

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

# Société Sahélienne de Cuir (SO.SA.CUIR) Leather sector

### Context

Number of employees: 60

Key products: Tanned leather,  
Wet Blue

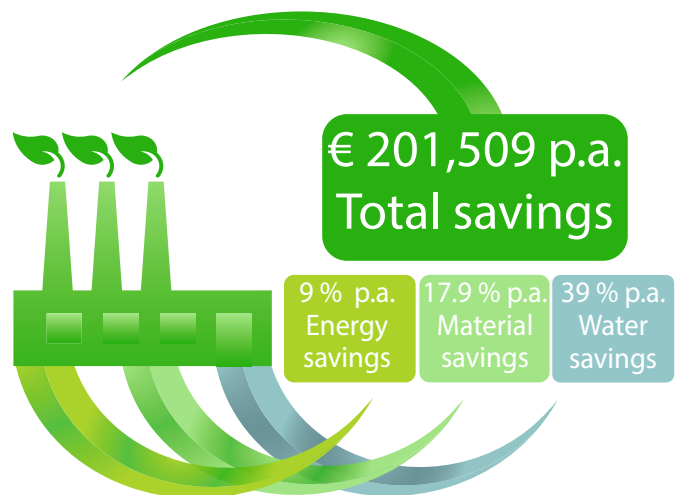
Main markets: 45 % for export

Société Sahélienne de Cuir (SO.SA.CUIR) was established in 1981 and is located south of the town of Sousse, 160 km from Tunis. The company is active in the industrial leather sector, and offers a complete range of products in sheep, goat and cow media; it has a daily production capacity of approximately 1580 finished hides. The company exports part of its products, primarily to Europe, which makes up approximately 45% of its production; the remainder is intended for the Tunisian market.

***“The matching of economic and environmental needs is important to our tanning activities, and participation in the MEDTEST II project intended to help us achieve this objective ”***

Mohamed Ezzeddine Moussa  
Company Manager

### Benefits



Graphic: UNIDO

The MED TEST II project has identified total annual savings of approximately EUR 201,509 (EUR 1 = 2.5 TDN) in energy, water and chemicals, against a total investment of EUR 216,790. The average return on investment term is one year. In effect, 15 improvement projects have been identified, of which 53% have been implemented.

The gains in materials associated with a reduction in the chemical use compared to annual consumption in 2015 are estimated to be approximately 17.9%, and water costs have been minimised by 39%. Energy costs have been reduced by 9%, while the reduction in CO<sub>2</sub> emissions is around 40 t per year. Other environmental benefits have been achieved in terms of reductions in wastewater pollutants, corresponding to approximately 40% of chlorides, 32% of DOB<sub>5</sub> and 33% of COD in the annual flow

## Saving opportunities<sup>1</sup>

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Production process optimisation	171,900	103,987	1.7	3,342 m <sup>3</sup> water 88 t chemical products	-	Total: 39.8 t CO <sub>2</sub>
New technology: Substitution of chrome tanning with wet-white tanning	27,200	48,747	0.6	1,300 m <sup>3</sup> water 87 t chemical materials	-	56 t COD 21 t BOD <sub>5</sub>
Recovery and recycling of raw materials and treated wastewater	33,600	43,342	0.8	56.5 t chemical materials 4,010 m <sup>3</sup> water	-	8,652 m <sup>3</sup> waste water
Energy consumption optimisation	3,270	5,433	0.6	-	102.9	97 t solid waste
<b>TOTAL</b>	<b>€ 216,790</b>	<b>€ 201,509</b>	<b>1.1</b>	<b>231.5 t raw materials 8,652 m<sup>3</sup> water</b>	<b>102.9 MWh</b>	

<sup>1</sup> Numbers based on production value from 2015

### Production process optimisation

The tannery has proceeded with the establishment of a set of measures including the minimisation of chlorides in liquid effluent through a reduction in the salt used for preservation upstream of the production process as a result of the installation of a cage fuller. The integration of green flushing for improved chemical substance penetration during liming operations. In addition, the optimisation of chemical consumption after splitting into strips, and, in particular, the modification of the chromium percentages in the tanning process, as well as a procedural change due to the use of organic acid in order to perform salt-free pickling. Finally, the installation of a dosage and water control system in the fullers, aid may encounter and other divisional count servers for each production line in order to ensure the implementation of careful water consumption monitoring.

### New technology: Substitution of chrome tanning with wet-white tanning

Given that the improvement in productivity is closely linked to the improvement in product quality through the acquisition of new technologies, two important measures have been integrated: the use of a pilot fuller which enables the company to improve and diversify its production in order to attract new customers, as well as the launch of a project to replace chrome tanning with Wet White tanning, which will enable the elimination of chrome and, as a result, a significant reduction in wastewater pollution.

### Recovery and recycling of raw materials and treated wastewater

This measure is focused on the recovery of proteins and fats from the fleshings in strips for recovery and the manufacture of fats and proteins. The hair from the skinning process can be filtered and recovered for reuse, for example in the production of fertiliser, which will reduce waste. On the other hand, the installation and entry into operation of STEP at the new location will enable the recovery of a portion of the purified water for reuse in cleaning operations at the plant and the surrounding area.

### Energy consumption improvement

The main measures include the installation of steam supply and condensate and hot water return lines, and a reduction in the power required, which will result in a reduction in electricity consumption of 9%.

***“Thanks to the MED TEST II project, we have been able to achieve greater control of our production costs, particularly in energy, water and chemicals, all while adopting production techniques which respect the environment. This has enabled us to improve our competitiveness.”***

Morad Moussa  
Administrative and Financial Director

### For more information, contact:



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