



Leather and Sustainability: From Contradiction to Value Creation

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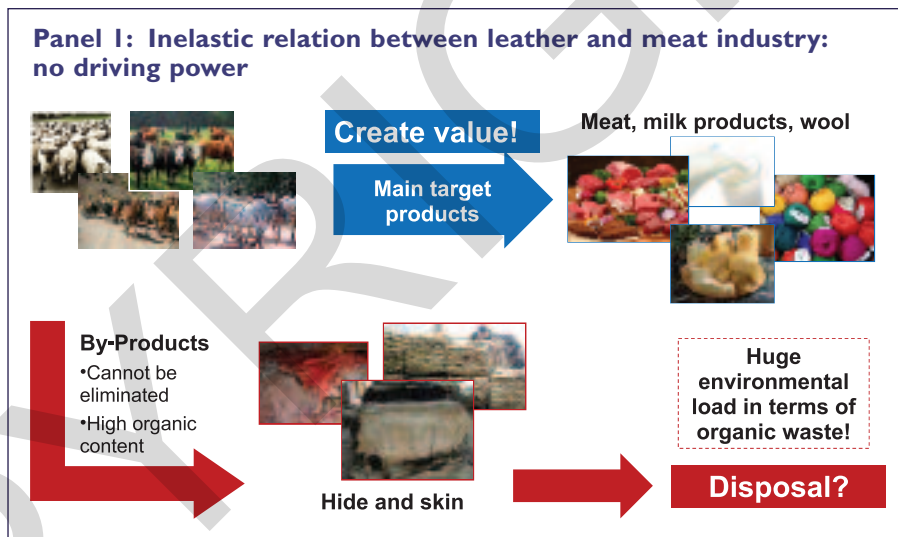
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The word “sustainability” has been gaining popularity and importance in recent years, in both consumer and industry language. However, the concept of sustainability is complex in terms of outlining a clear definition and implication for the leather industry. The topic is discussed broadly in the media and although most people have a clear opinion on sustainability, the understanding and perception becomes diverse, especially if we look at it from a global point of view. Sustainability has both a short and long term impact on societies, communities and industries. It can result in a more positive or negative image, depending on how it is defined⁽¹⁾.

In general, the public does not always link the leather product to sustainability in a positive way. Leather is used in many luxury goods in our daily life, but when it comes to sustainability, consumers tend to link leather to industrial farming, the processing of animals in the food chain, and chemical waste.

Animal skin, the initial raw material for leather production, originates from animal farming, but it is generated as a by-product in the animal-based food chain. It is essential that when we look at sustainability, we should extend the scope of the overall meat production to include all products coming from this industrial process.

Animal husbandry is often seen as simply being a means of producing meat, but animals are also raised for the production of milk, cheese, wool, eggs and many other highly valuable products. Although the public sees a clear need of the above mentioned products, the manufacturing of leather is often not seen in the same context. In order to avoid misperceptions, it is a responsibility of the leather industry to continuously convince



consumers that the major part of raw material for the production of leather is an unavoidable by-product of animal husbandry, this relationship being expressed in *Panel 1*.

Having this in mind, we can then see that leather and sustainability is not a contradiction at all.

It is also important to recognise that a relevant number of the world's population prefer to ban the production, processing and marketing of meat for religious, ethical, health or ecological reasons. These preferences should also be taken into account when we assess animal products in general, including the leather product and the processes linked to it.

Leather – From Waste to Wealth

Whenever there is industrial slaughtering, animal skins will be available as a by-product. Less than 2% of animals are farmed specifically for their skin to produce luxury goods such as fur or reptile skin. For these 2%, it could be asked

whether the production is sustainable and conforms to modern standards.

Regardless of the leathers used as by-products from the production of meat, society has to evaluate if there is an alternative use for animal skin generated from this industrial production.

Currently animal skin which does not go into leather production ends up in incineration or landfill, which reduces the added value of the overall process. Animal skin can be processed into gelatin or collagen products, but not all of the waste that is generated by the livestock industry can be processed into valuable products. Theoretically, it would also be possible to produce biogas, but efficiencies are low and the needed infrastructure is missing. As a result, the highest added value is obtained by tanning the skin to produce leather, as illustrated in *Panel 2*.

A topic often discussed in this context is whether the trading of hides as a by-product from the production of meat



effectively subsidises the whole value chain. Hides can and should be marketed in order to contribute to the overall added value in production. If this were not the case, meat producers would have to pay for the disposal of the skin, and this would increase the overall cost of meat production.

If we look at the different constituents of the skin and the end products that are made from them, there should not be any issues regarding sustainability, because all of the raw materials used are from regenerative sources.

Animal skin is an organic material and, theoretically, 99% of it can be processed into useful products, and this high utilisation of collagen is summarised in *Panel 3*.

The products that can be made from animal skin mainly include leather, dog chews, sausage skins and cosmetic products. The animal skin has to be seen as a sustainable material, and for this reason the leather made from it should be viewed as being just as sustainable.

