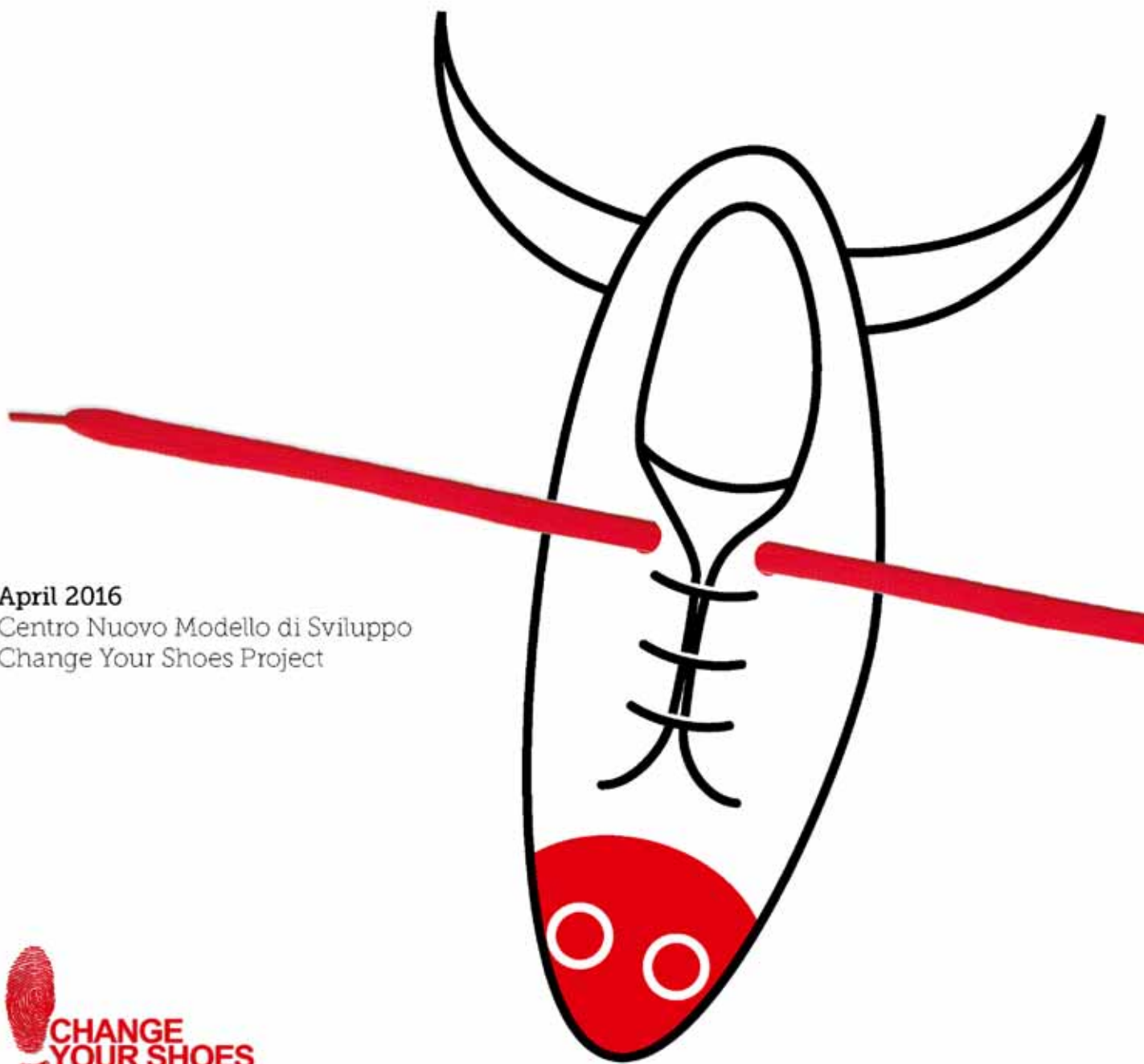


DID YOU KNOW **THERE'S A COW** IN YOUR SHOE?

The labour and the environment
behind a pair **of leather shoes**



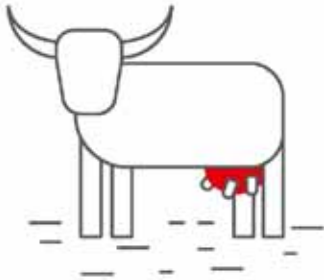
April 2016

Centro Nuovo Modello di Sviluppo
Change Your Shoes Project



YOUR SHOES, FROM THE FIELD TO THE STORE

1



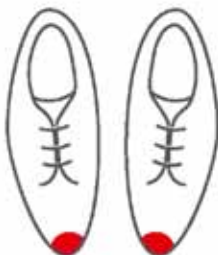
+



+



+



FARMS

The journey of a leather shoe begins on the farm, where cattle are raised. It is these animals that provide the majority of the **skins** produced throughout the world, approximately **66%**. However, the skins of sheep, goats and pigs are also used for industrial purposes.

ABATTOIR

The primary revenue is represented by the meat industry, but shouldn't be underestimated the value of byproducts, particularly the skin.

TANNING
















Raw animal skin is an extremely delicate product. After skinning, the skin is salted and sent to the tanning sector, where it undergoes a lengthy process involving about twenty different operations. At the end of this process, after passing through all the stages of the tanning chain, the skin is finished and is ready to be turned into the components of a pair of shoes.

SHOE MANUFACTURING

The thickest skin is used to manufacture the soles, while the thinner, softer parts provide the uppers and various other components. Luxury brands are very careful about the quality of the skins used and often use specific corporate strategies to monitor the origin of the raw materials and the quality of the processing throughout the production chain.

THERE'S NO LEATHER WITHOUT MEAT

MAIN PRODUCERS OF BEEF

COUNTRY	BEEF	RAW SKIN
 USA	 11,078,000 tons	 834,000 tons
 Brazil	 9,723,000 tons	 832,000 tons
 China	 6,890,000 tons	 760,000 tons
 UE	 7,410,000 tons	 668,000 tons
 India	 4,125,000 tons	 479,000 tons



JBS is a Brazilian multinational specialised in the meat industry and heavily involved in the leather industry.


