



LIFE20 ENV/IT/000759

With the contribution of the LIFE program of the European Union

LIFE I'M-TAN PROJECT

POLISH ONLINE EVENT

25th February 2022



THE IDEA OF THE PROJECT



AN OVERVIEW

Project Location: Italy (Piedmont-Veneto-Tuscany)



Budget:

- Total amount: 2,329,658 Euro
- % EC Co-funding: 55%

Duration: 3 years

- Start: 01/09/2021 - End: 31/08/2024

Project implementers:

- Coordinating beneficiary:
 - Silvateam Spa
- Associated beneficiaries:
 - CRCF Srl
 - Crossing Srl
 - Conceria Incas Spa
 - Consorzio Aquarno Spa



OBJECTIVES & SCOPE

Main Objective:

Reduce the environmental impact in high quality leather production, at sustainable costs.

Environmental objectives:

- 0 % hazardous chemicals
- -25 % COD/BOD in tannery effluents
- -30 % water consumption in leather tanning

Eco-design & circular economy objectives:

- Recovery/recycle of leather scraps to produce **fertilizers**
- Co-products as **additives for animal nutrition**
- Promote replicability in other tanneries in Italy and EU
- LCA/LCC, social LCA (sLCA), EPD, PEF, ECOLABEL certification and BAT/BREF implementation to demonstrate sustainability of the production chain, from tanning extracts to leather production and Waste Water treatment.



ACTIONS



ACTIONS in general

ACTION A – The preparation activities

ACTION B – The concrete actions for the development of the project

ACTION C – The over all evaluations

ACTION D – Dissemination e networking

ACTION E – Project management



ACTIONS, in details

Preparatory ACTION A (All, M1-9) – Identification of leather benchmarks

ACTION B1 (CRCF, M1-26) – Production of Purified Natural Tannins

ACTION B2 (CRS, M1-24) – Production of Chemically Modified Natural Tannins (CPMT)

ACTION B3 (SVT, M7-26) – Production of leather with CMNT, pilot scale

ACTION B4 (ICS, M8-33) – Production of leather with CMNT, industrial scale

ACTION B5 (AQR, M8-33) – Evaluation of wastewater after using the new CMNT

ACTION B6 (SVT, M12-33) – Business plan and EPD, PEF, ECOLABEL certifications

ACTION C (SVT, All, M7-M36) – Technical, socio-economic and environm. analysis (LCA/sLCA/LCC)

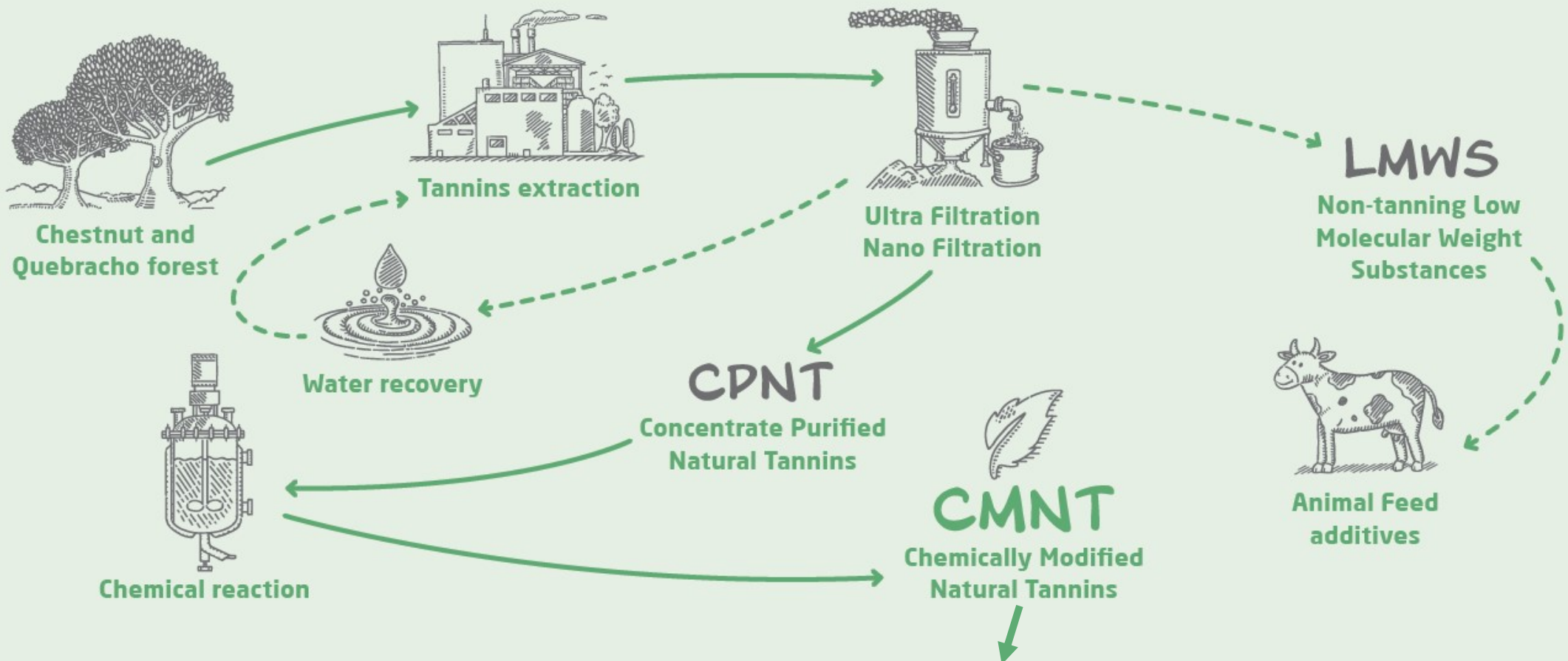
ACTION D (All, M1-36) - Dissemination e networking

