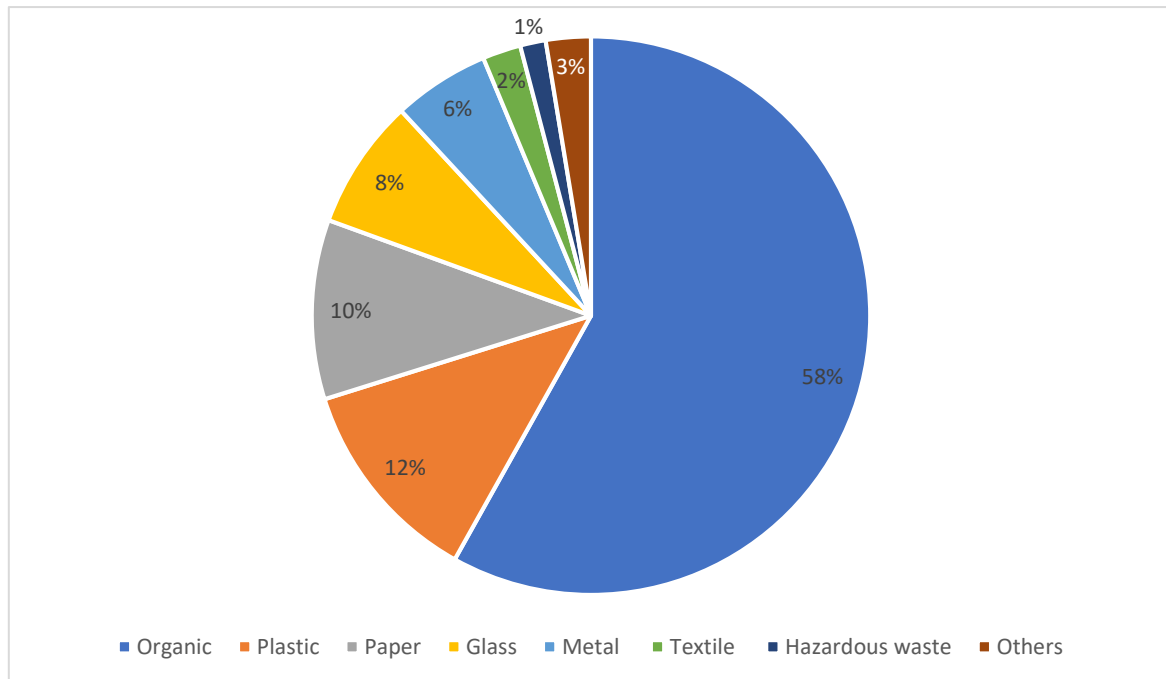


Figure 2. Characteristics of the SW generated by hotels in La Marsa-Gammarth and Hammamet