



LN SUSTAINABLE

A White Paper View of the Sustainability of Responsibly Made Leather

While it is quite easy to explain what is not sustainable, declaring something to be sustainable is difficult. There is no precise definition of the term sustainable that allows a simple statement of “yes” to the sustainability of a product.

That does not mean that the term is impossible to use, but it does mean that it requires considerable analysis before making any pronouncements, and with our partners in the leather industry we fully accept the need for precise language and integrity in this matter. As a consequence, we have put together this “white paper” for members, partners, and the industry at large to consider.

For an industry such as “leather” considerations on sustainability require a number of straightforward features:

- identifying some clearly stated criteria regarding people, processing and environmental management;
- measuring all criteria and seeking continuous improvement;
- being transparent about all related matters;
- researching for best practise and leading-edge knowledge in order to introduce new procedures and methodologies that will lead to further improvement;
- there are some key areas such as waste and staff management where a failure to engage or reach a reasonable standard is an immediate disqualification, regardless of the industry.

It can be seen that we do not see sustainability as a destination but as an ongoing process of learning and improving, albeit the base line standards of responsible tanning discussed later must be achieved.

Based on our 21st century knowledge, we acknowledge that leather making in history would not be categorised as sustainable today.

This is not because either the process or the people involved in leather manufacturing were (or are) inherently bad. Processes and chemicals were used that are today known to be dangerous for health in some way, but at that time were thought to be safe. There are many similar instances such as in cosmetics, medicine where lead, arsenic, cadmium and other poisonous materials were used in history before we understood their dangers. Industry was seen as important for progress and no one had properly realised the environmental damage it could do as it grew bigger. In the mid 20th century the world had a population less than half of that today, and the level of damage being done was consequently less, and the land and rivers had a better chance to recover.

Rachel Carson catalysed a change in attitude with the publication of her book *Silent Spring* in 1962. This book catalogued the longer-term damage being done to the environment by the use of pesticides such as DDT. In December 1970 the Environment Protection Agency was founded in the USA and the Clean Water Act was passed in 1972. Although there had been prior awareness around the world - founding National Parks, protecting birds and trees, and laws regarding the disposal of butchers' waste' - this was the moment that the industrial culture began to change in the leather industry.

The best and most commonly used definition of Sustainability is taken from the Brundtland Commission – Our Common Future, United Nations, 1987. This seminal paper set the environmental agenda and this definition is the foundation of most contemporary environmental training. Nearly all other definitions of sustainability are derivatives of this. The Rio Earth Summit of 1992 was based upon it.

Sustainability definition (Brundtland)

'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

Brundtland indicated that this definition of sustainability contains alongside it two key concepts:

- The concept of needs. In particular the essential needs of the world's poor, to which overriding priority should be given: and
- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (We must advance to develop but in doing so must not deplete the planet of resources future generations might need).

Effectively these say that we must bring people out of poverty as a top priority, and that to do this and to advance society there will be some compromise with the environment, which we must handle thoughtfully without depleting resources.

On the basis of this Brundtland definition, Leather Naturally members believe that properly manufactured leather does meet the criteria for sustainability. It is accepted that there is still much to be done, and that this is an ongoing process rather than a completed task. Allied with this we believe that amongst many major chemical and machinery companies, as well as most top leather manufacturers there has been a major culture change: they now clearly believe that following and achieving the best practise in all aspects of Corporate Social Responsibility and environmental management is the correct thing to do.

It is fully accepted that some areas of the leather industry, mostly but not exclusively with the smaller, historic, unregulated plants remain unacceptable.

Looking at the sustainability of leather as a specific more measured item became a serious matter when carbon footwear started to be calculated. A huge charge from livestock was put on leather, while no charge was put on plastics or synthetics from their fossil fuel origins. It has slowly become accepted that this is a flawed analysis and if we are to be responsible producers and consumers, we need to be more honest, transparent and objective in our approach.

In fact, the sustainability of leather becomes particularly clear compared to plastics that use up resources from fossil fuels, mostly for a single use before disposal and always with a much shorter usable life.

