



MED TEST Case Study

## LEATHER sector — TUNISIA

# Tannery industry — Société Moderne des Cuirs et Peaux (SMCP)

### Company overview

SMCP is a leather company founded in Sfax in 1965. The tannery's production is distributed in ovine skins (57%, 525 tons/year), goat skins (10%, 90 tons/year) and bovine skins (33%, 300 tons/year). It produces for both local and international market.

The company joined the MED TEST project in order to identify opportunities for improvement regarding the pollution linked to its activity and to improve its environmental performance, which will in turn help it to conform to regulations and facilitate access of its goods to the international market.

While the company is already in the process of implementing an ISO 9001 standard, its adhesion to MED TEST represents an opportunity to integrate in the near future an Environmental Management System (EMS) in line with ISO 14001 standards.

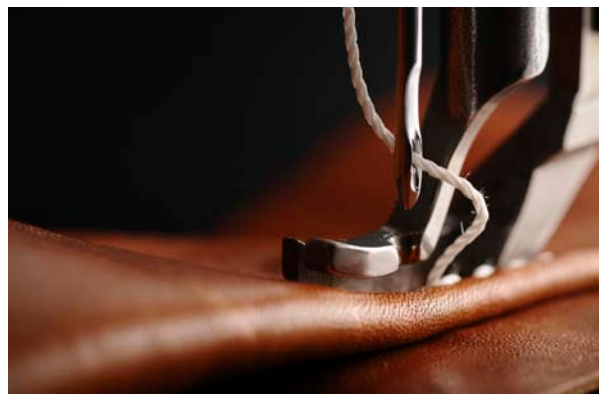
### Benefits

The MED TEST project has identified an opportunity for \$US 97,200 of annual savings in electricity, water and chemicals, against a \$US 287,000 investment with a three-year payback period. The identified cleaner production measures are under implementation.

The gains resulting from the minimization of chemicals use are mainly as a result of substantial reductions in the volume of chrome (up to 77%) as well as of auxiliary products (e.g. salt), which are estimated at 15%.

Water consumption has been reduced by 22% through the installation of new systems for dosing and control water in the drums, hide splitting and recycling of pickle liquors.

Insulating steam and hot water pipes has reduced energy costs. The tannery plans to cut down its thermal energy



**“Opting for finished leather export, SMCP has adopted the TEST approach in order to improve its environmental performance and raise its international market share.”**

Amine BEN ARABE, Director

consumption by 10% in the coming years, when the tannery's industrial area will be connected to the public natural gas network.

As for environmental improvements, the company has focused on a reduction of its wastewater loads and an improvement of the existing water treatment plant, to achieve 80% reduction in COD, corresponding to annual financial gains of \$US 14,000. Taking into account all the measures adopted by the company, substantial environmental gains have been achieved, corresponding to approximately 40% reduction of chlorides discharges.

Parallel to the identification of minimization opportunities, the company has outlined its own environmental policy and begun to look for further areas of potential improvements.

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.

## Saving opportunities

Measure	Economic key figures			Resource savings per year	
	Savings [USD/yr]	Investment [USD]	PBP [yr]	Water, Chemicals	Energy [MWh]
Hide splitting	26 000	72 000	2.5	1,850 m <sup>3</sup> water	-
Water savings, dosing and control in the drums	17 000	35 000	2	5,500 m <sup>3</sup> water	68
Hot water/steam pipes insulation	1 700	5 000	3	-	31
Drumming and salt reduction	17 000	43 000	2.5	72 tons of Cl	-
Reuse of recovered chromium	24 000	107 000	5	24 tons of Cr	-
Recycling of pickle liquors	11 500	25 000	3	2,250 m <sup>3</sup> water	-
<b>TOTAL</b>	<b>97 200</b>	<b>287 000</b>	<b>3</b>		<b>99</b>

**Hide splitting:** This option limits the consumption of chemicals (15 tons/year of chrome) and water (1,850 m<sup>3</sup>/year, i.e. 4% of the global process water), thus minimizing the environmental impact of the site.

**Water savings – dosing and water control in the drums:** In addition to using drums with low water consumption, already installed some years ago, the tannery has proceeded to install an on line metering system for water flow and bath temperature in the drums, which has led to savings in water (10%) and thermal energy (7%).

**Insulation of hot water and steam pipes:** Heat dispersion through the hot water and steam pipes causes a significant loss in thermal energy. Their insulation allows for a reduction of thermal energy consumption (3%), as well as of CO<sub>2</sub> (10 tons).

**Reduced use of salt in skin and leather drumming before soaking:** The tannery's equipment, with a perforated shaking

drum, facilitates the elimination of salt from the salted hides before the soaking stage, which results in the elimination of 120 tons/year of salt, in a 40% reduction of chlorides in wastewater, and in lowering COD and BOD<sub>5</sub> loads.

**Reuse of recovered chromium:** The chromium sulphate recovered after precipitation and filtering can replace 46% of the new chromium with no impact on the quality of finished leather. This technique allows for the reuse 24 tons/year of recovered chromium otherwise discharged as sludge, and for \$US 24,000/year savings, taking into account the additional electricity costs.

**Recycling of pickle liquors:** Pickle liquors can be recycled in the pickling process or reused in the tanning process, allowing for a reduction of the quantities of salt and effluents discharged into the sewer. As a result, the lower demand for chemicals entails a reduction of 45 tons/year of salt; of 5% of the annual water consumption within the production process; and of wastewater pollution loads, especially in sulphur acids, formic acids and COD.



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