



**BEYOND PLASTIC MED,**  
**Committed to a plastic-free**  
**Mediterranean**



# Pilot project at La Badira Hammamet



# Methodology

- **Collection of data available online**
- **Individual interviews with stakeholders (anonymised in this document)**
  - ❖ 2 hotels
  - ❖ A producer
  - ❖ A distributor
- **Exchanges as part of the Hammamet College of hotels**

## Mineral waters In Tunisia

- Tunisia boasts **considerable thermo-mineral water potential**.
- Well placed in the list of the world's biggest consumers of mineral water, **it is ranked 4th worldwide**. (Source: Euromonitor International).

There are currently **29 production units in 12 governorates**, producing more than **364,000 bottles per hour**, employing around 3,000 people and generating annual sales of around 637 million dinars.

Total consumption of mineral water reached **2.70 billion litres**, corresponding to around 1 **billion bottles of various capacities: 0.33 cl, 0.5 L, 0.75 L, 1 L, 1.5 L, 2 L, 6 L and 19 L**:

- An annual average of 225 litres per person in 2020, compared with 44 litres in 2007 and 12 litres in 1995.
- Tunisians are using less and less running water and collected rainwater.

**Source:** <http://www.hydrotherapie.tn/portail-de-lhydrotherapie/espace-bien-etre/les-eaux-embouteillees-en-tunisie/>

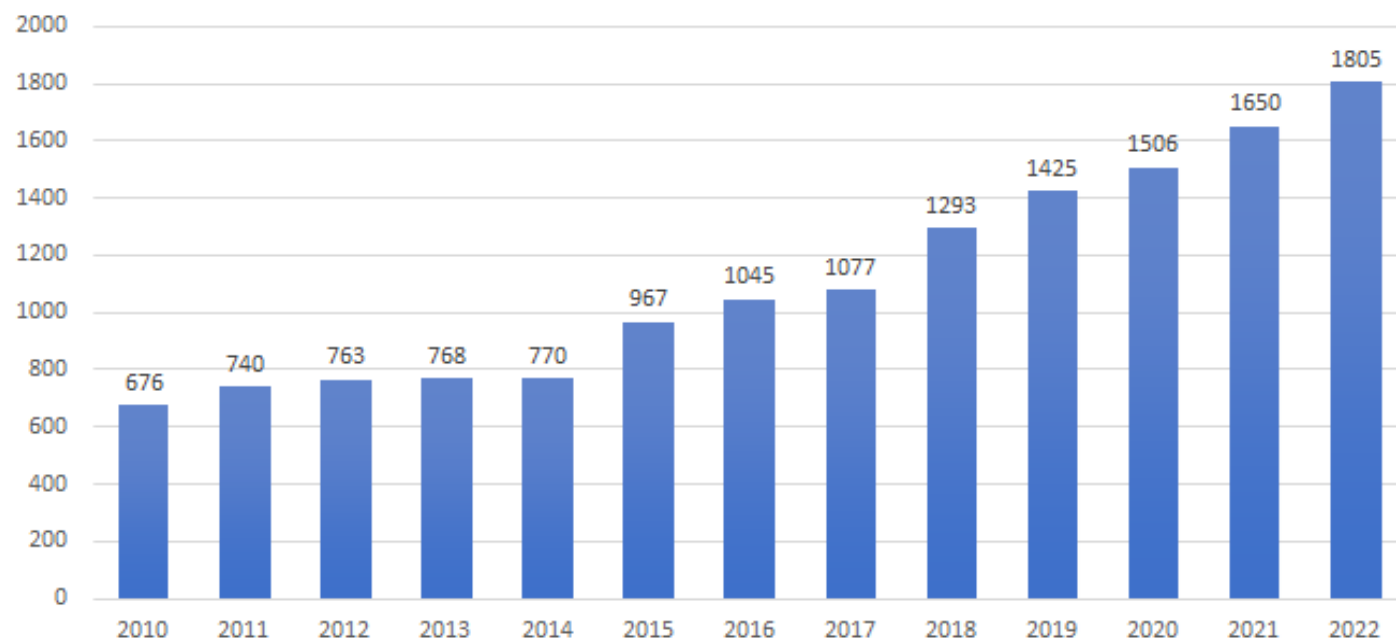
The figure shows the major trend in sales of packaged water in millions of bottles in Tunisia.

This is mainly due to the quality of the tap water produced (by SONEDE: Société Nationale d'Exploitation et de Distribution des Eaux) and the lack of confidence (in several government services, including the quality of tap water).