185,000
employees

\$\$\$\$\$\$\$ annual turnover
\$\$\$\$\$\$\$ **50 billion**
\$

Each day, it slaughters:

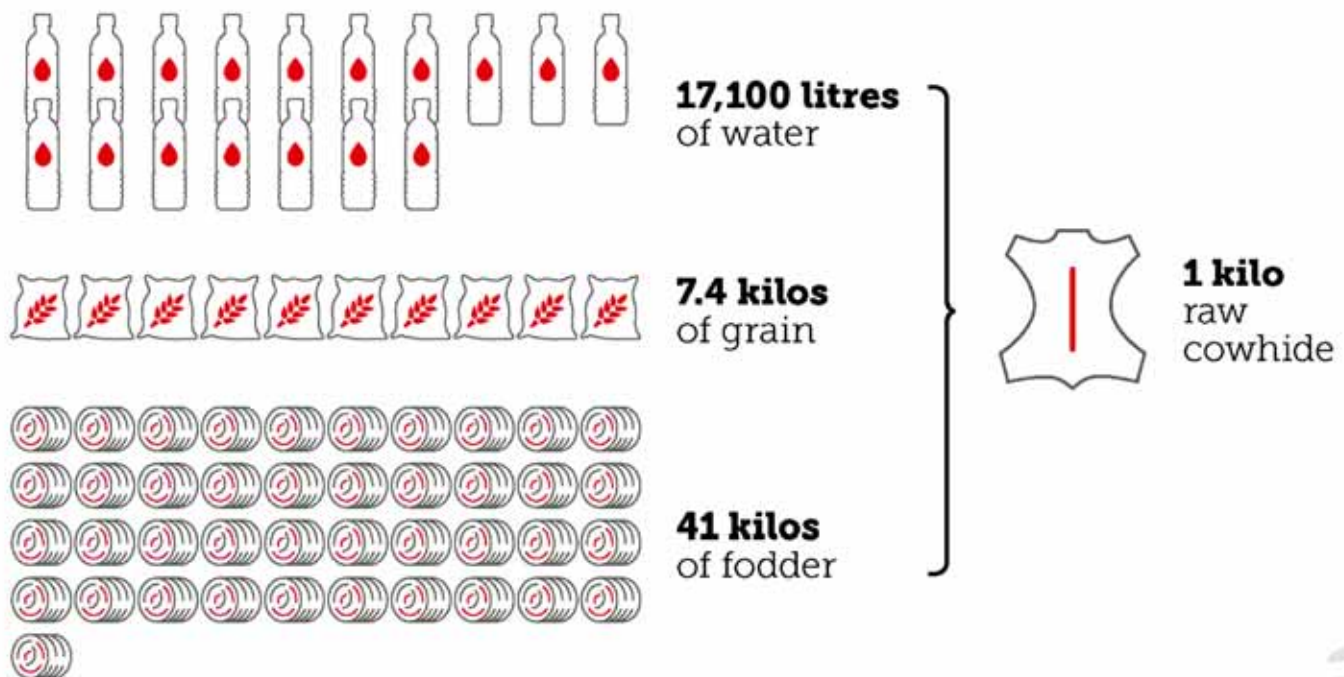
100,000	70,000	25,000
  cattle	 pigs	 lambs
   	  	
   	  	

It owns 26 tanneries throughout the world:
Brazil, Argentina, China, Germany, Italy,
Mexico, South Africa, Vietnam and Uruguay

THE FEED COST OF A RAW SKIN

3

MATERIALS REQUIRED TO PRODUCE ONE KILO OF RAW COWHIDE



On a global scale, more than **40% of annual cereal** production is used **to feed livestock**, and almost **one third of the 14 billion hectares of arable land available** throughout the world is used to obtain food to be given as feed to animals.

Alternatives to meat

One of the characteristics of meat is its high protein content. But it is not the only **protein-rich food**, and we can meet our protein needs using other products. Apart from fish, eggs and dairy products, many vegetables also provide the protein required for a healthy diet, provided that we are careful to eat a varied range of foods including **cereals, legumes, soya and dried fruit**. Limiting our intake of meat, or even eliminating it entirely from our diets, is indicated not only for environmental and food equality reasons, but also to protect our health, because excess meat in our diets can have negative effects on the kidneys and intestines.



THE ADVANCE OF GRAZING LAND INTO THE FOREST

Brazil is home to **211 million head of cattle**: the amount of land required to raise all of these animals is enormous, and attention of producers has been focussing on the Amazon rainforest as a means of providing the necessary hectares.

Only **4.9%** of the deforested land in Brazil **is intended for agriculture**. And while **21% is unused** pending a decision as to how it will be used, **62.2% is used as pasture**. So the largest rainforest on the planet is disappearing so we can raise livestock.



The French association Envol Vert estimates that cattle farming intended for the **production of meat and leather** contributes at a rate of **65% to deforestation** of the Amazon: the pasturelands are located primarily in a fifty-kilometre-wide strip along the main roads passing through the forest.

Forests have an incredibly important role for a number of reasons, not least because they combat climate change as a result of their ability to absorb carbon dioxide. The spread of grazing land at the expense of the forest not only robs us all of valuable forested areas, but also increases production of greenhouse gases.

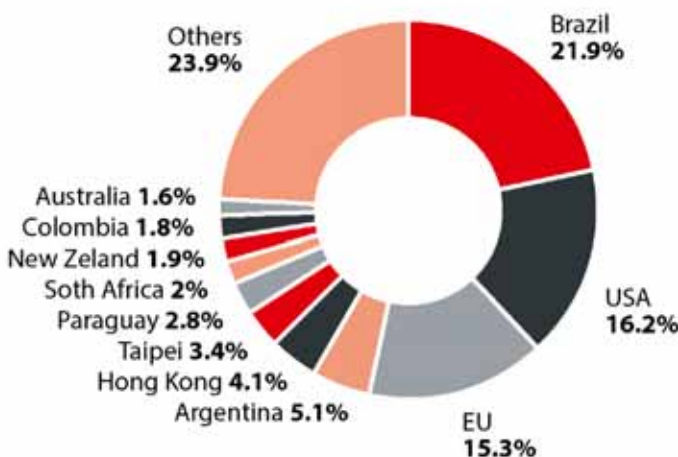
The FAO claims that **animals** contribute **14.5%** to the production of **greenhouse gases**, but the calculation used takes into account only gases associated with animal excrement. If we were to include those linked to the production of grain, the figure would double.

BRAZIL - THE PROMISED LAND FOR TANNING BUSINESSES

Brazil is the second-largest producer of raw leather but does not sell it in that state, preferring instead to process it and sell it in the form of **tanned leather**, of which it is the world's **third-largest producer**.

Brazil is a **major net exporter of both wet blue and finished leather**, mainly to China, the United States and Italy.

LEADING EXPORTERS OF SEMI-PROCESSED COW AND HORSE HIDES BY WEIGHT (in % of total global exports, 2014)



In recent years, the Ministry of Industry and Economic Development has committed substantial financial resources to implementation of the 'Brazilian Leather' programme, promoted by Apex, the export promotion agency. The local tanning industry is developed above all in São Paulo and Rio Grande do Sul.

The Mastrotto story

In Italy, one of the major names in the tanning sector is that of the Mastrotto Family. The founder of the business was Arciso, who had a tannery in Arzignano in 1958.