Leather Starts with a Natural Material

Starting with a natural material as we move along the leather value chain more and more jobs are created in leather-using industries such as footwear and garment manufacture. Over the last few decades since 1960, leather-using industries have helped pull many millions of people out of poverty in Korea, Taiwan, India, China and many other countries. Currently, we are seeing this happening today in Africa and other places. Jakov Buljan, who used to run the leather section at UNIDO, discussed this multiplier at an industry conference in 2014 talking about 1 sq. ft. of leather (being routinely produced) creating 50 jobs in leather-using industries. There is no doubt that even a brief look at the numbers employed in a leather manufacturer are tiny compared to those required in a footwear or leather goods factory using the output from that leather manufacturer. Leather footwear,

leather goods, leather garments and gloves and other leather using industries have pulled millions of people out of poverty and into the tax paying middle classes that are so needed to make poor countries economically viable.

Additionally, it is important to give prominence to longevity and repair, one of the most vital elements in the concept of the Circular Economy. Walter R. Stahel, who has been influential in developing the field of sustainability, advocated the 'service-life extension of goods' - reuse, repair, re-manufacture and co-founded the Product Life Institute in Geneva, Switzerland, a consultancy devoted to developing sustainable strategies and policies, after receiving recognition for his prize-winning paper 'The Product Life Factor' in 1982. His ideas led to what is now known as the circular economy in which industry adopts the reuse and service-life extension of goods as a strategy of waste prevention, regional job creation and resource efficiency in order to decouple wealth from resource consumption.

His argument is that using resources for the longest time possible can cut some nation's emissions by up to 70%, increase their workforce's by 4% (repairing items) and greatly lessen waste. This fits well with leather as even what get termed as lower grade leathers last a long time, and the ability to repair a leather item usually depends on the design. Mostly the non-leather elements like zips and stitching are where failures are first seen. The leather itself usually lasts a long time. We accept that heavily pigments leathers and full grain types react differently but think even such more heavily coated leathers outlast plastics as long as the coating thickness falls correctly within the definition of leather.

When competitors sell plastics or other combinations falsely under the name of leather it is in this area that problems are usually seen. Items do not last as long as expected and it is discovered that they cannot be repaired and have to go to landfill. A short working life and hundreds of years in landfill is typical for most leather alternates.

In January 2011 Pete Lankford, design director for Earthkeepers and Timberland Boot company, was quoted as "noting that while there are plenty of things to be concerned about in the leather-making process, from the resources that go into raising the cows to the industrial processes at leather manufacturers, the products stand the test of time. Leather wins hands down over anything you can think of," says Lankford. "If you can buy a pair of boots that last twice as long as a synthetic alternative, you'll end up with half the environmental impact in the long run", he notes. Timberland and other major retailers, meanwhile, have partnered to form the Leather Working Group to craft a rating system for leather manufacturers based on their efforts to reduce their environmental impact.

The Brundtland definition was laid down deliberately as a broad definition to create an umbrella that everyone could come under. The intention was that they should understand the direction of travel and think hard about their business processes. We believe the leather industry has embraced this and the mainstream industry has corrected the vast majority of the issues, having switched mentality from doing only what the law requires to positively trying to adopt and improve best practise.

The leather industry was helped, perhaps, by the fact that in the 1970s and beyond an increasing proportion of manufacture of leather products- shoes, gloves, bags and garment moved to less developed countries (creating millions of jobs there) and built new factories on green field sites. This put pressure on leather manufacturers in the older economies at the same time as many of them realised that they were in the wrong location to meet the new demand, and anyway did not have space to expand their waste treatment plants economically. As a result, many old plants closed to be replaced with modern factories with full environmental treatment and the best equipment for the safe handling of chemicals. Those leather manufacturers who remained in the west have now been rebuilt or updated to work to the highest standards.

Everything we eat, hold or wear is based on chemical engineering. As an old industry that pre-dates the chemistry industry making leather used a lot of bio-materials, and mostly swapped these for modern chemicals at the start of the 20th century. The chemicals used in the leather industry are highly regulated and are safe when handled properly. This is no different from any other use of chemicals, be it in packaging, household goods or even the food industry. To use terms which are badly defined or inaccurate such as heavy metal or toxic in relation to leather manufacturing chemicals is an abuse of science and quite unhelpful when trying to objectively assess the position.

