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SUSTAINABLE LEATHER FOUNDATION

# GUIDELINES

## For Transparency and Traceability of the Leather Value Chain in Pakistan

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The International Labour Organization (ILO), founded in 1919, is devoted to promote social justice and internationally recognized human and labour rights, pursuing its founding mission that social justice is essential to universal and lasting peace. It is the only tripartite UN agency, which brings together governments, employers and workers of 187 member states, to set labour standards, develop policies and devise programmes that promote decent work for all women and men. Today, the ILO's Decent Work agenda is helping advance economic and working conditions that gives workers, employers and governments a stake in lasting peace, prosperity and progress.

## WWF-PAKISTAN:

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which people and nature can thrive.

## INTERNATIONAL LABOUR AND ENVIRONMENTAL STANDARDS APPLICATION IN PAKISTAN'S SMES (ILES):

The International Labour and Environmental Standards Applications in Pakistan's SMEs (ILES) project (2016-2024) funded by the EU, and implemented by the ILO and WWF-Pakistan, aims to improve national compliance with international labour and environmental standards. It provides necessary policy and capacity building support to the federal and provincial governments as well as extends hands holding and capacity building support to the enterprises from the textile and leather industry. It has introduced its targeted enterprises to different approaches/methodologies that enables them to reduce waste production, ensure efficient resource utilization as well as have better working conditions, which in turn enables them to increase productivity and be more environment friendly. The project targets to contribute significantly to increasing competitiveness, as well as promote sustainable and inclusive growth in the leather and textile sector in Pakistan.

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# EXECUTIVE SUMMARY: WHY THE NEED FOR TRANSPARENCY AND TRACEABILITY?

Traceability is the foundation for transparency, without which all commitments, pledges, systems, and tools will fail to result in meaningful, transformative change.

Unless industry can provide, through robust traceability, verifiable evidence that farming of livestock and the production of leather is not responsible for negative associated risks, then the industry will not be sustainable for the future. It is important that all stakeholders recognise the need for connected responsibility and accountability to create strong value chains that meet the needs and expectations of modern society.