The three sons then split the business, creating two separate tanning empires. On the one hand there is Rino, who founded Rino Mastrotto Group SpA, and on the other, Bruno and Santo, who created Gruppo Mastrotto SpA.

Greenpeace has included **Gruppo Mastrotto and Rino Mastrotto Group** among the **major purchasers of raw hides** originating from animals farmed in deforested zones.

Rino Mastrotto Group



471 employees in Italy

€€€€€€€ 2013 turnover
€€€€€€€ 280 million
 €€€€€€€€€€€€€€€€€€€€€€€€

Production units



Gruppo Mastrotto



2,000 employees around the World

€€€€€€€ 2013 turnover
€€€€€€€ 450 million
 €€€€€€€€€€€€€€€€€€€€€€€€

Production units

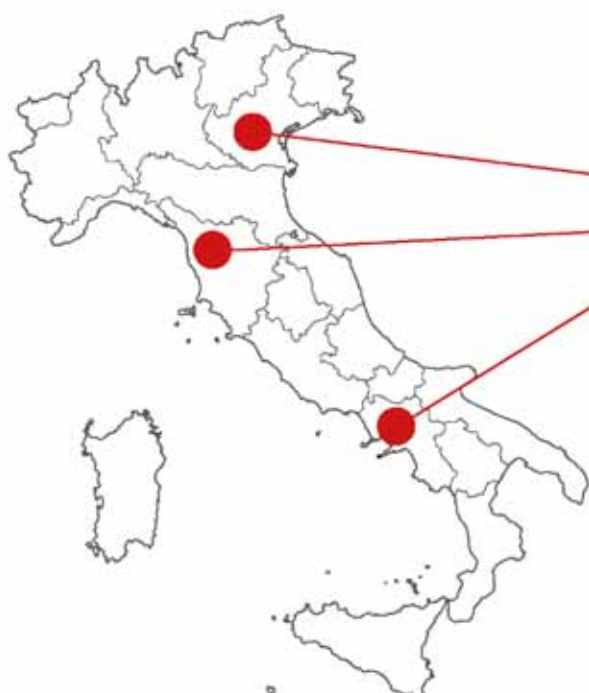


ITALY, HOME TO THE TANNING OF LUXURY SKINS

6

Total production by the Italian tanning industry, for the 2013 year, was **5,25 billion**.

ITALIAN TANNING PRODUCTION BY DESTINATION (in % volume, 2013)



Tanning activity is performed mainly in three districts, which together cover 88.6% of total Italian production: they are **Arzignano** in Veneto, **Santa Croce** in Toscana, **Solofra** in Campania.

The number of people employed in the sector is around 23,000, plus several thousand temporary workers not included in traditional statistics.

The majority of those employed (46%) work in Arzignano, followed by Santa Croce with 35.5% and Solofra with 15%.

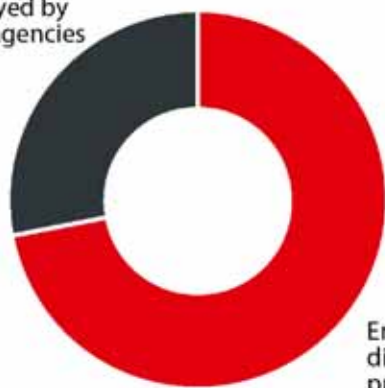
THE TEMP WORKERS BEHIND THE SKINS OF SANTA CROCE

The Santa Croce tanning district is located on both banks of the River Arno, halfway between Pisa and Florence. There are a total of **240 tanneries** in the District of Santa Croce, mostly small-scale businesses. Some are equipped to perform all phases of processing, but these are rare. Most only have the machinery strictly necessary for tanning activities. The district is therefore also home to a large number of other establishments, more than **500** in fact, which undertake specific processing operations: these are the so-called **subsuppliers**, where workplace inspections are rare and where the bulk of the temp workers are employed.



JOBS ON THE BASIS OF METHOD OF HIRING

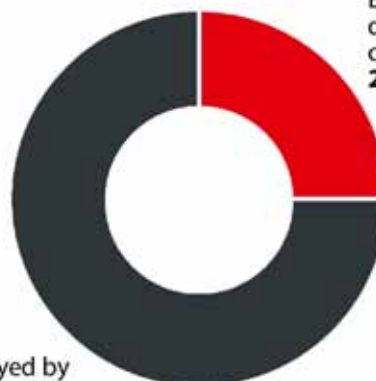
Employed by temp agencies
28%



Employed directly by producer companies
72%

THE NEW JOBS BY TYPE IN 2014 IN SIX MUNICIPALITIES OF THE TANNING DISTRICT

Employed directly by producer companies
25%



Employed by temp agencies
75%

Numbers employed in the district in **2014** represent **12,700 individuals**, 9,247 (72%) of whom are employed directly by producer companies and 3,451 (28%) of whom are employed by temp agencies.

Temp agencies are intermediaries that send workers for the period strictly necessary according to the requirements of the requesting company. In Italy, temp work was introduced between 1999 (Treu Law) and 2003 (Biagi Law). In 2015, **Poletti's Decree** extended the possibilities for application.

THE IMMIGRANTS DOING THE LEAST ATTRACTIVE JOBS

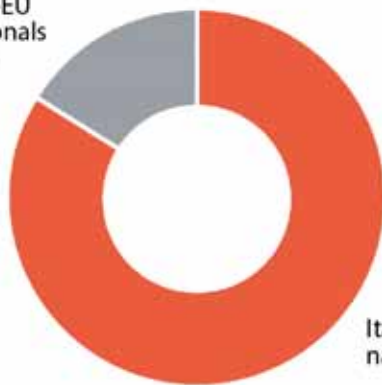
The tanning sector is home to large numbers of immigrants, because the work involved is very difficult and highly unpleasant. In Santa Croce, the first sector where immigrants found work was pre-tanning, and in particular **scraping (fleshing) and splitting**, which involves handling heavy, dirty skins, a **task with little attraction for Italians**.



Previously, the toughest jobs were performed by Southern Italian workers, but many of those individuals then started their own businesses as subcontractors and their jobs were **taken over by the Senegalese**. Bosses often prefer Senegalese workers over Italian. Senegalese workers are available to do overtime and to work on Saturdays, they do not complain. It is the result of specific dynamics of exploitation and blackmail.