ACTION E1 (SVT, All, M1-36) - Project management

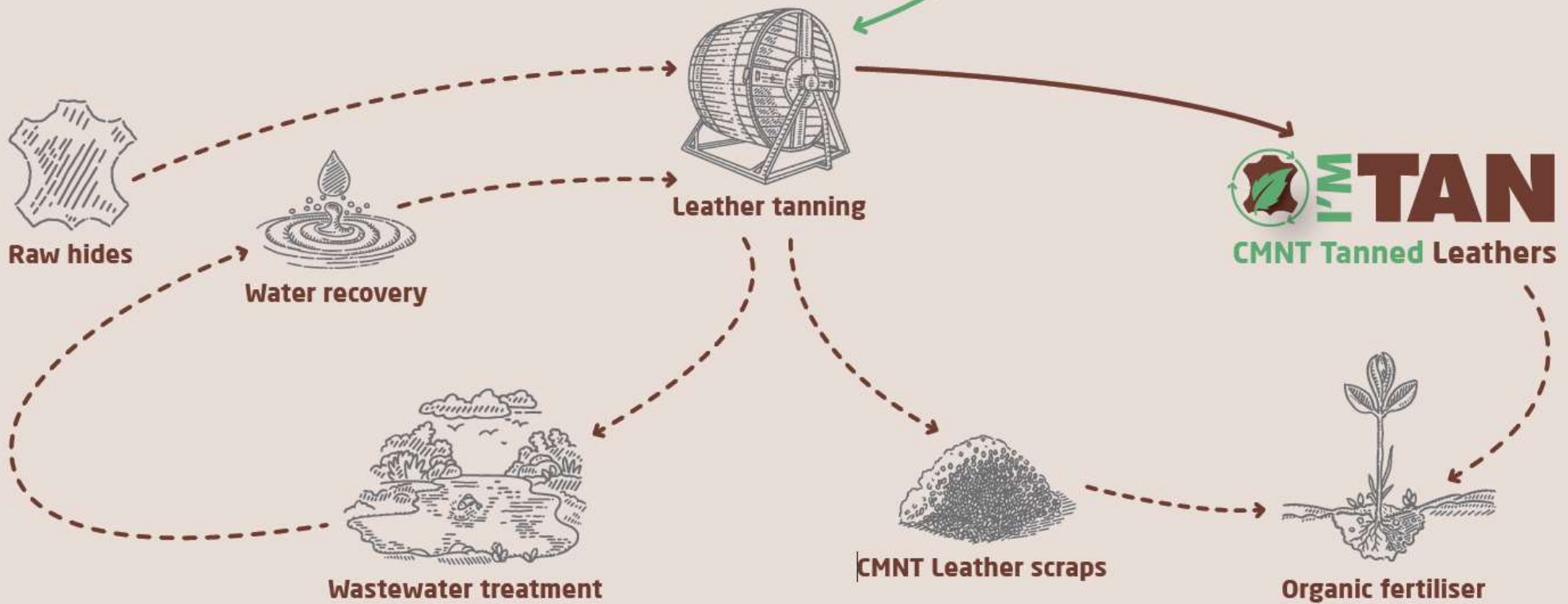


THE INNOVATIVE PROCESS

Overall scheme and key activities



THE INNOVATIVE LEATHERS



THE TEAM

PROJECT PARTNERS

SILVATEAM



OUR KNOWLEDGE AND ACTIONS FOR THE PROJECT



Partner know-how:

- Technologies and chemistry of natural tannin
- Scale up of processes with biomass
- Industrial chemistry

Actions for the project:

- Implementation of the production of Chemically Modified Natural Tannins (CMNT)
 - Purification and modification technologies
 - From the laboratory to the pilot scale
 - Production of CMNT products for SILVATEAM and INCAS



OUR KNOWLEDGE AND ACTIONS FOR THE PROJECT



Partner know-how:

- Optimization of process design for sustainable manufacturing
- Scale up of chemical production and bio-mass recovery/recycle
- Modification of Polymers, Bio polymers

Actions for the project:

- Production of Chemically Modified Natural Tannins (CMNT)
 - Chemical modifications at scale 1-10kg
 - 3 chemical modification protocols
 - Support CRCF and SILVATEAM in scaling-up CMNT production



OUR KNOWLEDGE AND ACTIONS FOR THE PROJECT

SILVA TEAM

(Project Coordinator)

Partner know-how:

- Industrial production of natural tannins (since 1856)
- Many raw materials and technologies in use
- Products for different applications and markets

Actions for the project:

- Production and characterization of Leather articles made with CMNT
