



Horizon2020



# Regional Meeting to review the used lube oil ESM guidelines and best practices towards sustainable tannery sector in the Mediterranean

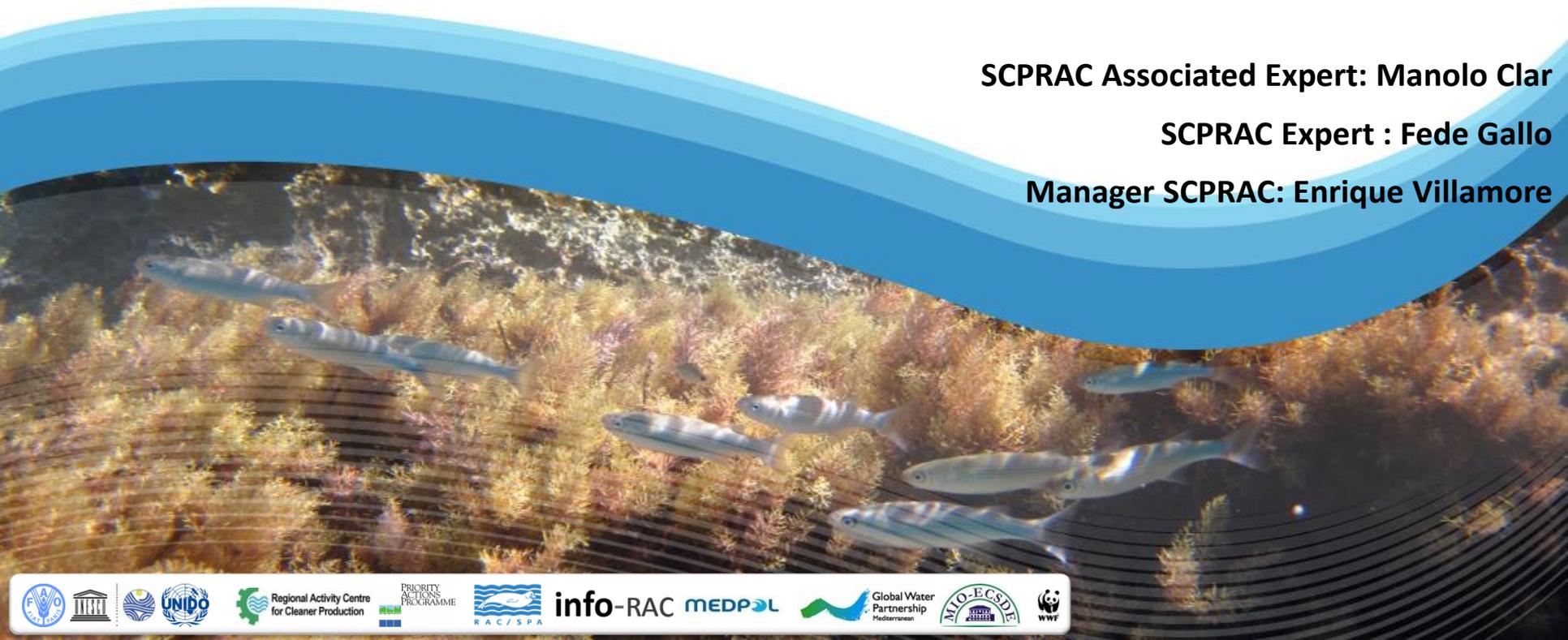
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## Guide towards a more sustainable tannery sector in the Mediterranean

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**1. Introduction**

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# 1. Introduction

Update or extension work of the study developed by the SCPRAC in the year 2000 called “**Pollution prevention opportunities in the Tanning sector industry within the Mediterranean region**”

Providing **updated pollution prevention options** and specifically **priority or immediate actions** in the tanning industry in Mediterranean countries, although it can be applied worldwide

# 1. Introduction

## Objective of the Guide

The final objective of this guide is to provide information to Mediterranean countries to establish a **minimum set of pollution prevention actions**, called in the text as “**the 10 most immediate pollution prevention options**” in the tanning sector that can **lower the environmental and human health impact** of the industry at a cost-effective level for the private sector.