WORKERS PERMANENTLY EMPLOYED IN THE TANNING DISTRICT BY NATIONALITY

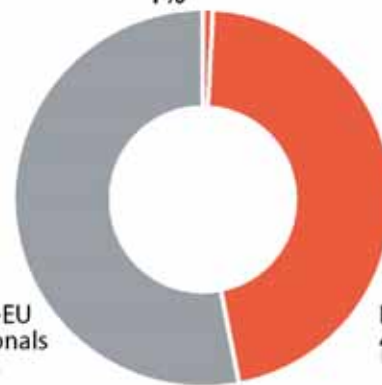
Non-EU nationals
16%



Italians and EU nationals
84%

TEMP CONTRACTS BY NATIONALITY CONCLUDED IN 2014 IN SIX MUNICIPALITIES OF THE TANNING DISTRICT

EU nationals
1%



Non-EU nationals
53%

Italians
46%

Sylla's story: the chains of temping

Sylla was born in Senegal in 1979 and has worked in tannery sector since September 2005. He has always worked as a splitter for the same firm, but has never had a permanent contract. The most he has been offered is contracts for one month or five days. The owner calls him 'my guy' and demands that he works only for him. The temp agency supports the owner: when Sylla finishes a contract, it does not offer to find him work with other firms, it only calls him when 'his' firm needs him. This is how the temp agencies, the very symbol of flexibility, are transforming workers into the private property of the firms in the sector.



WHAT A LOT OF UNREGISTERED WORKERS YOU HAVE, MR WOLF!

Despite the vast range of hiring methods available under the law, the use of undeclared labour continues to persist in the Santa Croce District. This is the most serious form of infringement of workers' rights, because it deprives them of protection against accidents and of pension and retirement entitlements.

The task of verifying that the law in relation to employment relationships is being enforced appropriately falls to the local authorities known as the **Provincial Labour Directorates**, but in Pisa there are only **19 inspectors** for the entire province, of whom only **11 are employed full time**.

SITUATIONS INSPECTED FROM 1 JANUARY 2011 TO 31 DECEMBER 2014 IN SANTA CROCE



The **possible forms of illegal employment** include hiring workers under contracts for limited hours, or part-time, and then making them work full-time.

Half a day under contract and half a day illegally: it is difficult for anyone to say no. «Work is like that now, if you don't agree they won't call you any more». A company might hire a worker for the first time through an agency, then, if it is happy with the work, it will contact the worker a second time directly, without any intermediary, and employ that worker without any contract or insurance cover.

**11 full-time
8 part-time
inspectors**
for the entire
province of Pisa



AN ODOUR OF ROTTEN EGGS... AND DEATH

10

One of the most serious risks in tanneries is **poisoning by hydrogen sulphide**, also known as hydro sulphuric acid (H₂S), a colourless, extremely poisonous gas with a sharp odour of rotten eggs, which **can cause death if inhaled**. Hydrogen sulphide is formed from sulphur compounds, which are used in the various phases of the tanning process.

To avoid situations where workers breathe in poisonous gases, **machines must be fitted with extraction systems**. But the reality is that even where these systems are fitted, they are not always on when they should be.

THE EXTRACTION SYSTEM FOR A TANNING DRUM



June 2004: the death of Thiam Mamadou Lamine in Santa Croce

He was aged 35 years and was Senegalese. It was his first day working as a temp: he died after being assailed by a cloud of hydrogen sulphide released by a drum that he had just opened to check the skins. Thiam had already worked in tanneries, including the one where he lost his life. And that time, after having opened the lid of the drum, his breath was cut off as if he was in a gas chamber. First aid was provided immediately, but attempts to save him were in vain. In Senegal, he left behind a wife and two children, one of whom he had not yet even met.

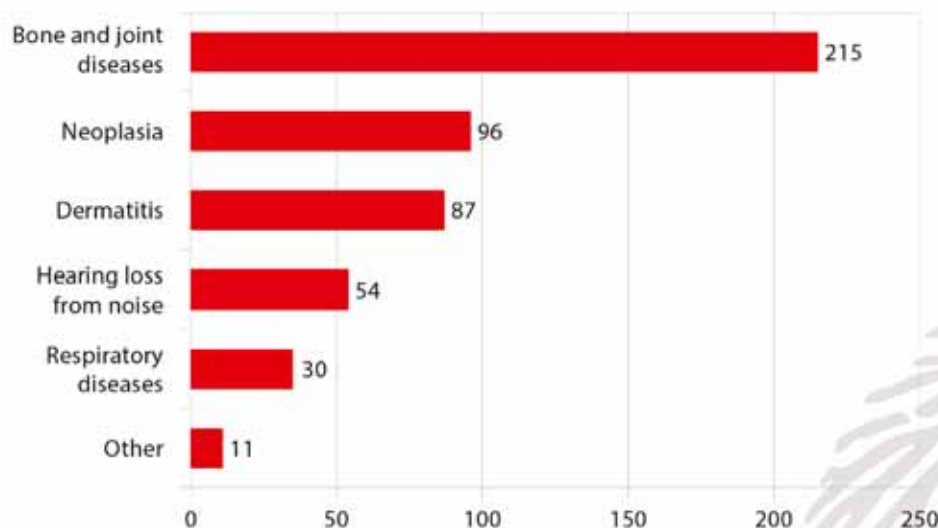
THE RISKS FOR WORKERS

In addition to accidents, tanneries also have to deal with the problem of occupational diseases, those issues that develop over time, through contact with hazardous substances or long periods spent in unhealthy atmospheres. There have been **493 cases** of **occupational diseases** recognised in **Santa Croce between 1997 and 2014**, subdivisible into **five major groups**.

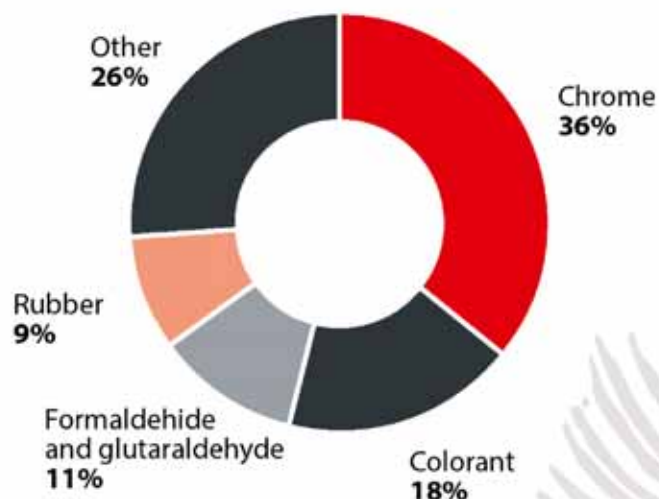
Musculoskeletal disorders are the most numerous group, representing **44%** of all occupational diseases. Second rank is taken by **cancers** with an incidence of **19%**. The organs most frequently affected are the nasal passages and the bladder.

Third rank in terms of occupational illnesses is taken by contact dermatitis resulting from sensitivity developed towards one or more of the **300 chemical substances used** in the animal skin processing cycle.

