



Leather

–

Example of  
circular economy

Gustavo Gonzalez-Quijano

Secretary General of COTANCE

**Sustainable Textile & Leather Forum  
Budapest, 3 December 2019**

12 Members

Italy

Spain

France

Germany

UK

Austria

Sweden

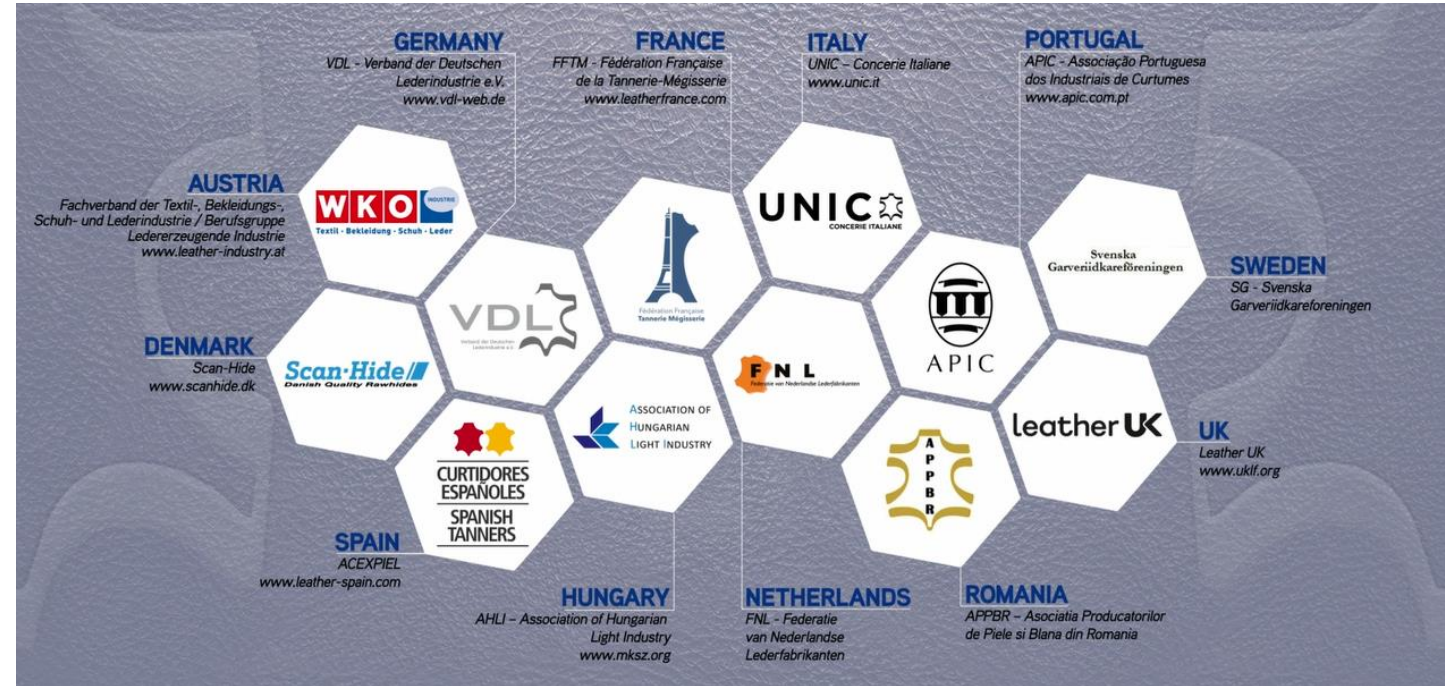
Netherlands

Portugal

Hungary

Romania

Denmark



**COTANCE**  **EUROLEATHER**

**50 YEARS**  
1969-2019 

COTANCE Presidency:

President:

Andreas Kindermann, Wollsdorf (AT)

Vice Presidents:


Rino Mastrotto, Gruppo Mastrotto (IT)

Jean Christophe Muller, Tannerie Haas, (FR)

Thomas Bee, Schafstall (DE)



# The EU Tanning industry - an Economic Overview

 Companies  Employees € Turnover (000 euro)