# 1. Introduction

## Contents of the guide

**Chapter 1** provides background information, the scope of the document and information on **alternatives to leather** that can prevent the environmental and human health impact while **promoting local employment** and sustainable economic opportunities.

**Chapter 2** provides a summary of the **associated environmental problems** caused by the tanning sector in the air, water and soil vectors and main generated pollutants.

**Chapter 3** describes a summary of some **available tools** to implement a **sustainability policy** in the tanning sector companies.

# 1. Introduction

## Contents of the guide (cont.)

**Chapter 4** first describes the **10 most cost-effective pollution prevention actions** needed to increase the sector efficiency and lower the environmental and human health impact of the tanning sector, especially in developing countries of the Mediterranean region. Then the chapter provides a summary of **most pollution prevention opportunities** in the tanning sector.

**Chapter 5** shows several **case studies on pollution prevention opportunities**, more sustainable companies and other cases in the tanning sector.

## 2. Chapters of guide

### Chapter 1. 1.3. Prevention of pollution. Alternatives to Leather

Clearly consume **less resources, water, energy and dangerous chemicals for its production per ton** of leather or alternative product along its life cycle.

Two types of alternatives:

- **Plant-based** textiles and leather products and
- **Petroleum-based** textiles and leather.



## 2. Chapters of guide

### Chapter 1. 1.3. Prevention of pollution. Alternatives to Leather (cont.)

**Plant-based** textiles and leather are **renewable, biodegradable and non-toxic;**

Opportunity for **green entrepreneurship**, especially in the increasingly demanding **European market for green products;**

Local renewable resources might be used as materials to produce green alternatives to leather to **lower costs, generate local employment, social benefits, sustainable economic activity and prevent pollution and human health problems.**



## 2. Chapters of guide

### Chapter 1. 1.3. Prevention of pollution. Alternatives to Leather (cont.)

These bio-based materials used as a substitute of leather might be made of:

**cotton, cork, kelp (ocean leather), hemp, jute, palm, palm-tree, seeds, organic cotton, natural latex, fiber of coconut, rind of rice, wood, sap of tree, bamboo, pure 100 % un-bleached and un-dyed natural wool, pineapple fibers, etc.**





# Discussion / questions / ideas / proposals



## 2. Chapters of guide

### Chapter 2. Tanneries and the environment

#### Water consumption

The tanning sector is considered a **large consumer of water and heavy polluting industry**

High consumption of water and increased levels of environmental pollution **deteriorate water quality**, thus decreasing the amounts available for human consumption and other uses, causing in some places **scarcity** of clean water and **high health risk for local population and ecosystems**

Water consumption significantly varies between tanneries and type of hides, but on average, is usually between **25 to 80 m<sup>3</sup> per ton of hides**.

Minimum water use including process and technical water might be as low as **12 to 25 m<sup>3</sup> per ton of hides...**

...so there is an **important room for improvement in the global tanning sector**.

## 2. Chapters of guide

### Chapter 2. Tanneries and the environment

#### Impact on surface and groundwater

All **untreated water effluents** coming from tanneries might cause **significant environmental and human health impact**

Untreated wastewater contains three main types of matter and chemicals that cause great damage:

- **Suspended solids;**
- **Organic matter** and;
- **Chemicals and toxic residues.**

Untreated wastewater discharged into close rivers or water canals eventually reaching the sea, **will deteriorate rapidly the physical, chemical, and biological properties** of the receiving water bodies, including groundwater.

## 2. Chapters of guide

### Chapter 2. Tanneries and the environment

#### Impact on land

Inadequate environmental management at tanneries and especially on the management of wastewater, chemicals and hazardous waste can importantly damage the underlying soil.

Discharging untreated or highly polluted wastewater, chemicals or hazardous waste on land **might greatly disrupt any future use of the land such as for agriculture, recreation or urbanization.**

**Contaminated soil might be unsuitable** for agriculture production, recreation purposes and urbanization for a long period of time **unless expensive decontamination measures** are taken.