 - Tanning trials in the experimental tannery with feedback to CRCF
 - Recipe optimization for INCAS
- Evaluations on Business Plan, REACH, certifications
- Replication and transfer



OUR KNOWLEDGE AND ACTIONS FOR THE PROJECT

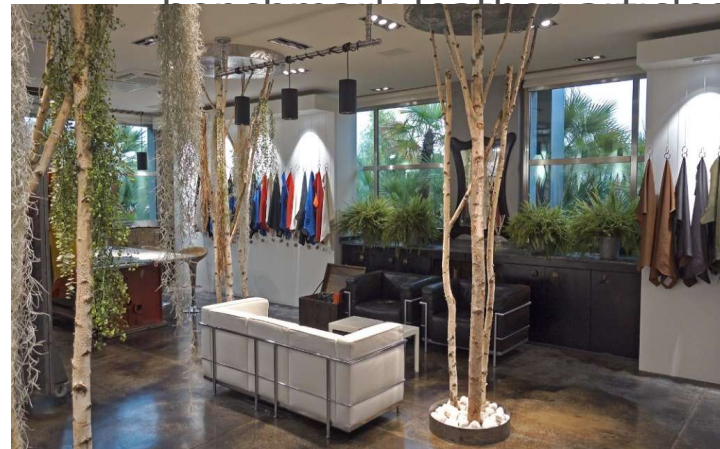


Partner know-how:

- Tannery specialized in vegetable tanning.
- High-quality articles for footwear, handbags and leather goods for 50 years.
- Expert in environmental impact management of its effluents insite.
- Internal laboratory.

Actions for the project:

- Semi-industrial scale use of CMNT tanning agents to produce Leather Articles.
 - The final goal will be to produce and to determine the chemical-physical characteristics of finished leather articles for footwear, handbags, leather goods and collect environmental data for LCA/LCC.
 - The Leather Articles will be compared with



OUR KNOWLEDGE AND ACTIONS FOR THE PROJECT



Partner know-how:

- Wastewater Treatment Plant serving the tanning district of S.Croce sull'Arno (since 1980)
- Managing thermal sludge treatment plant and Chromium Recovery Consortium
- Long experience on tannery waste waters and appropriate treatments
- Qualified analysis laboratory with experience on tanning sewage

Actions for the project:

- Chemical analysis of the tanning baths using CMNT
- Evaluation of the biodegradability of wastewater produced with CMNT
- Comparison between sewage produced with CMNT and traditional methods



