

LCA, LCC and socio-economic impact on **GOAST-Green Organic Agents** for **Sustainable Tanneries-project**

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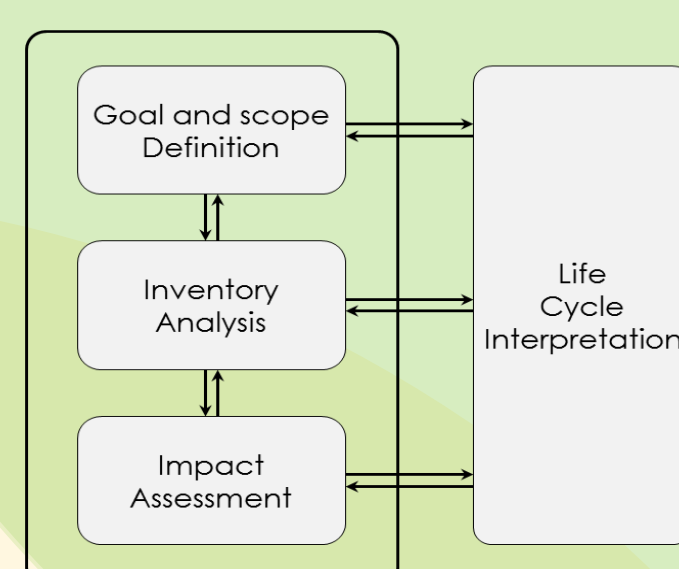
WHAT

LIFE GOAST project is an European project funded by LIFE Programme, which focuses on the implementation of a novel leather tanning technology. Therefore, LIFE GOAST combines the expertise on leather chemical auxiliaries with high level tanning competences and waste-water treatment management to give an innovative and complete approach to leather tanning.

LIFE CYCLE ASSESSMENT (LCA)

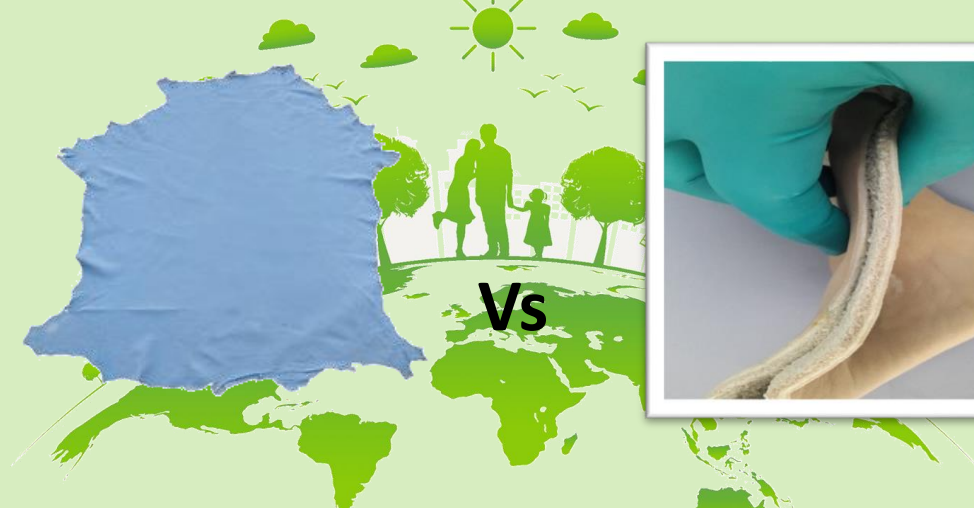
Introduction

LCA is a tool for quantifying the environmental performance of products taking into account the complete life cycle, starting from the production of raw materials to the final disposal of the products, including material recycling if needed [1]. The Life Cycle Perspective is beginning to be adopted more frequently in the environmental management of organizations and in the products and services production processes [2].
An LCA study consists of four main phases:



The aim

The research aims to demonstrate that the removal of chrome from tanning chain allows to reduce its environmental impacts without affecting on leather quality.



Therefore, the LCA involves a first study of LCA of innovative tanning agent by where will analyse the LCA of leather tanned with new tanning agent compared with the LCA of leather chrome-based.

Questionnaire for LCA and LCC

The process of collecting the input data requires the contribution of all the stakeholders involved in the life cycles of leather processing. Suitable data-collection templates have been developed for LCA and LCC analyses.

The first step for the development of the questionnaire has been the definition of the functional unit (1 ton of finished leather) and the relative process steps. For each of them, materials/auxiliaries, energy balances (input and output), energy costs, fixed and variable costs, have been described.