Pollutants will slowly percolate in the soil until reaching aquifers and then moving into pumping wells that might be used for water supply or agriculture purposes, **causing the introduction of pollutants in the food chain.**

## 2. Chapters of guide

### Chapter 2. Tanneries and the environment

#### Impact on air

The impact on the air from the tanning activity might come from the production of different gaseous emissions such as:

- Odors
- Hydrogen sulphide, ammonia and sulphur dioxide
- Volatile Organic Compounds (VOCs)
- Dusts and other particulates
- Gases coming from energy source

In order to protect the environment, workforce health and the surrounding area of the plant from odors and harmful emissions, **special attention** should be devoted **at least** to the **emission values of ammonia, hydrogen sulphide, volatile organic compounds (VOCs), total particulate matter, carbon monoxide and nitrogen oxides.**

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### Chapter 2. Tanneries and the environment

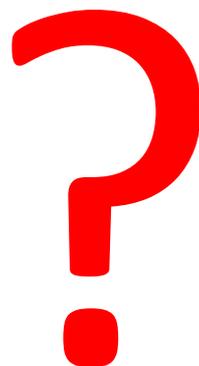
#### Impact on waste management systems

By-products and waste generated during leather production might include **trimmings from raw hides, lime fleshing, lime split and pelt trimmings, chromium shavings, chromium split, chromium leather trimmings, buffing dust, finishing chemicals, sludge from waste water treatment, packaging, salt, organic solvents, residues of process chemicals and auxiliaries, fats from degreasing, finishing sludge, residues from air abatement other than buffing dust, such as activated carbon filters and sludge from wet scrubbers, and residues from waste treatment.**

In order to avoid these by-products and wastes to be disposed in landfills and create harmful odors, severe soil and groundwater contamination and adverse health effects on local population, an **environmentally sound management and recycling of each by-product and waste should be developed** at local level.



# Discussion / questions / ideas / proposals





## 2. Chapters of guide

### Chapter 3. Tools for a more sustainable tannery

#### 3.1 Introduction

This chapter describes a summary of some available tools for tanning sector companies that can be useful to improve its efficiency, company value and profitability, improve the environmental management, meet international environmental standards for export, improve companies' image and reputation and advance on the sustainability and responsibility path.

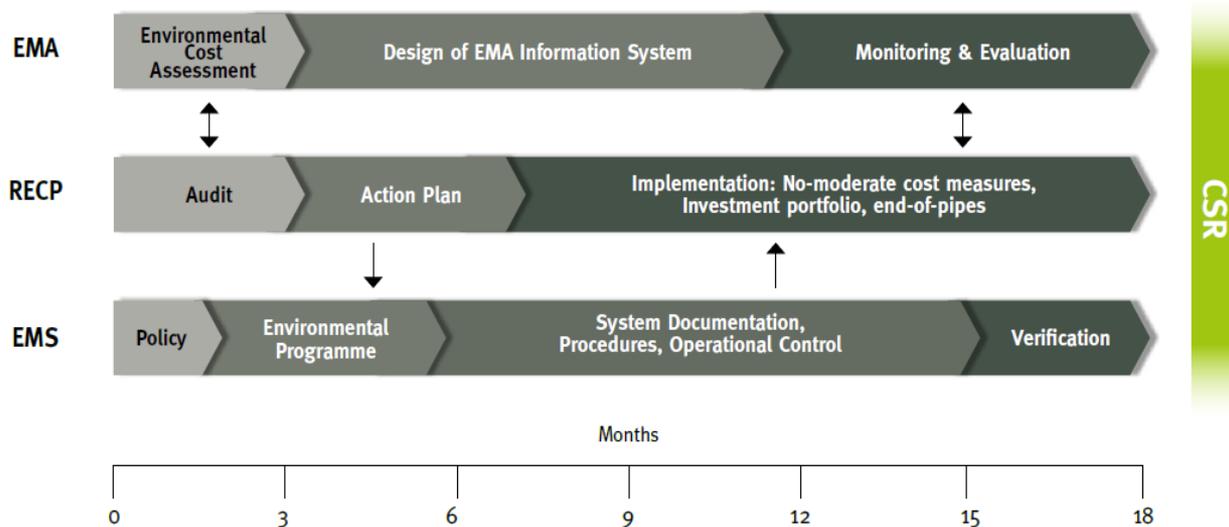
# 2. Chapters of guide

## Chapter 3. Tools for a more sustainable tannery

### 3.2 Transfer of Environmentally Sound Technology (TEST)

The TEST methodology was developed by United Nations Industrial Development Organization (UNIDO) in 2000 **consisting of five management tools at company level with the aim of changing management practices in a holistic manner in order to ensure the sustainable introduction of green practices.**