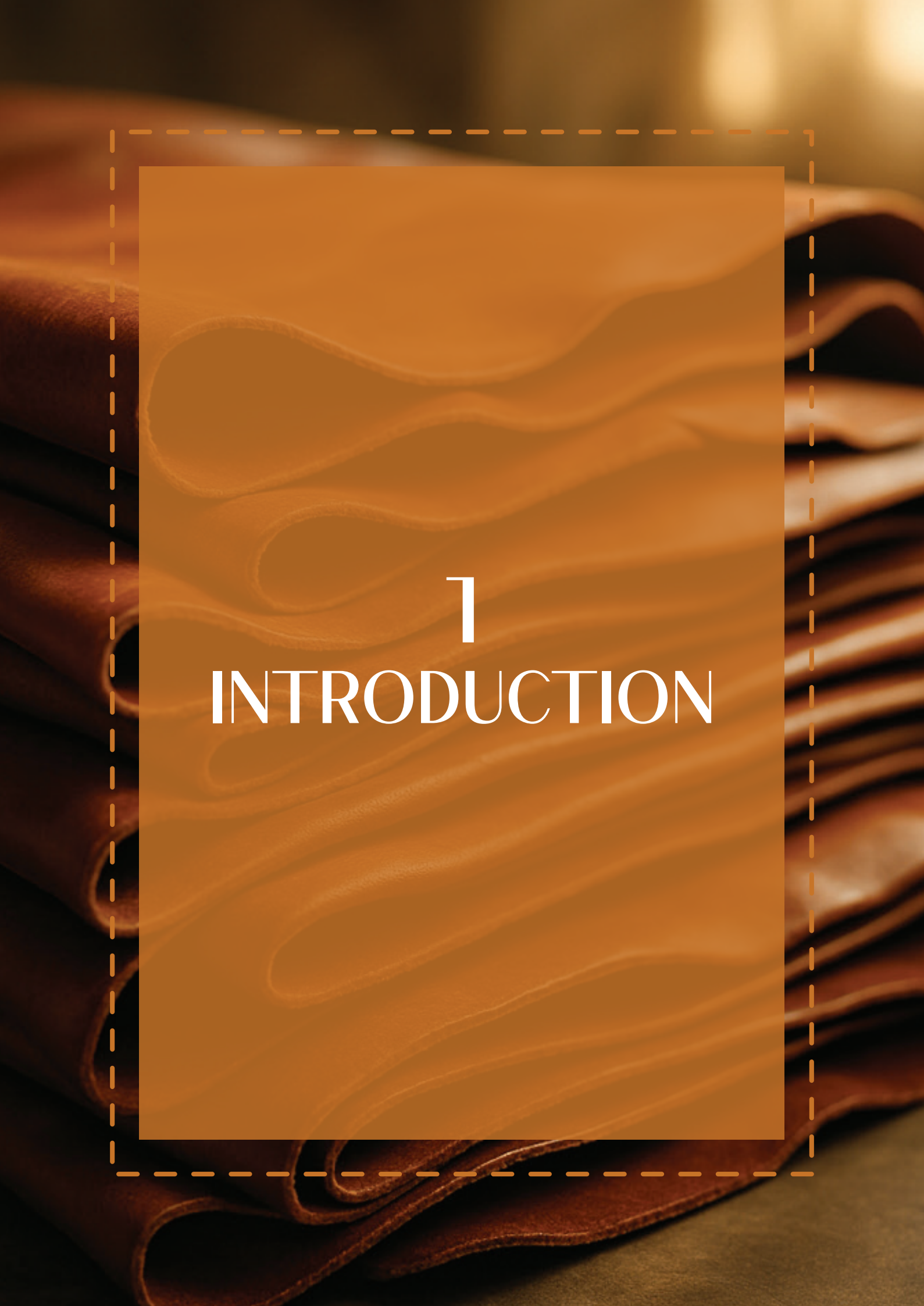
The leather industry is becoming a regulated industry, with incoming regulations such as (but not limited to):

- the EU CSRD (European Union Corporate Sustainability Reporting Directive)
- the EU CSDDD (European Union Corporate Sustainability Due Diligence Regulation)
- the EUDR (European Union Deforestation Regulation)
- the EU GCD (European Union Green Claims Directive)
- the UK Forest Risk Commodities Act
- the New York Fashion Sustainability and Social Accountability Act
- the EU CBAM (European Union Carbon Border Adjustment Mechanism)

The ability of the industry to meet the raft of legislative requirements will rest on its ability to provide robust, verifiable traceability and to be transparent by way of reporting. The objective of the Transparency and Traceability Guidelines is to equip the livestock and leather industries in Pakistan with the information needed to meet these regulations and to prosper as a sustainable profit- generating industry of the future.

The guidelines will provide information for farms, hide/skin traders, tannery owners, brands and regulatory authorities and enable a framework to develop transparency and traceability in Pakistan. The guidelines will also focus on the associated benefits of having a supply chain traceability system in place that supports best practice and meets regulations related to traceability of leather in different parts of the world.

These guidelines will provide practical implementation tools and methodology that can be adopted by the leather value chain.



# 1
# INTRODUCTION

# 1 INTRODUCTION

## 1.1 Outcomes

Through the adoption of the guidelines, leather value chain stakeholders will be able to:

- Develop standard systems, methodology, and procedures that describe the way the company demonstrates traceability of material from suppliers, through its own manufacturing and on to customers
- Develop process flow procedures that allow control of batch materials to be followed through from input to completion of the process to ensure:
  - batch and exact supplier/ trader can be identified and/or
  - batch and group of suppliers/traders can be identified
  - onward traceability for customers, through outgoing documentation showing identification codes or serial numbers that correspond to the process batches and incoming identifiers
  - problem solving can be traced to specific batches and suppliers
- Incorporate international best available techniques for physical marking of material (i.e. stamps, laser, etc) to ensure traceability in their onward value chain
- Effectively track hides/skins from industrial and non-industrial slaughter, through raw hide traders
- Develop procedures for collection companies/traders/farmers to trace hides and skins to the slaughterhouse/abattoir/farm
- Attach sustainability performance to the leather value chain in a reliable way
- Understand the requirements of legislation

