



## MED TEST Case Study

# LEATHER sector — TUNISIA

## Tannery industry — Tannerie du Nord Utique (TNU)

### Company overview

Based in the Utique industrial zone, TNU is a Tunisian company operating in the leather sector and producing for both local and international markets. Its total production amounts to 1.385 tons/year, segmented into different kinds of skins: bovine (58%), ovine (27%) and goat (15%).

The company joined the MED TEST project in order to identify opportunities for improvement regarding pollution linked to its activity and introduce Best Available Technologies (BATs) and Best Environmental Practices (BEPs).

Taking advantage of its adhesion to MED TEST, TNU has become familiar with EMS in line with the ISO 14001 standard and plans to implement it in the company.

### Benefits

MED TEST has identified an opportunity for \$US 126,585 of annual savings in electricity, water and chemicals against an investment of \$US 186,150 with a payback period of less than two years. The identified cleaner production measures are under implementation.

Energy costs are expected to be reduced by 70% by switching boiler fuel to gas once the industrial area is connected to the public natural gas network, installing a boiler economizer, a insulating steam and hot water pipes, and demineralizing well water used for boiler feed.

The financial gains resulting from the reduction of chemicals are estimated at 5% for finishing products, 30% for chrome and 10% for auxiliary products such as salt.

Water costs have been cut down by 8% through the installation of a high volume/low pressure pistol in the



**“Prioritising the pollution control principle, TNU has adopted the TEST approach to improve its environmental performance and comply with regulations.”**

Imed MALEK, Manager

finishing process; the use of a trial drum for testing purposes to improve quality and splitting of bovine hides.

Further environmental benefits, especially through drumming before soaking, have been achieved in terms of reduction of wastewater pollution loads, corresponding to about 10% of chlorides and 5% of annual COD flux. These measures have minimized the operating costs of the water treatment plant and allowed for annual reductions of 130,000 kg of COD and 65,000 kg of BOD<sub>5</sub>.

In parallel with the identification of cost minimization opportunities, the company is in the process of elaborating its own environmental policy so as to undertake the implementation of EMS in conformity with the ISO 14001 standard.

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]
Using a test drum to improve quality	10 715	21 150	2	1,500 m <sup>3</sup> water	-
Drumming before soaking and salt reduction	8 570	25 000	3	170 tons salt	-
Hot water/steam generation and distribution system	63 000	64 000	1	-	1,197
Installation of high volume/ low pressure pistol for finishing	2 150	2 500	1	5% finishing chemicals 300 m <sup>3</sup> water	-
Hide splitting	42 150	73 500	1.7	28 tons Cr 2,100 m <sup>3</sup> water	-
<b>TOTAL</b>	<b>126 585</b>	<b>186 150</b>	<b>1.5</b>		<b>1,197</b>

**Using a test drum to improve quality:** The use of the tannery's equipment with a test drum will make it possible to diversify production without squandering raw materials and auxiliary products and renew it by following fashion trends. It will also reduce COD (3%), as well as total water consumption, and most of all facilitate substantial gains in hides.

**Hot water/steam generation and distribution system:** Insulating hot water and steam pipes allows for a reduction of thermal energy consumption by 4%. Installing a boiler economiser, a softener for boiler water and switching fuel to natural gas will bring forth very substantial financial and environmental benefits, adding up to 70% of total annual thermal energy consumption.

**Drumming before soaking and salt reduction:** The installation of a punched drum enables the elimination of salt from the salted hides before the soaking stage, which results in the elimination of 170 tons/year of salt, a 10% reduction of wastewater chlorides and lower COD and BOD<sub>5</sub> loads.

**Hide splitting:** This option limits consumption of chemicals (28 tons/year of chrome) and water (1,800 m<sup>3</sup>/year, i.e. 4% of the global process water), thus minimizing the end-of-pipe environmental impact.

**Installation of a high volume/low pressure pistol for finishing:** About 50-70% of COV emissions are released by pistol finishing machines. Installing this equipment in the finishing stage will bring about reductions in consumption of finishing products (5%), water (300 m<sup>3</sup>) and COD (2 tons) and moreover cut down VOC emissions by about 40%.



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