DISTRIBUTION OF OCCUPATIONAL DISEASES (Tuscan tanning sector 1997-2014)

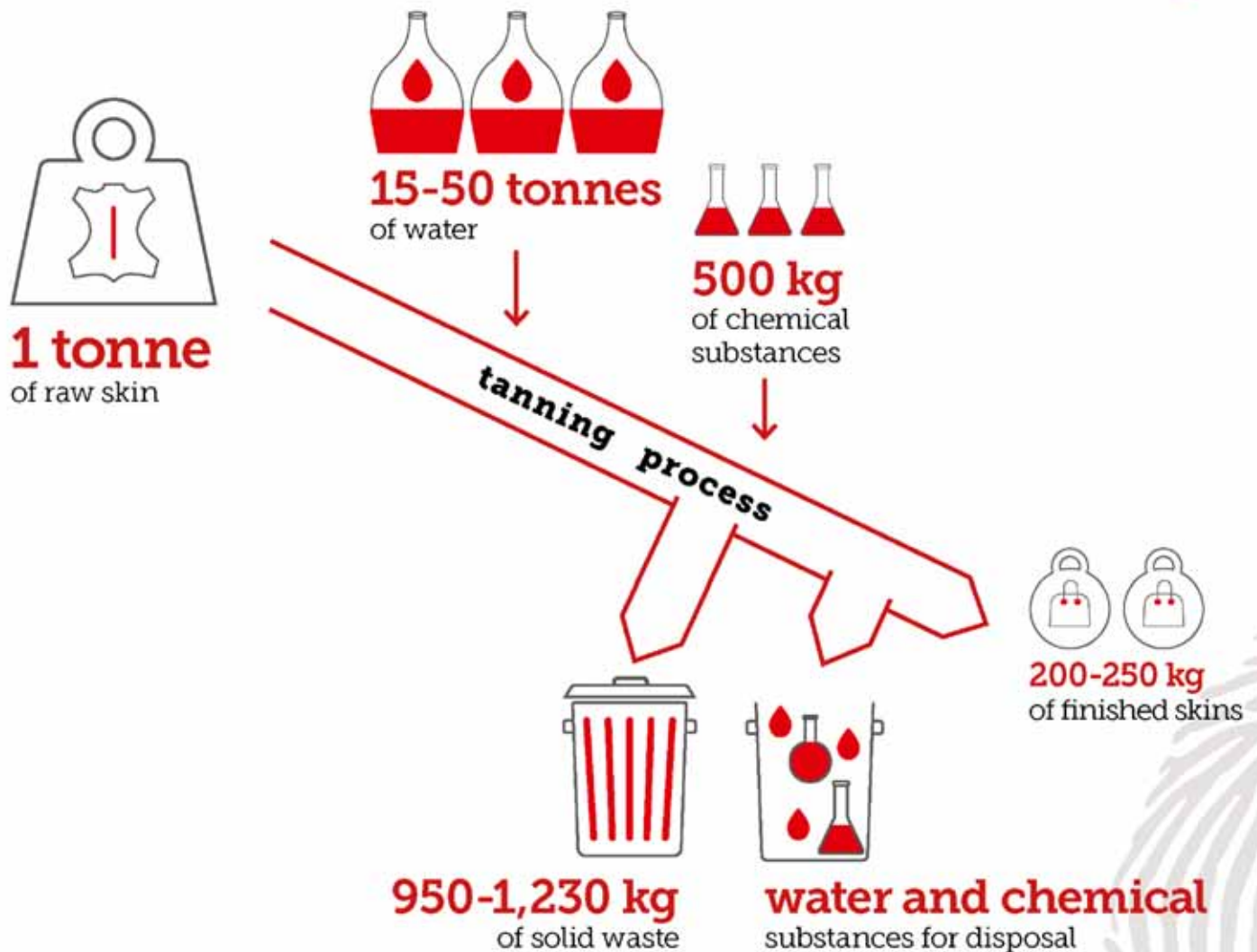


CONTACT DERMATITIS ON THE BASIS OF THE TRIGGERING SUBSTANCE (Tuscan tanning sector)



A SECTOR WITH CONSIDERABLE ENVIRONMENTAL IMPACT

12



The tanning industry has a major impact on the environment, not only because of the effects generated by the animals providing the skins, but also because of the vast consumption of water and the large quantity of biological and chemical wastes produced during the industrial phase.

Tanneries in Santa Croce **consume** approximately **6 million cubic metres of water each year**, taken mainly from the groundwater. For each tonne of rawhide, the industry obtains 200-250 kg of skins tanned using chromium, which require a total of 15-50 tonnes of water, 500 kg of chemical substances and **9.3-42 GJ of energy**.

IT'S ALL ABOUT HOW YOU CLEAN UP

13



SOLID WASTES

Tanneries produce biological solid waste that is sent for treatment recycling to specialized enterprises. Many other substances are sent with dirty waters to purification plants where sludges are extracted and sent for final treatment to specialized enterprises.



DIRTY WATER

The treatment systems are designed to clean the water of chemical and organic pollutants, before releasing it into natural watercourses. Although the district has a population of only 110,000, its actual **pollutant load** to be disposed of is comparable to that of a city of more than three million inhabitants.

Between 2006 and 2013 a purification plant of Santa Croce discharged illegally into the river Arno 5 million cubic metres of liquid waste. Companies involved saved 4,350,000 euros on processing costs and disposal of sludges.