## 1.2 Project Significance

According to the FAO (Food and Agriculture Organisation of the United Nations)[i], the agricultural sector is of major social and economic importance in Pakistan contributing 22.9 per cent to the GDP, with livestock dominating the agricultural sector at 62 per cent, which equates to 14 per cent of overall GDP. In terms of employment, the agriculture sector is responsible for 37 per cent of the population. This sector is dominated by smallholder traditional farming systems, with unstructured slaughtering and processing, which can result in a mixed quality of skins and leather. In terms of livestock population, this is estimated at around 225 million with a value addition of approximately PKR 5.5 trillion in 2023. As part of the global leather value chain, the leather industry results in an additional USD 950 million in exports, making Pakistan the 4$^{th}$ largest leather apparel exporter. The earnings from these activities are undermined by the point of entry into the value chain, and although the production of raw hides and skins has increased, along with employment levels, profits have not shown the same trend. All stages of the Pakistan leather value chains have significant challenges compared to leading international leather manufacturing countries, for example, Italy, China, and Brazil. Constraints that have been identified, include limited market access, outdated technology systems, limited or outdated production equipment, processing skills, reputation and lack of compliance within the broader scope of the sector, resulting in limited growth.

The leather value chain faces increasing pressure regionally and internationally due to stricter regulations, linked to quality expectations, labour and equality laws, OHS (Occupational Health & Safety) standards and pollution control that are all growing requirements. This is due to stricter marketing drivers and as additional pre-requisite conditions, in order to operate with global brands and other international leather product markets. Many facilities in Pakistan are not adequately equipped to comply and cannot fulfil the high international technical product standards. In addition, many international business opportunities require the compliance of social and environmental standards through audit certification with companies such as the Leather Working Group and Sustainable Leather Foundation.

SMEs in the sector are constrained by insufficient resources and therefore lag in implementing processes and policies to meet the required standards. It is essential for enterprises to acquire and apply modern, more sustainable technologies to improve product design and quality within the processing stages, thus enhancing competitiveness through resource optimisation. In the tanning sector, enterprises can enhance their competitiveness through the application of cleaner technologies, improving production flow, reduction and recycling of water, alternative electricity generation and streamlining of industrial symbiotic systems. Along with the environmental and social improvements that are necessary, traceability and transparency are key components for the future supply of goods, as the era of accountability and responsibility within the entire value chain is realised. Through robust traceability and transparency, demonstration of good practice across all risk areas can be evidenced.

## 1.3 Benefits of Traceability and Transparency

Traceability and transparency have become critical components in the leather industry, addressing the growing demand for ethical sourcing, sustainable practices, and product quality assurance. These practices offer significant advantages that align with industry-specific challenges and opportunities. The ability to provide traceability and to be transparent will result in numerous benefits, including business sustainability, regulatory compliance, improved operational efficiency, improved supply chain management, risk management, innovation and competitive advantage, and customer trust.

### 1.3.1 Sustainability and Ethical Practices

Traceability supports sustainability in the leather industry by allowing companies to monitor the environmental impact of their supply chains, such as carbon emissions and water usage. It also helps to ensure that leather is sourced from animals raised in sustainable and humane conditions without the depletion of natural resources such as forests, energy, and water.

Transparency about environmental and social practices helps companies demonstrate their commitment to environmental and ethical standards, such as avoiding deforestation for cattle grazing and ensuring fair labour practices. Transparency is increasingly important for attracting customers and investors who prioritise sustainability

### 1.3.2 Regulatory Compliance

Traceability is crucial for meeting regulatory requirements in the leather industry, especially with the introduction of key EU directives such as the EUDR and the EU CSRD. The ability to trace and document the origin and movement of goods is becoming a mandatory requirement and is also a key tool for safe use of chemicals.

