

As part of the SwitchMed programme, UNIDO supports industries in the Southern Mediterranean through the transfer of environmental sound technologies (MED TEST II) to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

Tunisia

ZGOLLI FRERES

Food sector

Context

Number of employees:	80 full-time / 300 seasonal
Key products:	Tinned fruit and vegetables (Tomato concentrates, harissa, peeled tomatoes, etc)
Main markets:	International and local
Management standards:	ISO 22000, FDA

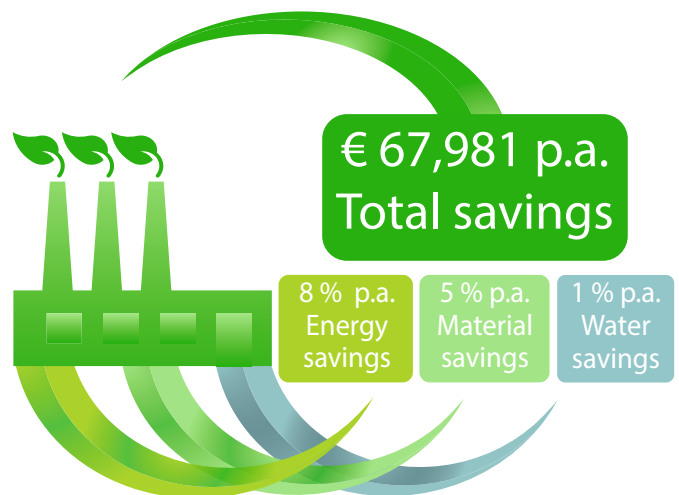
ETABLISSEMENTS ZGOLLI FRERES is a company located in the Cap Bon region of Tunisia. Since its establishment in 1975, the company has focused on the manufacture of canned fruit and vegetables. The company produces 25,680 t of finished products annually. It markets its products on the local market, and exports 10 to 20% of its total production, mainly to Europe, the USA, Canada and Malaysia. At the start of the project, ETS ZGOLLI FRERES was already ISO 22000 and FDA certified.

With the support of the MED TEST II programme, the company intends to introduce the environmental management system in the near future.

“ZGOLLI Frères was honoured to be able to participate in a program which contributes to the protection of the environment and respect for Mother Nature, a major challenge in the 21st century. As such, our objective was to improve our environmental performance all while conserving our resources”

Meriem Zgolli Ep Telmseni
Marketing Manager

Benefits



Graphic: UNIDO

The MED TEST II project has identified total annual savings of EUR 67,981 resulting from energy, water and raw material savings with a total investment of EUR 48,868. The return on investment term is 6 months. The company's management have decided to implement all of the identified measures.

Resource savings will include approximately 5% of the cost of raw materials, 8% of energy costs and 1% of water supply costs, through the implementation of RECP measures.

The environmental savings will comprise a 6% reduction in CO₂ emissions, a 5% reduction in solid waste, and a 1% reduction in liquid waste. The company has launched a full feasibility study to review the recovery of tomato sieving waste in the production of fibres with and without seeds, which are recognized for their stabilising effect in the agri-food processing industry.

In addition, the company's management has demonstrated a strong commitment to ensuring resource efficiency and to maintaining an environmental performance which is consistent with legislation. In effect, the company has put in place an environmental management system based on the ISO 14001 standard in order to consolidate and perpetuate the TEST approach.

Saving opportunities¹

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Washing waste recovery	753			502 t raw materials	-	Total: 368 t CO ₂ 10,000 m ³ waste water
Water and cooking oil savings	6,500	-	-	10,000 m ³ water	-	
Energy consumption optimisation	35,787	55,569	0.6	-	830	
Implementation of Good Practices	5,828	12,412	0.5	-	629	
TOTAL	€ 48,868	€ 67,981	0.7	502 t raw materials 10,000 m³ water	1,459 MWh	

¹ Numbers based on production value from 2015

Washing waste recovery

This task consists of the recovery of approximately 502 t of residue (tomato and herb waste, etc.) at the raw material washing and STEP input stages for reuse as organic slurry in the tomato production fields.

Water and cooking oil savings

(1) This involves modifications to the raw material washing system through the installation of a counter-current flow system to save water and to generate less wastewater. A portion of the wastewater may be recycled for the initial transportation of the tomatoes.

(2) This project consists of the acquisition of a semi-automatic oil filler in the traditional harissa production workshop, which will enable oil losses to be minimised in the ducting and increase worker output.

Energy consumption optimisation

In this area, the following tasks have been identified:

- (1) The optimisation of sterilisation tunnel operations to generate thermal energy savings of 3% in the tunnel;
- (2) The acquisition and the introduction of an energy management system to track energy consumption, which will enable savings of 334 MWh in electrical energy as well as environmental savings of 221 t of CO₂;
- (3) The acquisition and entry into service of a battery of automated capacitors preventing the set power from being exceeded, and hence preventing penalties and ensuring the receipt of subsidies.

(4) The acquisition of a speed controller for the motors of the two sewage plant pumps will enable energy savings of 13 MWh;

(5) Training of company personnel in energy efficiency;

(6) The company has also launched a study to optimise the thermal treatment of products based on their format, using specific sensors to determine a value F.

Implementation of Good Practices

The main tasks involve:

- (1) The optimisation of cooking in the harissa production workshop, which is done in autoclaves; this will enable economies of 7,000 kWh in thermal energy;
- (2) The repair of compressed air leaks in order to minimise CO₂ emissions by 7 t;
- (3) Improvements to the performance of the BELAIR compressor;
- (4) Control of combustion in the boilers;
- (5) Thermal insulation of steam circuit valves and joints (around the boilers and in the production areas) which will result in environmental savings of 91.4 t of CO₂ emissions.

"We have been able to benefit from the know-how of experts who have helped us to enhance and optimise the resources that we use, all while respecting the environment. Certainly, much remains to be done in this area, but the measures that we have taken thanks to this project have simply confirmed our belief that we need to double our efforts in terms of making positive savings"

Meriem Zgolli Ep Telmseni
Marketing Manager

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