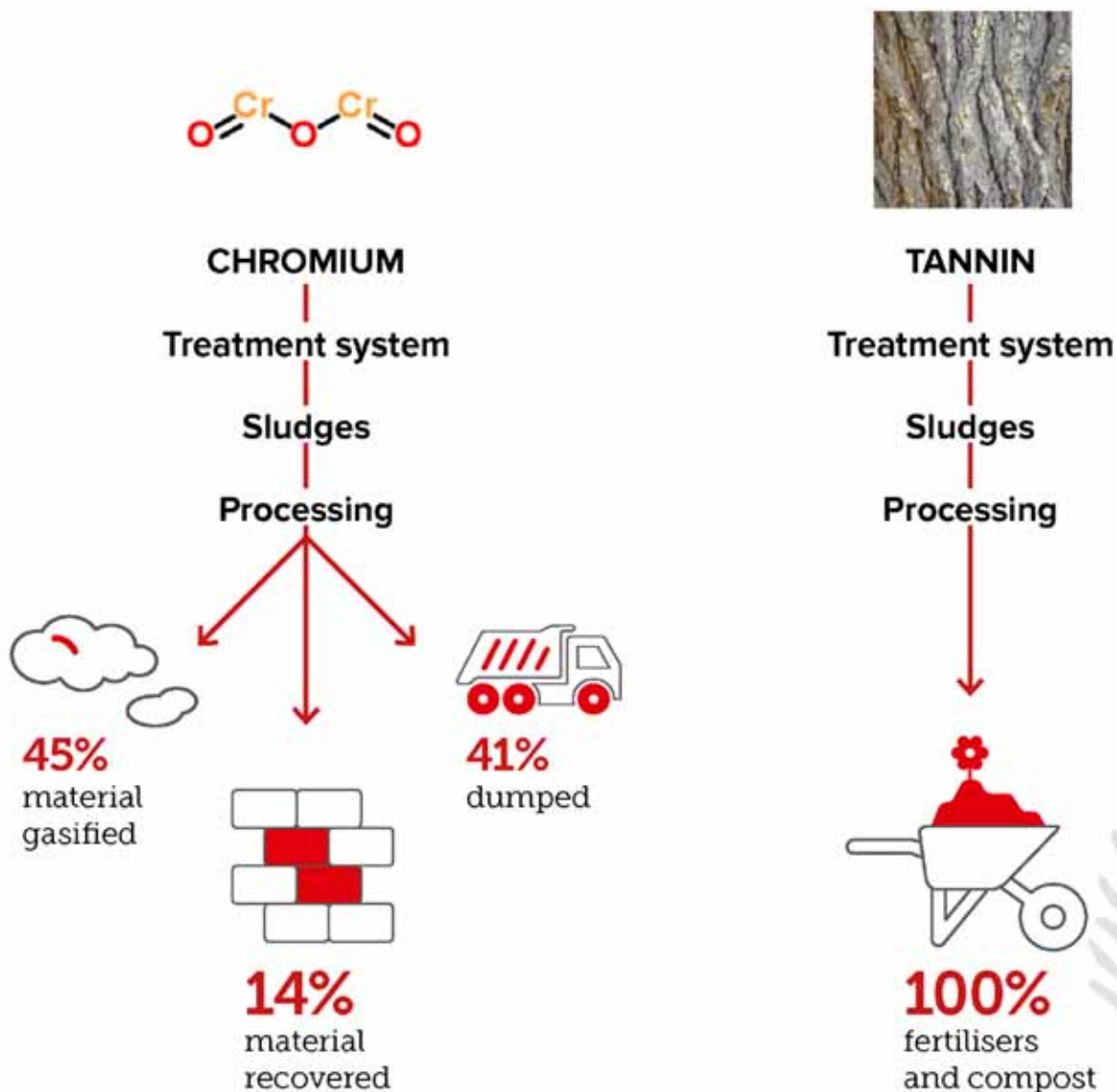
POLLUTANT GASES

Not just hydrogen sulphide, but a whole range of other pollutant substances are produced during the tanning process, from the initial phase involving cleaning of the skins to the final finishing phase.

TANNIN SLUDGE AND CHROMIUM SLUDGE

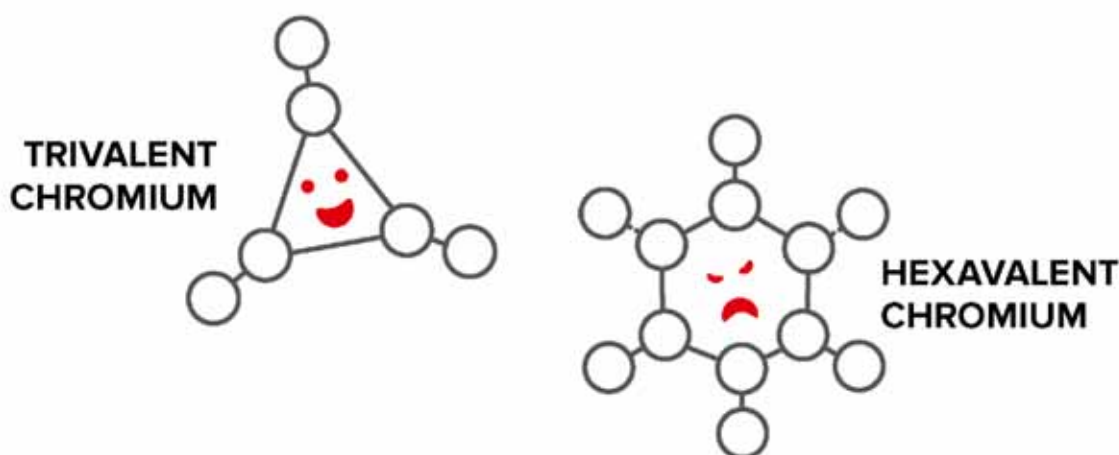
Tanning can be performed using two broad categories of substances: vegetables and minerals. **80% of the tanning** performed worldwide uses a specific mineral product, **chromium**.

The most widely used vegetable alternative is tannins, which unlike chromium, make it possible to recover all of the sludge residues produced.



The treatment of residues from chromium-based tanning is limited to recovery of approximately 14% of wastes, in the form of inert materials for the building industry.

CHROMIUM ON THE SKINS OF CONSUMERS



Chromium can take numerous forms because of its chemical bonds and electrical and physical characteristics. The form of chromium usually used in tanning is **trivalent chromium**, which, according to current scientific knowledge, does not raise any particular concerns for human health. But under certain conditions, particles of trivalent chromium that remain in an unbound state in the tanned skin can **change form**, changing into **hexavalent chromium**, which, unlike the trivalent form, is highly **toxic**. Most of the compounds of hexavalent chromium are **irritant for the eyes, skin and mucosa**. It is also recognised as a known carcinogenic agent for human beings (Group I according to IARC). It is no coincidence that Regulation (EU) No 301/2014 prohibits the sale of leather products that contain chromium VI in concentrations greater than 3 mg/kg.

The risk of mutation into hexavalent chromium increases with the quantity of trivalent chromium remaining in unbound form within the skin. For some, the problem can therefore be **avoided** if the best possible **tanning procedures** are correctly applied, and for others the only option is to use **tanning products other than chromium**.

THE ECOLOGICAL RUCKSACK OF THE SKIN

16

An ecological rucksack represents the quantity of **resources used** and the quantity of **wastes produced** during the production process of a given good.

This is what is behind the process used for chromium-based tanning of **1 kilo of skins**.



From 60 to 250 litres of water used and to be purified



From 37.2 to 210 megajoules of energy used



From 2 to 2.5 kg of chemical substances to be disposed of

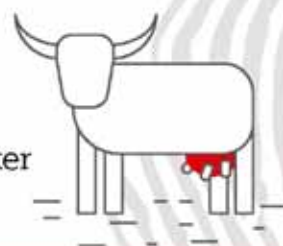


From 4.3 to 6.15 kg of solid wastes



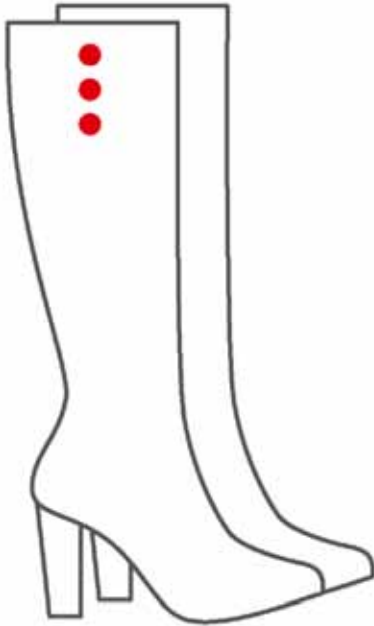
Please note:

the entire ecological rucksack should be considered, including the water and feed consumed by the animal (see Sheet 3).