## COTANCE Members

  
1.480  
  
29.881  
€  
7.144.591

## Others

  
89  
  
3.940  
€  
210.351

## TOTAL EU-28

  
1.569  
  
33.821  
€  
7.354.942

**212 millions m<sup>2</sup>  
of finished leather**  
+ about 12.000  
tons of sole leather

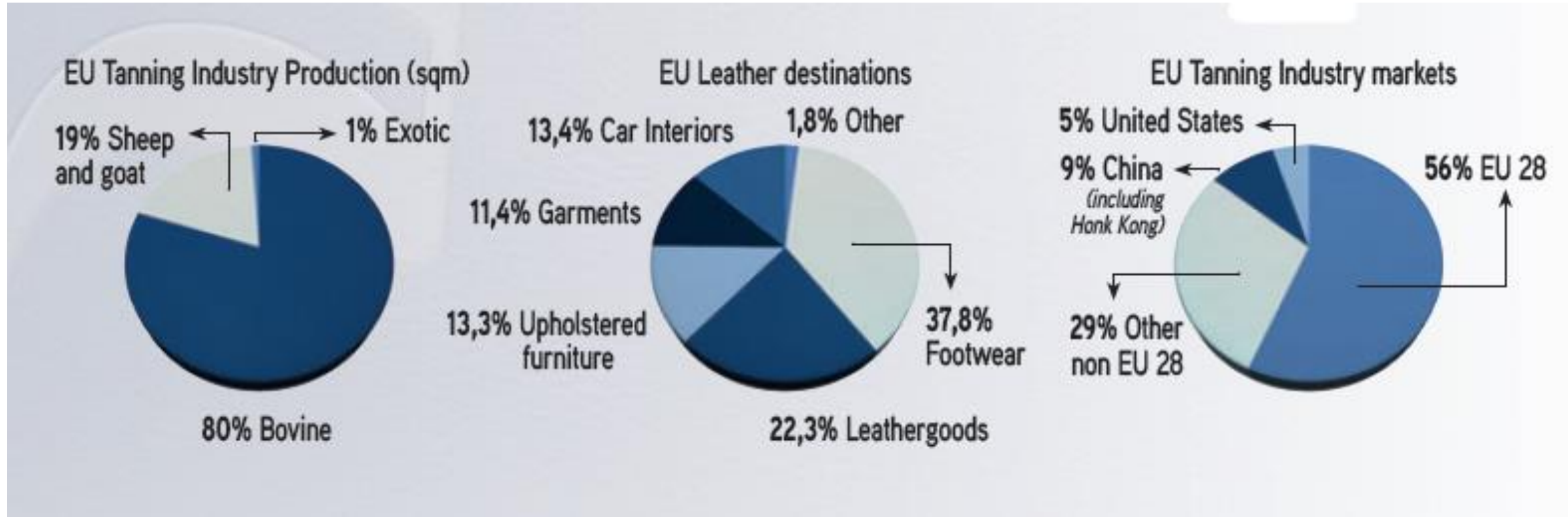
**COTANCE**



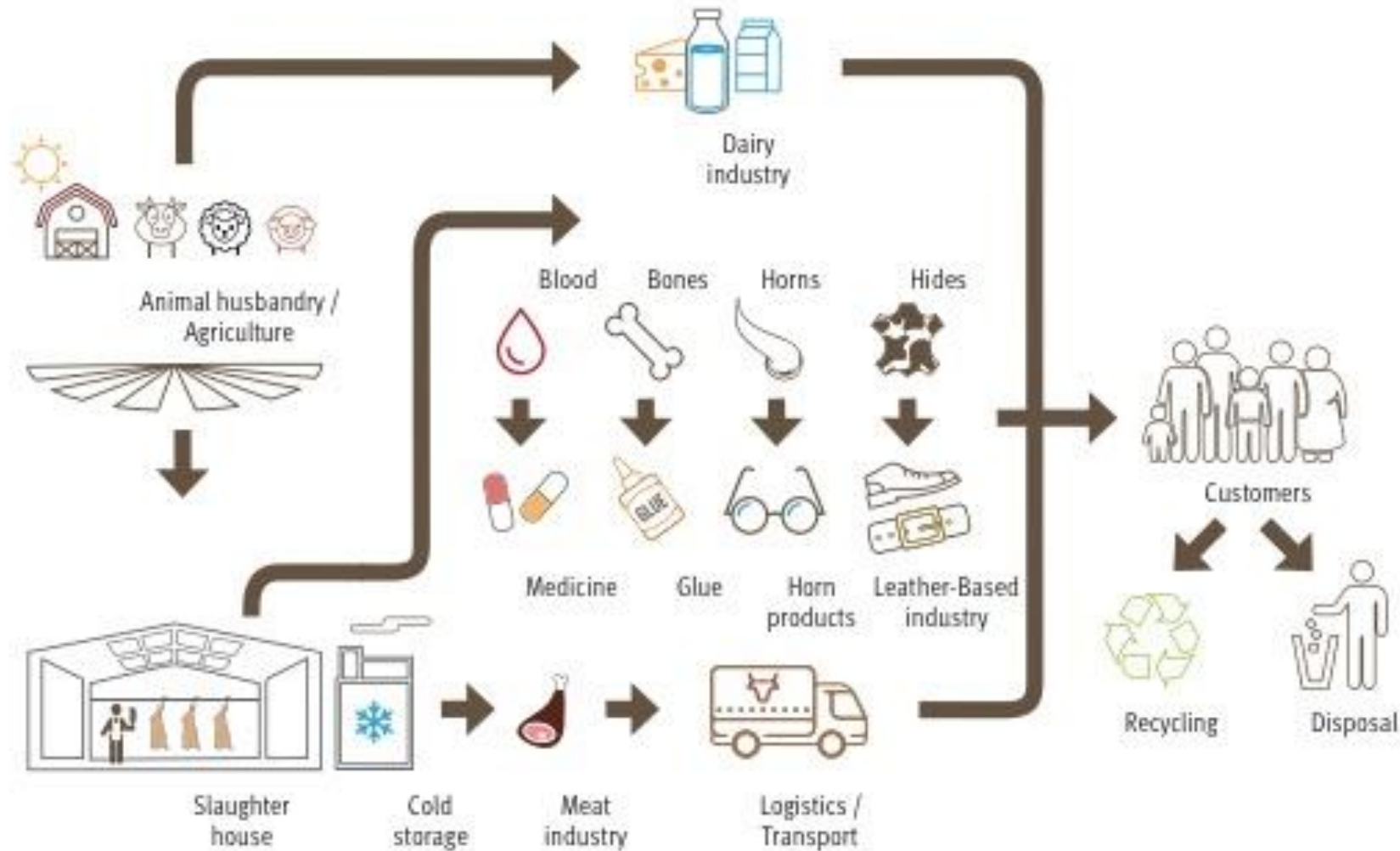
**30% in global value.**  
N°1 worldwide, before  
China, Brazil, India  
and other relevant  
players of the industry



# The EU Tanning Industry – an Economic Overview



# Livestock Products – Co-Products – By-Products



Panel 1: Sources of Tannins

Barks	Woods	Fruits & pods	Leaves	Roots	Plant galls
Wattle (Acacia sp)	Quebracho (Shinopsis sp)	Myrobalam (Terminalia chebula)	Sumac (Rhus sp)	Canaigre (Rumex hyme- nosephalus)	Oak (Quercus sp)
Oak (Quercus sp)	Chestnut (Castanea sp)	Valonea (Quercus Aegilop)	Gambier (Uncaria gambier)	Rhubarb (Rheum rhabar- barum)	Allepo (Quercus infectoria)
Eucalyptus (Eucalyptus sp)	Oak (Quercus sp)	Divi-divi (Caesalpinia coriara)	Dhawa (Anogeissus latifolia)		Tamarix (Tamarix articulata)
Avaram (Cassia auriculata)	Cutch (Acacia catechu)	Algarobilla (Caesalpinia brevifolia)			Pistacia (Pistacia sp)
Babul (Acacia Arabica)	Wandoo (Eucalyptus wandoo)	Tara (Caesalpinia spinosa)			Chinese (Rhus semi- alata)
Willow ( Salix caprea)		Teripod (Caesalpinia digyna)			
Mangrove (Rhizophora sp)		Cashew husk (Anacardium occidentale)			

Based on source: F. Diaz, Stahl, WL, Oct/Nov 2011



# What about other inputs?

## - **Chemicals**

Some are by-products of other activities (fatliquors, degreasing agents, chromium, veg tannins, enzymes, polymers, casein ...)



and...