TEST Implementation Workflow in company



## 2. Chapters of guide

### Chapter 3. Tools for a more sustainable tannery

#### 3.3 Best Available Techniques (BAT) Reference Document for the tanning of hides and skins

The BAT reference document for the tanning of hides and skins forms part of a series presenting **results of an exchange of information** between European Union (EU) Member States, the industries concerned, non-governmental organizations promoting environmental protection and the European Commission, to draw up, review, and where necessary, update BAT reference documents as required by Article 13(1) of the Directive 2010/75/EU of the European Parliament and the Council on industrial emissions (integrated pollution prevention and control).

**The BAT reference document (BREF) on Tanning of Hides and Skins was adopted by the European Commission in 2013.** This document is the result of a review of that BREF. The review commenced in April 2007.

## 2. Chapters of guide

### Chapter 3. Tools for a more sustainable tannery

#### 3.4 The Leather Working Group

The Leather Working Group (LWG) was formed in April 2005 to **promote sustainable and appropriate environmental stewardship practices within the leather industry.**

As part of this, the LWG created a **protocol** to accurately assess the compliance and environmental stewardship practices of leather manufacturers.

The environmental auditing protocol and reporting mechanism **have been developed and refined** during each phase of the project in conjunction **with the brand, tanner and supplier members.**

For more information, please visit the website: [www.leatherworkinggroup.com](http://www.leatherworkinggroup.com)

## 2. Chapters of guide

### Chapter 3. Tools for a more sustainable tannery

#### 3.5 European ecolabel: footwear

The EU Ecolabel helps consumers **identify products and services** that have a **reduced environmental impact** throughout their life cycle, from the extraction of raw material through to production, use and disposal. EU Ecolabel is a **voluntary label promoting environmental excellence** which can be trusted.

One of the European ecolabels is on **footwear products**.

The EU Ecolabel logo on footwear tells consumers the following about footwear products: **Limited water pollution during production, reduction of emissions of volatile organic compounds during production, exclusion of substances harmful for the environment and health, limited residues of metals and formaldehyde in the final product, use of recycled packaging and careful control of different aspects of durability.** In addition, the product also complies by excluding or limiting the use of substances such as **exclusion of certain azo dyes, exclusion of PVC** (except recycled PVC for outsoles), **no arsenic, cadmium and lead in the final product, limited use of formaldehyde and hexavalent chromium**, etc.

## 2. Chapters of guide

### Chapter 3. Tools for a more sustainable tannery

#### 3.6 Corporate Responsibility

Corporate Responsibility (CR) is a business strategy and approach that creates long-term shareholder value by generating opportunities and managing risks deriving from economic, environmental and social developments in an increasingly resource-constrained world. Leading corporate responsibility companies create **long-term shareholder value** by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully **reducing and avoiding sustainability costs and risks** that competitive companies must address.

CR is also the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to **improve their quality of life while preserving the environment.**



# Discussion / questions / ideas / proposals



## 2. Chapters of guide

### Chapter 5. Pollution prevention case studies

5.1 Case Study 1. INESCOP (Spanish Footwear Technology Institute), Elda, Alicante (Spain)

5.2 Case Study 2. Ecozap shoes

5.3 Case Study 3. Shoe “Snipe 100”

5.4 Case Study 4. MED TEST. Société Moderne des Cuirs et Peaux (SMCP) (Tunisia)

5.5 Case Study 5. MED TEST. Tanneries Mégisseries du Maghreb (TMM) (Tunisia)

5.6 Case Study 6. MED TEST. Tannerie du Nord Utique (TNU) (Tunisia)

5.7 Case Study 7. MED TEST. Atef El-Sayed Tannery (Egypt)

5.8 Case Study 8. Waste water treatment plant for tanneries, Igualada, Catalonia (Spain)





# Discussion / questions / ideas / proposals



# Thank you for your attention



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