Until the 1970s, Santa Croce was ruled by the law of the **jungle** in environmental terms. The water released from tanneries flowed directly into local watercourses, the gases produced were discharged directly into the atmosphere, and organic wastes built up in the large municipal dumps. In the rivers, fish died in droves, while the inhabitants of the district were forced to breathe air full of the bitter smell of rotten eggs. The breakthrough came through **popular protest**, which resulted in the **enacting of laws** to protect the rivers and the air, which required all entities in the district to take steps to protect the environment and, therefore, the health of the people. Tanneries were forced to make massive investments to install filters and organise initial separation of wastes. **Today**, the district has **2 major treatment plants** to which the waste water from the tanneries is channelled by means of corresponding sewers.

THE ECOLOGICAL FOOTPRINT OF A PAIR OF SHOES



The production of a pair of leather boots, from the birth of the animal to manufacture, requires the use of:



14,503 litres of water with treatment

or



25,024 litres of water without treatment



50 m² of land

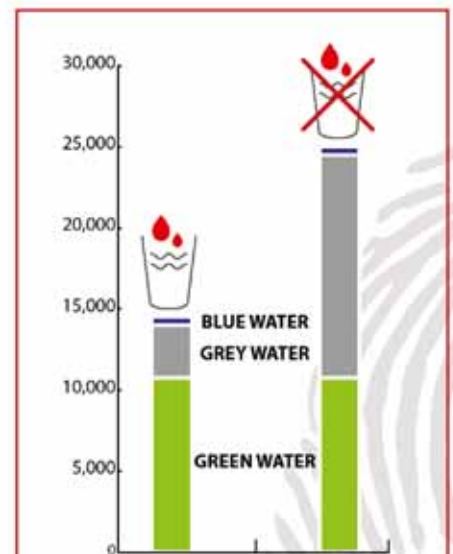
The largest factor in the land footprint for a pair of boots is from cattle farming (86%).

The size of the water footprint however depends on where the skin is treated. Tanneries that have effluent treatment plants have much smaller water footprints than tanneries that dump their waste.

If the effluent is not treated, some 10,500 extra litres of grey water are needed for every pair of boots to deal with the chemical waste. **With proper waste treatment, the water footprint for a pair of boots is reduced by 42%**, with the main demand for water coming from the cattle farming stage of the supply chain.

Some 10,700 litres of green water are used to grow the cattle feed, while a significant quantity of grey water is required because of the animal waste.

Although leather is just one of the products of the cattle industry, its full impacts must be recognised.



Comparing volumes of blue, grey and green water used in the production of a pair of leather boots, with and without effluent treatment.

Blue water: surface water and ground water

Green water: rainwater taken from the natural cycle

Grey water: water necessary to dilute the load of pollutants produced

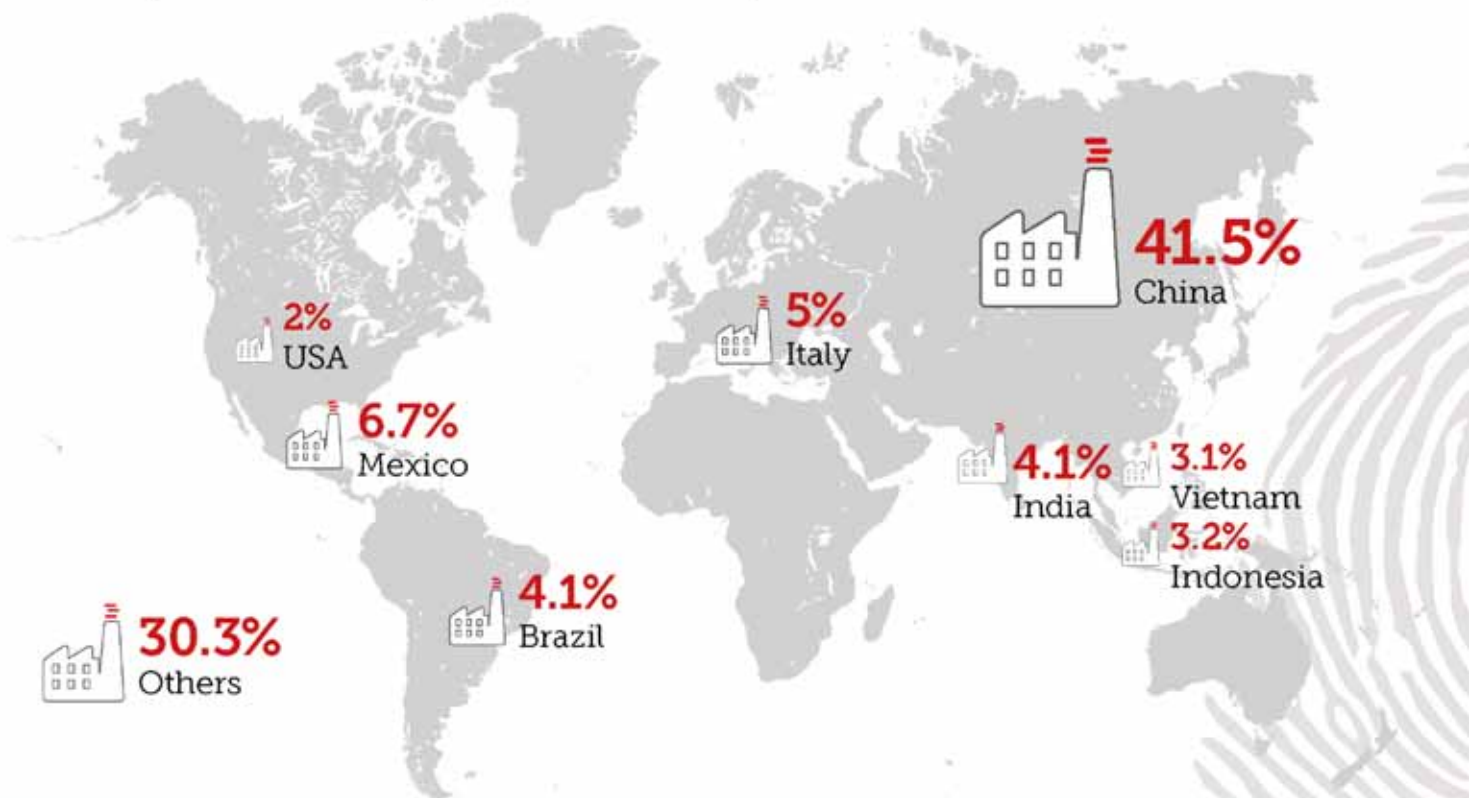
Helen Burley, Mind your step. The land and water footprints of everyday products, Friends of the Earth, May 2015

THE MAJOR COUNTRIES PRODUCING LEATHER SHOES

A significant proportion of **cow hides** produced throughout the world (slightly more than **50%**) is used for the manufacture of **shoes**. The leading producer is China, which is alone responsible for almost half of world production, followed by Mexico, Italy and Brazil. But producing a lot does not automatically mean earning a lot.

