



MED TEST Case Study

## FOOD sector — TUNISIA

# Canned food production — Company Cap-Bon (SCAPCB)

### Company overview

Founded more than half a century ago, SCAPCB has a production capacity to process 1,200 tons of fresh tomatoes daily. It is the first exporter of harissa on the international market, including France, Italy, Germany, Belgium, Qatar, Algeria, Libya, etc.

The company was motivated to join the TEST MED programme in order to identify possibilities to increase efficiency in resource management and productivity, reduce the pollution costs and minimize investments and operational costs of the used waters processing plant.

At the beginning of the project, the company already had ISO 9001 and ISO 22000 certificates; in 2009, out of concern for environment, it voluntarily set about to implement a system of environmental management, security, and health on the workplace in accordance with ISO 14001 and B.S OSHAS 18001 standards.

### Benefits

The MED TEST project has identified an annual financial gain of \$US 73,639 in terms of raw materials, semi-finished products, water and steam with a total investment of \$US 98,139. The return on the investment is expected within one year. Most of the identified saving opportunities deal with water conservation, as this aspect is one of the company's main priorities. Part of the identified projects have been implemented throughout 2011; others are planned for the first half of 2012

The costs of water were cut by 44% through the recovery of water and its subsequent reuse in the pre-washing of tomatoes, the optimization of the tomato washing transporter belts, and the installation of a buffer water tank to improve the water distribution system.

The energy costs in terms of steam were reduced by 9% after the implementation of actions designed to reduce steam consumption within tomato pre-heating process.

MED TEST is a UNIDO green industry initiative to promote sustainability and competitiveness in the private sector in Egypt, Morocco and Tunisia. TEST integrated approach includes tools like resource efficiency and cleaner production, environmental management system and accounting, cleaner technology transfer and CSR.

Learn more about TEST approach at [www.unido.org](http://www.unido.org)

MED TEST is sponsored by the Global Environment Facility, the Italian Government and the MedPartnership.



**“The TEST approach supports the hunt for squandering and the efficient use of resources, thereby facilitating financial and environmental gains which reinforce company performance.”**

Sofiane GASTLI, Manager

The implementation of certain projects (especially the recovery of tomato waste) will allow the company to achieve other environmental advances that will in turn facilitate a reduction of pollution costs (BOD<sub>5</sub> and COD) by 80% in comparison with the previous year.

The integrated management system SCAPCB was enforced throughout the implementation of the project. In fact, the company reviewed its quality and environment policy, integrating the aspect of cleaner production (CP). Furthermore, certain procedures and instruction manuals were created, such as the procedure for water reuse. As a part of the implementation of an environmental management system, SCAPCB conducted its own environmental analysis. An environmental programme was undertaken, including all CP measures identified during the implementation of the TEST project. The company plans to achieve the ISO 14001 standard within the second half of 2012.

## Saving opportunities

Measure	Economic key figures			Resource savings per year	
	Savings [USD/yr]	Investment [USD]	PBP [yr]	Water, Chemicals	Energy [MWh]
Reuse of tomato washing water for pre-washing	2 071	2 142	1	50,000 m <sup>3</sup> water	
Optimization of water sprinkling on conveyor belts used for tomato washing	9 800	715	<0.1	16,737 m <sup>3</sup> water	
Pre-heating process	23 000	2 140	<0.1		761
Conception of a buffer water tank	24 000	93 000	4	60,000 m <sup>3</sup> water	
Process water treatment unit	1 768	142	<0.1	3,000 m <sup>3</sup> water	
Valorization of tomato marc	13 000	-	-	900 tons tomatoes	-
<b>TOTAL</b>	<b>73 639</b>	<b>98 139</b>	<b>1.3</b>	<b>-</b>	<b>761</b>

**Reuse of tomato washing water for pre-washing:** This refers to the retrieval of 50,000 m<sup>3</sup> of well water previously discharged, and its reuse for the pre-washing of fresh tomatoes. This has facilitated a 12% reduction in the overall water consumption on the site, which consequently contributes to the reduction of the hydraulic load of the wastewater treatment plant.

**Optimization of water sprinkling on conveyor belts used for tomato washing:** After a modification of the nozzle (company design) used for pre-rinsing and final rinsing of fresh tomatoes, the company could reduce its overall water consumption by 40%. This has also permitted the overall improvement of the quality of finished products in comparison to the previous year.

**Valorization of tomato marc:** This project consists in the sale of 900 tons of waste from tomato refinement to the farmers who use it to enrich animal fodder. Thus a timely waste disposal is facilitated and the cleanliness of the company site is ensured. Moreover, in the future the company will seek to valorize tomato marc for the extraction of lycopene or essential oils for cosmetic usage.

**Pre-heating process:** The company has implemented several measures seeking to reduce thermal energy. These measures include the installation of a continuous control system for steam debit and pressure upstream the block valve, a pressure meter after the hub and the insulation of all non-insulated parts on steam piping (switch latches, valves, etc.). These measures have allowed for a 40% reduction in thermal energy consumed at the pre-heating stage, corresponding to 761 MWh/year.

**Conception of a buffer water tank:** The conception of a water tank with a 300 m<sup>3</sup> capacity has allowed for a more efficient distribution and a more economical use of drilling water, as well as the protection of submerged pumps against water currents. A total 15% reduction of the overall water consumption has been achieved, corresponding to 60,000 m<sup>3</sup>.

**Process water treatment unit:** The company has carried out physiochemical and bacteriological analyses of the wastewater from the regeneration of the resin (reject) at the process water treatment unit. The achieved preliminary results were satisfying. A quantity of 3,000 m<sup>3</sup>/year could be reused for second grade applications and generate gains of 7% relative to the total water consumption.



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