## - **Water ...**

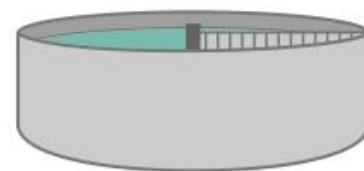


# Leather – from farm to fashion

## LEATHER PROCESSING



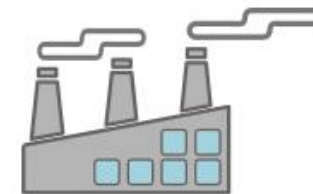
## POLLUTION CONTROL



Water Effluent  
Treatment



Waste Processing  
By-Product



# How to deal with the leftovers?





# Residues from leather-making

## WASTE COMPOSITION

**24.2 %**  
SPETCHES,  
TRIMMING AND SHAVINGS

**11.4 %**  
OTHER TANNING  
SPECIFIC SCRAPS

**7.6 %**  
PACKAGING

**5.8 %**  
OTHERS



**31.7 %**  
SLUDGE

**19.3 %**  
TANNING BATHS

Gelatine, Collagen, tallow, fertilisers, soil conditioners, Leatherfibreboard, and much more

## ***Residues that have a use:***

- In the food & feed sector or in pharmaceuticals and food tech -> *food grade non-tanned splits and shavings*
- As fertilisers or soil conditioners -> *fleshings, shavings, trimmings, cuttings ... or recovered hair and sludge from the beamhouse operations*
- For stiffeners or leatherfibreboard -> *tanned cuttings and trimmings*



plant **biostimulant**



# ... or recycled as Chemicals:

Shavings directly recycled in the tannery:  
Together with biomass, the retanning agent X-Biomer is  
produced:

<https://youtu.be/HGOlvxe6lhQ>

Lanxess-Invite-Heller Leder Pilot Plant



# ... and the effluents?

## CLUSTERS

In Italy:

1. *Aquarno wastewater treatment plant* receives about 3.600.000 m<sup>3</sup> of industrial water emissions per year, with a pipeline send 100.000 tons of *sludge* per year to *Ecoespanso plant* that recover the sludge for the *construction sector*
2. *Cuoidepur wastewater treatment plant* receives about 1.700.000 m<sup>3</sup> of industrial water emissions per year and it recoveries its sludge as fertilizers
3. *Chromium recovery plant*: plant located in the Tuscan industrial cluster receives yearly until 70.000 tons of exhaust chromium from the tanneries and regenerate them to re-use in the cluster
4. *Arzignano Acque del Chiampo* treats the wastewaters of the tanning cluster and *SICIT* valorizes non-tanned trimmings, fleshings and cuttings into bioproteins and fertilisers

In Portugal:

1. *Alcanena's collective wastewater treatment plant and chromium recovery & treatment plant SIRECRO* recycles the chrome in the separately collected effluents of the cluster's tanneries

In Spain:

1. *The Igualada collective wastewater treatment plant* is a modern efficient plant treating the effluents of 28 tanneries.

# ... and what about the end of life of leather?

## Amtrak makes a \$435 luxury bag out of old leather train seats

By Nicole Zane

December 4, 2018 | 2:02pm | Updated



PUP x Amtrak

All aboard! The sustainability train is leaving the station.

## ‘Petit h’ - Hermès

‘Petit h’ is the exceptional Paris atelier of Hermès, founded by Pascale Mussard, where a small, dedicated team of people work on handcrafting unique objects out of scrap materials from Hermès. The designs for these objects are made by a select group of artists and designers from all over the world. It fills us with great pride to be part of this group. Last year, we designed the Mountain Sheep and the Baby Bear.



# Conclusion

- Leather is the result of the recycling of a slaughterhouse leftover
- Tanneries in Europe tend to maximise the use of valuable matter
- Tanning inputs other than hides and skins are often by-products
- Solid and liquid residues from leather production can be valorised
- Leather is a durable material and products designed to last and to be repaired, made with leather are often re-used (second hand)
- Leather of articles at their end of life might, after dismantling, find a new life
- Leather is substantially a circular economy product





Thank you!

*Note: Most graphics extracted from “The Framework for Sustainable Leather Production, Second Edition – UNIDO”*