EXPECTED RESULTS



EXPECTED OUTPUTS

Benchmark CTP (Chrome), 100% reduction of:

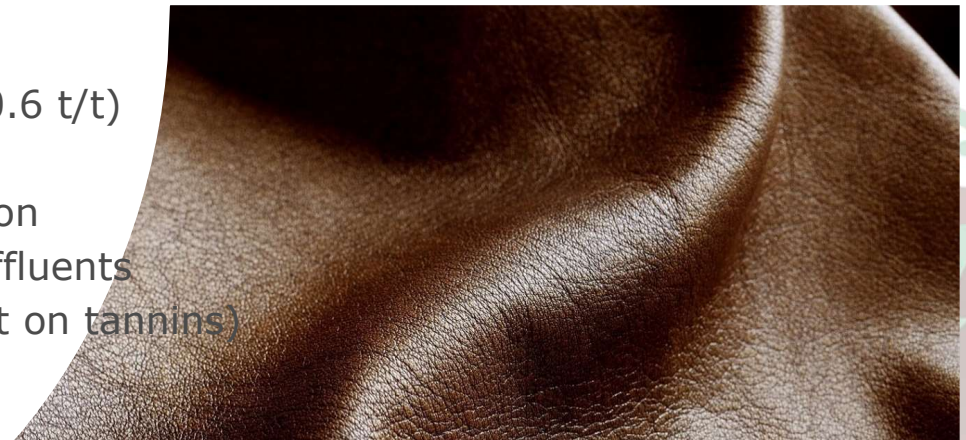
- Chrome tanning salts: 90 kg Cr salts/t of leather
- Chrome-containing leather scraps: 70 kg scraps/t of leather
- Mineral acids (20 kg/t) and sodium chloride (80 kg/t)

Benchmark STP (Syntans), 100% reduction of :

- Aldehydes (50 kg/t), Phenol (70kg/t of leather) & BisPhenols

Benchmark NTP (Naturals):

- 60% reduction of water for natural tannins extraction (0.6 t/t)
- 25% reduction of carbon load from tanning (250kg/t)
- 30% recycle of tanning bath, reducing water consumption
- 25% COD/BOD reduction in wastewater from tannery effluents
- Recovery/reuse of co-products for animal feed (200 kg/t on tannins)
- Recovery/reuse leather scraps for fertilizers (15 kg/t)



OBJECTIVES & SCOPE

OUR GOALS

0%

Chrome salts

0%

Aldehydes
and phenols

-25%

Natural tannins
required for tanning

30%

Recycling of
tanning bath

-60%

Water
consumption

-25%

COD / BOD
in wastewater

80%

Recovery of non-tanning
LMWS for animal feed

100%

Recycle of CMNT
leathers and scraps



REGULATORY IMPLICATIONS

LIFE I'M-TAN is a resource efficiency-related program to implement **EU environmental policy & legislation**

The main **EU regulations** in synergy with the project are:

- Directive 2010/75/EU(IED): regulating **pollutant industrial emissions**;
- Roadmap to a Resource Efficient EU (COM(2011)571): one of the key actions in the **EU Green Deal**;
- Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization, restriction of Chemical substances (**REACH**) and Restricted substances lists (RSLs);
- Resource efficiency/Green and circular economy (COM(2014)398): LIFE I'M-TAN is based on **green and circular economy** principles;
- **Prevention and Recycling of Waste** (COM(2011)13): Life cycle thinking for waste policy focused on environmental impact;
- CD 89/391/EEC together with 90/394/CEE and 98/24/CE: EU rules to protect the **health/safety of workers**



CONTINUATION (REPLICATION, TRANSFER, MARKET UPTAKE)

LIFE I'M-TAN is a close to market, pilot implementation project aiming to introduce high environmentally sustainable innovation into market and society.

Transfer: Partners collaborate to develop a production plant which can easily be assembled in different geographical areas

Replication:



Market uptake: supposing that at 3 years after LIFE CMNT products will uptake 2% of the EU leather market, it will correspond to 12.500 t of CMNT tanned leather/yearly



WE ARE ONLINE

For more informations and for any question please visit our
website



www.life-imtan.eu



A SPECIAL THANKS FROM ALL THE PARTNERS

SILVATEAM



With the contribution of LIFE
program of the European Union



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Stay tuned, see you
soon