LCA and LCC results will provide an effective indicator to evaluate the sustainability performance of GOAST project

SOCIO ECONOMIC IMPACT

Introduction

The socio-economic impact is a quantitative evaluation of the utility of projects and public policies, i.e. their creation of collective value net of costs. This method allows to study all social, environmental, economic and financial impacts of a project. Therefore, it indicates the positive and negative, direct and indirect, primary and secondary effects produced by an intervention. For instance, about the social impact it means the social effect that each intervention produces on the community or on the other specific entities who benefit from it.

The aim

The Socio Economic action has the objective to build a framework in order to assess the economic sustainability and the socio-economic impacts on the community deriving from the use of the GOAST tanning. The socio-economic analysis involves a survey of the impact on two different stakeholders, companies and workers. To accomplish with this objective, two web-based questionnaire surveys have been designed and administered: one for companies and the other for workers

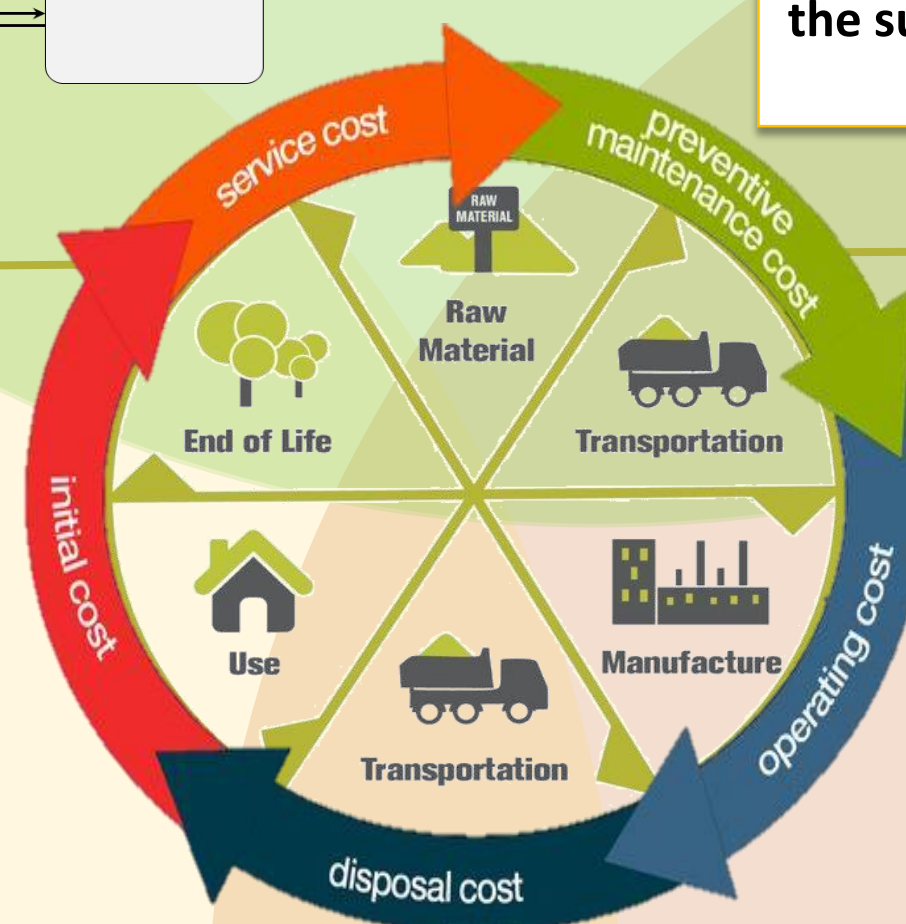
OBJECTIVES OF SOCIO-ECONOMIC IMPACTS

Map the state-of the art in tannery companies of the Arzignano district

The potential increase in competitiveness due to GOAST experimentation

Potential benefits of GOAST experimentation in terms of employment growth

Potential benefits of GOAST experimentation in terms of welfare, health and safety of workers



LIFE CYCLE COSTING (LCC)

Introduction

Life Cycle Costing (LCC) is an economic evaluation that allows to identify all the costs associated with the life cycle of a product and/or service and to determine the cost over its entire life cycle. Moreover, LCC considers the impact of all expected costs, characterizing the life cycle of the investment. Generally, in LCC all cost impact categories, encompassing personnel costs, material costs, equipment costs and service costs are recorded.

The aim

LCC will demonstrate the economic sustainability of the innovative tanning agent in comparison with the chrome-based tanning agents.



The developed data gathering template for LCC has been based on the same steps identified as for the LCA questionnaire and includes production of tanning agent, use of the tanning agent on a specific typology of leather and end of life