Several conditions have forced consumers to avoid tap water:

- The quality of tap water depends on the region and the season. You may find that the water is slightly salty or smells of chlorine.
- In some cases, SONEDE carries out repairs to the pipes, which may temporarily lead to the infiltration of impurities, resulting in a change in the colour of the water.
- A large proportion of water distribution pipes are very old, which can lead to a deterioration in the colour and taste of the water.

## Sales of packaged waters in millions of bottles (2010-2022)



**Source:** <http://www.hydrotherapie.tn/portail-de-lhydrotherapie/base-documentaire/lhydrotherapie-en-chiffre/>

- According to the official website of **the Tunisian glass company**, glass bottles are available in a range of formats (see photos below).
- Production is based on company demand.



Standard 90 CL



Safia 90 cl



SOSTEM 45 CL



SOSTEM 90 CL



SICEM 30 CL



SICEM 100 CL

**Source:** <http://www.sotuver.com.tn/produit.php?code=46>

## Feedback from hotels (anonymised)

- Availability of glass water bottles depends on demand. The producer puts the quantity on the market according to demand. Hotels and chic restaurants are the main consumers.
- Many hotels prefer to use plastic bottles for a number of reasons:
  - Glass bottles are very heavy. Hotel workers have difficulty handling them.
  - Difficulties in storing glass bottles during the summer (high season). Storing 24 plastic bottles is equivalent to storing 12 glass bottles.
  - Glass bottles have a maximum volume of 900 ml. Plastic bottles can be as large as 1.5 litres.

## Feedback from distributors (anonymised)

- Many hotels avoid putting glass bottles in rooms for **safety** and **economic reasons**. In fact, breaking a glass bottle costs the hotel 2 dinars.
- The quantity of glass bottles placed on the market is insufficient (low consumer demand compared to plastic bottles) and does not cover all the needs of hotels, restaurants, private individuals, etc.
- It's not just glass bottles that are in short supply. It concerns several other products (coffee, sugar, etc.) .



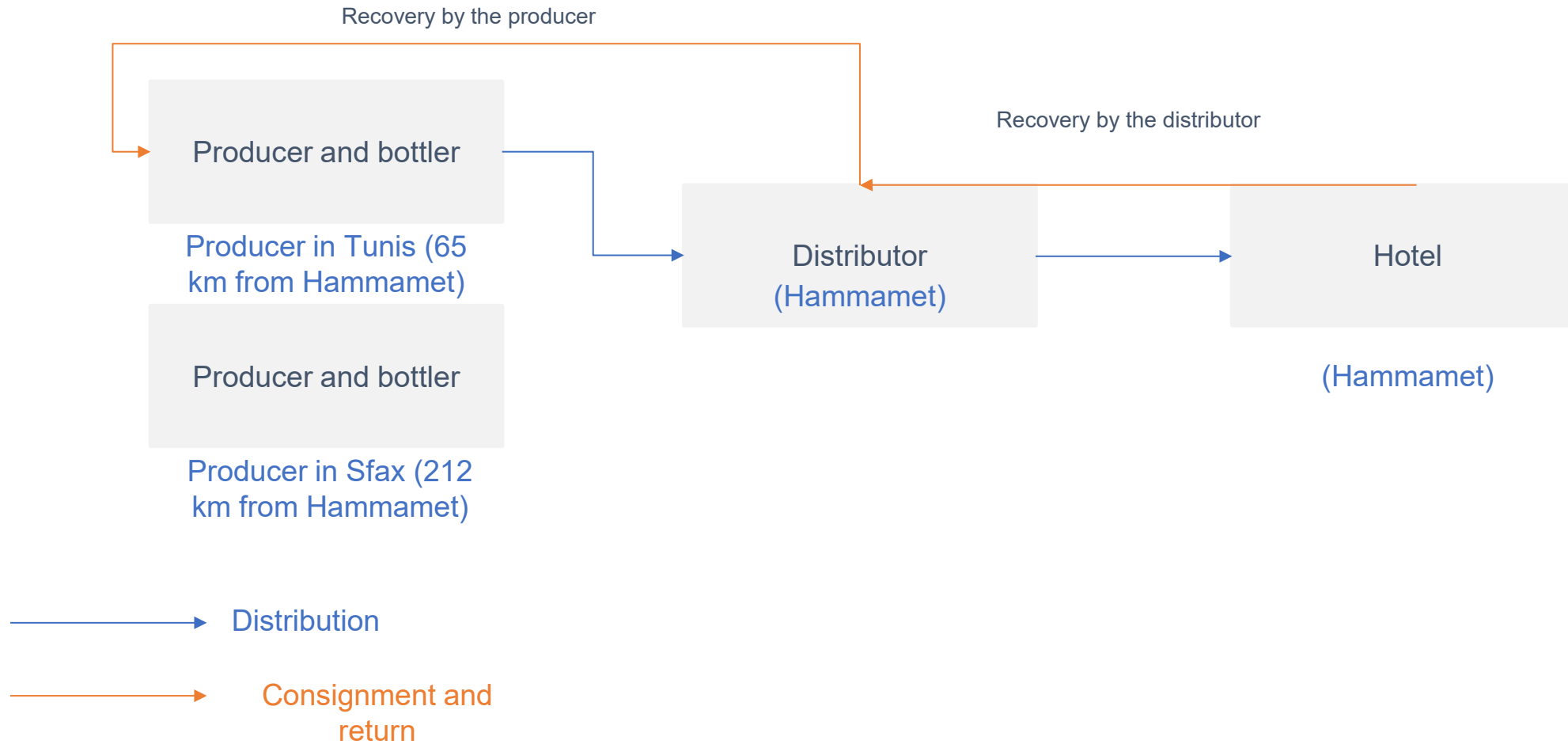
## Feedback from producers (anonymised)