Situations should not arise where the workforce is not provided with appropriate work wear or storage and handling facilities for chemicals. Equally we fully accept that no untreated effluent should reach the land or water channels. Serious problems will come quickly if people drink or bathe in the water or more slowly, but inevitably, if this waste water seeps down into the water table. Water tables worldwide are under serious pressure as urbanisation has accelerated so groundwater care is now vital. With modern machinery and metering, and careful channeling of waste streams water usage has dramatically reduced in tanneries. Through careful management of waste streams many tanneries now recycle 40% or more of the water they use.

Properly used all the chemicals used in leather manufacturing are safe, and the most difficult to handle effluent wise is in fact common salt. It is the most difficult to remove but has a big impact on drinking water if it gets into the ground water or a river. Leather manufacturers are working hard to reduce its use.

Chromium is often mentioned as a leather manufacturing problem because of cancer but the cancerous form is not used in leather manufacturing and can only be created through careless processing. The problem with this chromium anyway is not one of touch, but of ingestion. No effluent water from any type of industry should be allowed untreated into a watercourse where it will be ingested.

By-Product

There are many reasons why farmers keep livestock, but making leather is not one of them. Hides and skins are very much a secondary product or, more precisely a non-determining co-product. The hides and skins offer a useful income but never enough to create a primary reason to keep a herd of cows or sheep. Consequently, the consumer desire for leather cannot create a bigger supply, and as a result as the human population has grown faster than the supply of leather over the centuries we have seen more use of textiles, paper, glass and other materials in uses that were once exclusively leather.

There is an exception with what we call exotics which include mostly reptiles. They constitute less than 1% of leather made in the world but we accept they are an important part of the luxury goods industry. It is fair to say that there is a mixed set of opinions about using them within the leather industry, but this very small sector does not define in any way the nature of the global livestock industry.

In some instances, as with crocodiles, the animals are farmed and there is some evidence that this farming plays an important part in the preservation of certain species which would have been exterminated otherwise as human habitats encroached upon their territory.

What we definitely expect is transparency and honesty about the origins of skins, and assurance that everything tanned is CITES¹ approved. We note that some of the bigger

¹ CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

luxury goods companies have bought into the supply chain in order to have control not only of the supply but also of the ethics and procedures involved.

There is then a non-exotic intermediate category of such skins as kangaroos which are culled for environmental reasons, where environmentalists mostly consider that it is important that the meat be eaten, and the skins tanned to help cover the costs of the environmental processes involved. Around the world environmental experts nearly always suggest it to be important to use the meat and hides of culled animals, be they deer in Wales or kangaroos in Australia. With ostriches the balance between the value of the skin, the meat and the feathers have varied over the years and in this case leather is clearly a co-product with roughly equivalent value over the years to the other two products. Again, as with reptiles, the volumes of these categories is a fraction of 1 per cent of the total leather made.

All the cattle, sheep, pig and goat hides and skins that come to the market to be made into leather are by-products. None are bred or slaughtered with the primary purpose of making leather.

Alternate Uses for Hides

During the 2008 financial crisis the dramatic upset in the marketplace suddenly reduced the demand for some hides, and in a few cases abattoirs that were not set up to preserve and store the hides had to throw them away. Consequently, it is often noted that leather making is useful to avoid the waste problems that would arise if the leather manufacturing industry closed down.

The proteins in hides and skins are edible and useful in other ways and while it is true that the infrastructure today is only suited to use hides and skins for leather, we suggest other outlets could arise before long if leather use was not available. There is quite a big demand for such products as gelatine, sausage skins and the many others uses in cosmetics and medical products. Currently these are met by using only some parts of the hide or using bones and hooves.

Nevertheless, history led society to believe that making leather was the best way to utilise this by-product and we believe it still remains the case. The cost of safely disposing of unwanted hides and skins if not used in making leather is quite high.

Livestock Rearing

The fact that hides and skins arise regardless of the consumption and demand for leather mean that for most scientific measurements what happens with livestock can be said not to be a matter for the leather manufacturer. This is the foundation of the EU product environmental footprint category rules (PEFCR) for leather which indicates that hides and skins as a by-product should carry a CO₂ weighting from livestock of less than 1.0% (see below).