Indeed, while in terms of quantity, **the South exports more than double** the number of pairs of shoes exported by the North (1.38 billion compared to 673 million), in terms of **monetary value**, the situation is **reversed**: the North earns more than 28.6 billion dollars from its exports, while the South earns 25.6.

LEADING PRODUCER NATIONS OF LEATHER SHOES (in % of world production 2014)



Luxury production is concentrated in the North

38.4 €

Average purchase price for shoes produced and exported by Italy

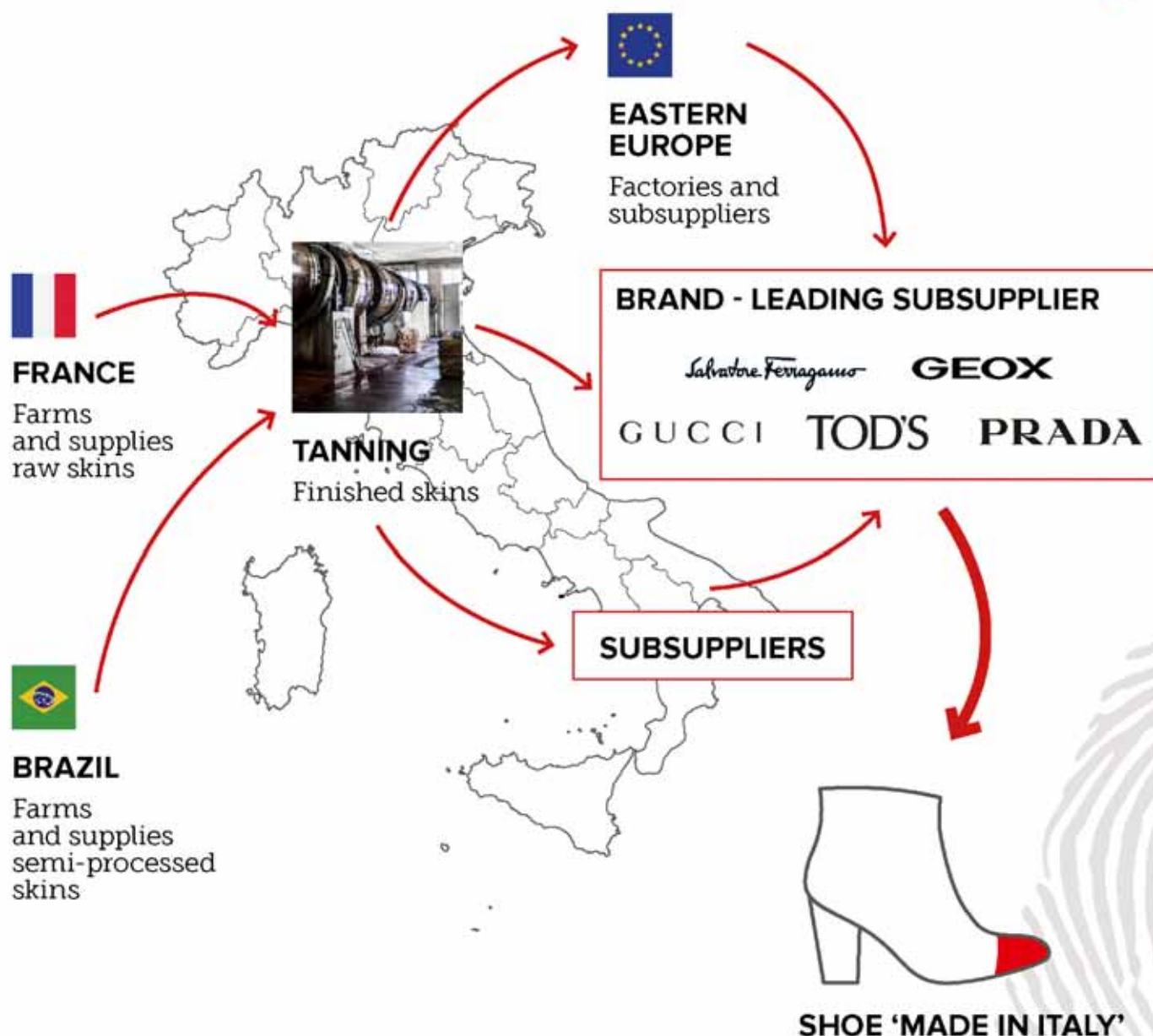
12.5 €

Average price of the shoes imported in Italy



THE POTENTIAL VOYAGE OF A SHOE 'MADE IN ITALY'

19



The raw and semi-processed skins are imported primarily from Brazil and France, while the central tanning process takes place in Italy. The main purchasers of tanned skins are the major luxury brands, which assemble shoes directly using the services of suppliers in Italy or abroad, for certain specific phases, but which also have shoes produced by shoe manufacturers in Italy or abroad, so-called leading suppliers, using sub-suppliers for specific phases.

WAYS TO AVOID BEING PART OF THE PROBLEM

20

WE RECOMMEND



To consumers



- ✓ Buy good shoes that you can have repaired a few times by a good shoe repairer.
- ✓ Ask in the shop/the company how the shoes were produced.

To companies



- ✓ Pay a living wage to the workers throughout the entire production chain.
- ✓ Monitor working conditions throughout the entire production chain.

To policy makers



- ✓ Make consumers a transparent supply chain of their shoes available.

If you are against the processing of animal skins, there are alternative industrially-derived products.



PUBLISHED BY:

Centro Nuovo Modello di Sviluppo (CNMS)

Via della Barra, n. 32 - 56019 Vecchiano (PI)

April 2016

AUTHORS:

Pierpaolo Corradini, Stefano Gallo, Francesco Gesualdi.

DESIGN BY:

YOGE Comunicazione Sensibile

This publication is made possible with financial assistance of the European Union. The content of this publication is the sole responsibility of Centro Nuovo Modello di Sviluppo and in no way reflects the views of the European Union.

CHANGE YOUR SHOES is a partnership of 15 European and 3 Asian organizations.

We believe that workers in the shoe supply chain have a right to a living wage and to safe working conditions, and that consumers have a right to safe products and transparency in the production of their shoes.



our world
our dignity
our future

2015 European Year for Development