- Supermarkets do not prefer to sell glass bottles. Neither do most hotels:
  - Difficulty for workers to handle
  - Weight (heavy packaging)
  - Risk of breakage
- Integrating glass into the market is a complex and costly process, but despite this, the producer interviewed is in the process of developing this aspect.
- The producer does not want to have a negative impact on the PET sector and the jobs created (social aspect).
- The producer is currently preparing a study to reinforce these aspects before taking any action.
- The vision: to manage plastic (PET) waste properly and boost reuse through glass bottles
- The producer says he is ready to support the project's efforts.

## Feedback from producers (anonymised)

- Production is linked to demand, and their approach is the same as that of any other company.
- The producer works on two products: glass (reusable 30 times) and PET (single use).
- Promoting returnable glass: strengthening the ecological and economic aspects.
- By increasing reuse, it is targeting the sale of products (water), not packaging.

# Glass bottle circuit



## Focus on the environmental benefits of bottle reuse *versus* single use

**The manufacture of glass bottles accounts for between 70 and 80% of the environmental impact of the bottle's life cycle<sup>1</sup>** depending on the producer (production, transport, bottling, packaging, sale and recycling).

Reusing glass bottles therefore makes it possible to limit the impact of their manufacture. However, it is crucial to emphasise that reusing glass bottles only makes sense within a given perimeter and for a given number of bottle cycles:

- The study carried out by Deroche in 2009<sup>2</sup> shows that reusing glass bottles **over a 260km round trip and at least 20 cycles**, compared with recycling, makes it possible to :
  - consume 76% less primary energy,
  - 79% fewer greenhouse gas emissions,
  - and consume 33% less water.
- A more recent study by 2020<sup>3</sup> shows that **over a 200km circuit**, the re-use of glass bottles over **two cycles** has a lower environmental impact than the use of single-use bottles.

The environmental relevance of a reuse model therefore depends on two main factors: the number of bottle rotations and the scope of the project. These 2 parameters need to be taken into account when choosing the bottles and the circuit.

<sup>1</sup> Life Cycle Assessment, Distro, September 2021

<sup>2</sup> Environmental assessment of the "75cl Alsace" returnable glass bottle marketed in Eastern France compared with a single-use glass bottle, by Desroches, April 2009.

<sup>3</sup> Reusing glass bottles in Italy: A life cycle assessment evaluation, Milan, Italy, 2020

## Water filtering fountain

One way of reducing the use of plastic is for staff to fill glass water bottles using a filtering fountain. The model can be used for room bottles or at events.

This approach is not in question in luxury hotels in Tunisia. In fact, running water is not acceptable either to the guests of this type of hotel, or to the hotel management (who do not want to touch the hotel's brand image).

However, the idea is applicable to 2 and 3 star hotels (after an acceptability test).

### Tap water

- The quality of tap water depends on the region and the season. You may find that the water is slightly salty or smells of chlorine.
- In some cases, SONEDE carries out repairs to the pipes, which may temporarily lead to the infiltration of impurities, resulting in a change in the colour of the water.
- A large proportion of water distribution pipes are very old, which can lead to a deterioration in the colour and taste of the water.



[www.arche-de-neo.com](http://www.arche-de-neo.com)

## Steps to take

- Discuss the issue of the lack of glass bottles on the market at College of hotels meetings.
- Reach agreement between the hotels to advertise demand (create a need for producers) in order to increase the quantities allocated to Hammamet.
- A national agreement can also be reached through the Ministry of Tourism.
- Require hotels (particularly 4\* and 5\*) and classified restaurants to use glass bottles, if available on the market.



# THANK YOU!