The focus then has to be on the process of transforming the animal skin into the leather product and achieving this in a sustainable way.

Tanning is an industrial process involving many chemical products. Accordingly, to produce leather in a sustainable way, it has to be the responsibility and constant challenge for the industry. In other words, the sustainability of the leather product depends heavily on the manufacturing process rather than on the raw hide from which it is made.

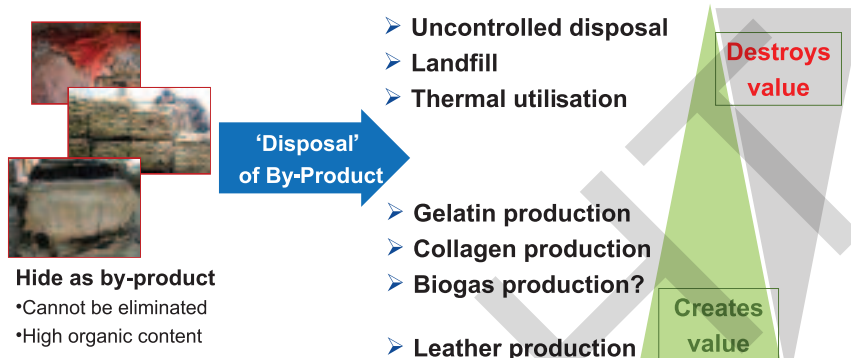
Sustainability – Definition, Measurability and Control

Ever since sustainability was first defined by the UN Brundtland Commission⁽²⁾, sustainability has been one of the key topics in social and industrial development and it has become one of the key growth factors for the world economy. No industry, including the leather industry and its value chain, can isolate itself from concepts of sustainability.

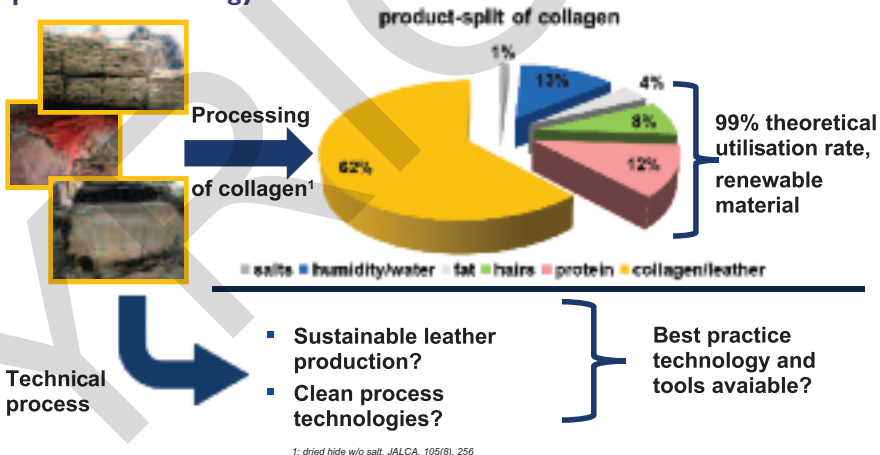
In order to manage this in a fair and comparable way, sustainable development needs to be defined specifically for each industry. The criteria that are used must be measurable and be subject to monitoring to have an impact on industrial development. This provides a footprint as part of sustainability as set down in *Panel 4*.

Sustainable development should be viewed from three different angles:

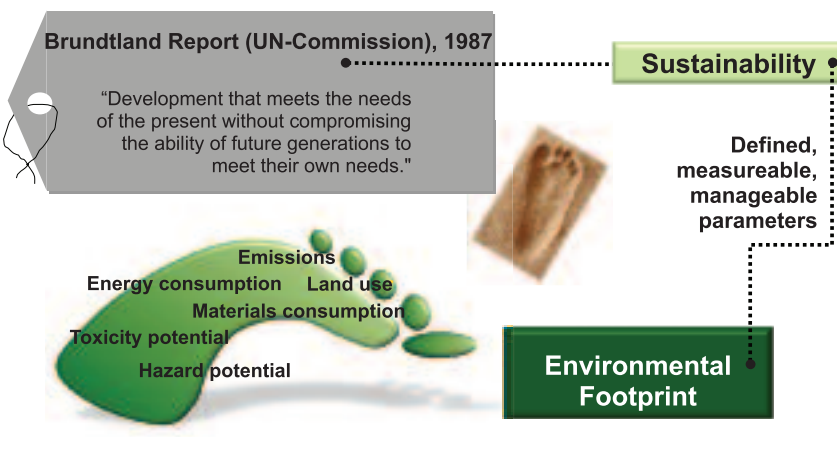
Panel 2: Leather production guarantees the best value creating path



Panel 3: High utilisation of collagen possible, but need for clean process technology



Panel 4: Footprint is an integral part of sustainability



- Economic activity,
- Ecological factors,
- Social responsibility.

The absence of sustainability in any one

of these areas questions the overall processes and products. This factor is often restricted to the field of ecology, but development will not be viable unless it is also based on sound economic and social principles.