Yet leather manufacturers have always been interested in the husbandry and welfare of animals and are increasingly placing this as an important item in their CSR agenda². From the historic “warble fly” in Europe which was eradicated there in the mid 20th century largely at the instigation of leather manufacturers to the “ekek” problem today in Ethiopia leather manufacturers need to be involved with the farming community to get improvements. Essentially the better the animal welfare the better the hides. The end of warble fly was recognised as a major benefit to cattle welfare and tests done on Ethiopian

² Corporate Social Responsibility

sheep show that ekek treatment leads to a much healthier animal and a much better-quality skin.

The main argument against livestock (other than those coming from animal rights and vegan groups) relate to methane, water and energy consumption first raised in the 2006 report "Livestock's Long Shadow". Subsequent studies have shown this report to be full of errors, not least from assuming that all cattle are kept in the same maximum emission way. Around the world livestock are kept in a wide variety of ways suited to local climate and conditions. Much of the land they graze on is not suited for food crops or forestry and increasingly they are used in a controlled way to maintain biological diversity on grassland and intermediate land.

From our studies we believe that the complaint regarding methane from cattle is wrong on a number of fronts –

- Historically stable levels of methane from livestock are part of the planet's carbon cycle. After about ten years in the atmosphere the methane breaks down and provides nutrients needed along with sunlight for the photosynthesis that allows our plants and trees to grow.
- Since 2000 any link between methane growth and livestock appears to have been broken and the main cause of any growth in atmospheric methane now comes from natural gas and fracking
- The figures in the 2006 report are now accepted as being wildly exaggerated, but persist on line because of the nature of the modern Internet
- Small changes in the diet of livestock can dramatically reduce methane produced from livestock with studies showing this to be between 30 and 90%.
- Methane from slurry, where produced, is increasingly being used to produce biogas for power generation.
- The carbon footprint of the leather manufacturing process is tiny compared to that which has been given to livestock rearing. Exact figures are hard to come by, and the figures for cows varies greatly around the world. A figure of 1% for leather manufacturing and 99% for the livestock rearing would be a fair generalisation at this time. In fact a recent EU study indicated showed that 88% of the cow's CO₂ was destined to milk and 12% to meat. Of this meat, 3.5% was related to the hide, meaning 0.44% of the cow farming can be related to leather.

Why Leather?

Properly made and sourced we believe leather is a truly sustainable material. We are creating a product that is both natural and long lasting - leather is unique in its ability to combine beauty, comfort and practicality.

Given the extensive range of raw materials with different properties, and the many processes developed over time leather making is highly versatile and leather manufacturers can produce leathers with widely varied properties and looks. From a thick hard piece of cattle hide used for a sole leather to a soft thin chamois leather from a sheep which can absorb large amounts of water leather can be adapted in terms of properties, look and feel to be suited for many end uses. While substitutes are being developed from plastic, cellulose and other biomaterials the complexity of leather in terms of both chemistry and architecture is very hard to copy. This versatility in terms of performance and beauty is the explanation for leather still being accepted as an important and useful material in society after so many thousands of years.

Beauty: leather can look and feel rich and luxurious. It can be tanned and conditioned to create a wide range of finishes and colours, and to achieve a beautiful balance between form and function. And many leather products become more beautiful and interesting with

age; in fact, the more you use some leather articles, the more it acquires a unique character all its own.

Comfort: leather is comfortable because it can absorb moisture such as perspiration and it breathes. Its fibrous construction has memory and shapes to your own use over time, be it a jacket, footwear, bag or wallet tucked into a pocket. And a range of textures is achievable, from soft and supple to firm and rugged. For items like gloves leather manufacturers adapt its stretch characteristics to create a perfect tight fit.

Practicality: leather offers protection from wind and cold, and can be made resistant to rain and snow. It is durable, and can usually be easily cleaned with little more than a damp cloth (check the labels to see about washing or dry cleaning). Quality leather is often made into products that are timeless, fashionable classics that will last a long time.

Conclusion

Given the wide range of raw material and processes leather is a versatile material. It comes in many types and forms. While work for further improvement is needed in every part of our business network from farming through to the design, consumption and disposal of products made of leather we believe we have enough clarity to be able to say that responsibly manufactured leather is sustainable.

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