It is essential that leather production stays profitable in a sustainable way. Nevertheless, it is just as important that responsible social standards that might be missing – such as equitable payment and a safe working environment – is in strong contradiction to the principles of sustainable development.

The Sustainability Footprint – An Integral Approach

To achieve a sustainable footprint it is essential to take a close look at the role of ecology in the leather value chain. Ecological assessments can be made on the basis of a wide variety of different parameters.

There are four key elements in the production of leather that should be grouped together to provide a sustainable footprint concept, and these are set down in *Panel 5*.

(1) THE CARBON FOOTPRINT

This is a topic that has gained significant public awareness in recent years. It is based on the analysis of CO₂ (Carbon Dioxide) that is emitted into the environment in a production process.

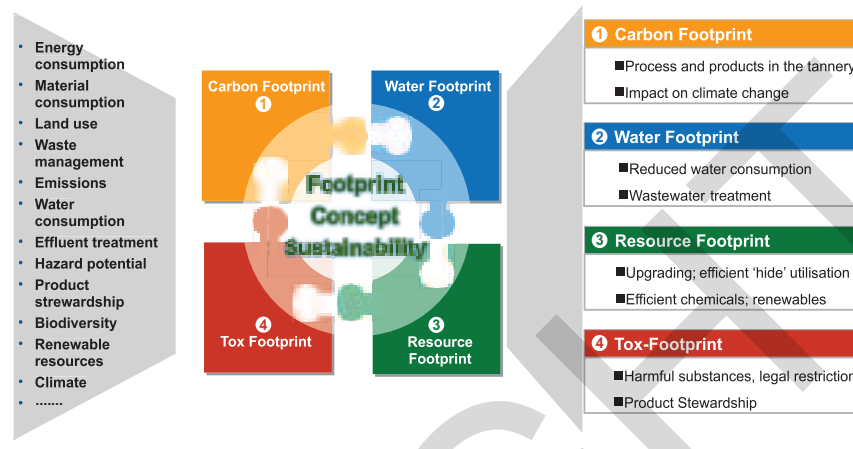
In terms of leather, it is important to avoid adding CO₂ generated by cattle farming to the balance generated by the manufacturing of the leather itself. Efforts are currently being made by the leather industry on an international scale^(3,4), to supply scientific data to correct those misconceptions.

Nevertheless, the reduction in CO₂ emission has to be a continuous target for the industry, as it goes hand in hand with the consumption of less energy and chemicals for the production of leather⁽⁵⁾. Topics such as transportation and logistics also have to be addressed in the overall carbon footprint.

(2) THE WATER FOOTPRINT

This will continue to grow in importance in the coming years because the efficient use of water is one of the key challenges of this century. The water that is used as a solvent in the production of leather is a scarce resource, and it is becoming increasingly more expensive in terms of both consumption and effluent treatment⁽⁶⁾. The water footprint gains even more importance looking at the significant number of tanneries located in arid regions of the world. The pressure is on innovation for new technologies and chemicals in order to provide more efficient processes for the production of leather.

Panel 5: Elements of Footprints are integral part of 'sustainability for leather'



(3) THE RESOURCE FOOTPRINT

This covers many aspects as it touches on different resources employed in leather production. However, it needs to be recognised that the raw stock is the single most important and valuable resource in the production of leather. Every attempt to increase the added value by upgrading low-quality leather, eliminating waste in the cutting of patterns, reducing waste products, or lowering the costs of tanneries results in an immediate benefit.

The resource footprint also covers the efficient use of chemicals based on regenerative raw materials and optimised production processes in tanneries, including, for example, lower energy consumption. This is another example of the cradle-to-cradle approach, because leather needs to be capable of being recycled or completely biodegraded in order to ensure that it can be disposed of in a sustainable way.

(4) THE TOXICOLOGICAL FOOTPRINT

This is another aspect of leather production that is frequently discussed. One example is the on-going discussion concerning Cr(VI) or NMP (N-Methylpyrrolidone) in the value chain and final product. The toxicological footprint addresses the use of harmful substances in the production of leather, the restricted substance list, the management and handling of harmful substances, legal requirements, the demands of specific industries/brands, as well as product and process safety.

The aim of the toxicological footprint must be to minimise the levels of harmful substances used in the production of leather and ideally to eliminate them. Current discussions include the ZDHC (Zero Discharge of Hazardous Chemicals)

campaign⁽⁷⁾ initiated by major brands and the new VOC (Volatile Organic Compounds) regulations that apply to automotive leather in China⁽⁸⁾.

The four footprint concepts

BASF sees itself as a driver of development in the leather value chain. Therefore we take responsibility for the sustainable development of leather. The sustainability footprint concept now provides the tools with which all stakeholders involved in the value chain can create added value sustainably.

All processes and products developed by BASF are regularly subjected to a detailed sustainability check, because we see this as the only way to ensure sustainable success in this business.

The four footprint concepts will be examined in greater detail in forthcoming editions of *World Leather*. We will demonstrate and support this with reference to practical examples based on our industry expertise. ☺

References

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