Transparency ensures that companies can clearly document and demonstrate compliance with environmental and labour laws and regulations, which is essential for operating in a global market that has stringent standards for leather goods.

### 1.3.3 Improved Operational Efficiency

Traceability in the leather industry allows for the monitoring of the entire production process, from the sourcing of animal hides and skins to the final tanning and finishing stages, and on to finished products. This capability ensures that any defects or issues such as quality inconsistencies or chemical contamination can be quickly identified and rectified, leading to higher product quality and consistency.

Transparency about the methods used in processing leather, such as the type of tanning chemicals or dyes, helps in setting clear standards and expectations, maintaining consistent quality, enabling continuous improvement and meeting customer expectations regarding product durability and safety.

### 1.3.4 Improved Supply Chain Management

Traceability enables leather manufacturers and brands to track hides and skins from their origin, through every stage of processing to the final product. This detailed oversight helps in managing inventory more effectively, reducing waste, and optimising the supply chain to ensure timely delivery and reduced environmental impact.

Transparency fosters stronger relationships with suppliers and partners by providing visibility into sourcing practices, such as ensuring that hides are obtained from animals that have been raised under humane conditions and have not been raised on deforested land. Transparency also supports ethical sourcing practices which are increasingly demanded by consumers.

### 1.3.5 Risk Management

Traceability helps in quickly identifying and isolating defective or non-compliant leather batches, faulty products, or unethical sourced material, minimising the impact of sustainability risks and customer dissatisfaction.

Transparency reduces risks by enabling stakeholders, including consumers and regulators, to anticipate and respond to potential problems proactively. Clear information about sourcing and production processes can prevent misunderstandings and manage public perception effectively.

### 1.3.6 Innovation and Competitive Advantage

Traceability data in the leather industry provides valuable insights that can drive innovation, such as development of new tanning methods that reduce environmental impact or creating leather products that are fully traceable from farm to store. This has benefits through product development, process optimisation, and customer service.

Transparency differentiates leather brands in the marketplace. Consumers and partners are more likely to engage with companies that provide clear and honest information about their products' origins, processing and impact, giving these companies a competitive edge. Consumers and investors increasingly prefer to engage with companies that operate with openness and integrity.

### 1.3.7 Customer Trust and Brand Loyalty

Traceability allows consumers to verify the origin and processing methods of the leather products they purchase, ensuring they are making informed choices that align with their values, such as avoiding products that are linked with deforestation and unethical labour practices.

Transparency about sourcing, animal welfare and environmental practices builds consumer confidence. Customers are increasingly concerned with the ethical implications of their purchases and are more likely to trust and remain loyal to brands that are open about their processes and commitment to sustainability.

In the leather industry, traceability and transparency are not just beneficial, they are becoming essential. Implementing traceability and transparency addresses the increasing demand for ethical, sustainable and high-quality products, while also supporting regulatory compliance and risk management. As consumers and markets continue to prioritise sustainability and ethical sourcing, the relevance of traceability and transparency in the leather industry will only grow, making them key components of successful business strategies for the future.

# 2
# MARKET RESEARCH

# 2 MARKET RESEARCH

## 2.1 Survey

As part of the development of these guidelines, a survey was conducted of leading leather manufacturers that are in current operation in Pakistan. These companies were selected based on their existing exposure to international markets and expectations of brands.

The aim of the survey was to understand how these companies manage traceability of raw materials currently, from procurement to finished products, as well as their preparedness for international regulatory requirements that are being introduced.

The survey was sent out to 30 leading organisations and 21 responses were received, representing a 70 per cent response rate and sample size. The results of the survey are detailed below.

### 2.1.1 Raw Material Type

The survey encompassed responses from a diverse array of companies engaged in the transformation of raw materials [cow hides, buffalo hides, deer skins, goat/sheep skins and kangaroo skins] into finished leather goods. The largest proportion of input material is cow hides, goat/sheep skins and buffalo. This is an important statistic as compliance for the EU Deforestation Regulation is specifically related to cow cattle hides and therefore the largest proportion of input material will be subject to EUDR for any export into the EU. See figure 1.

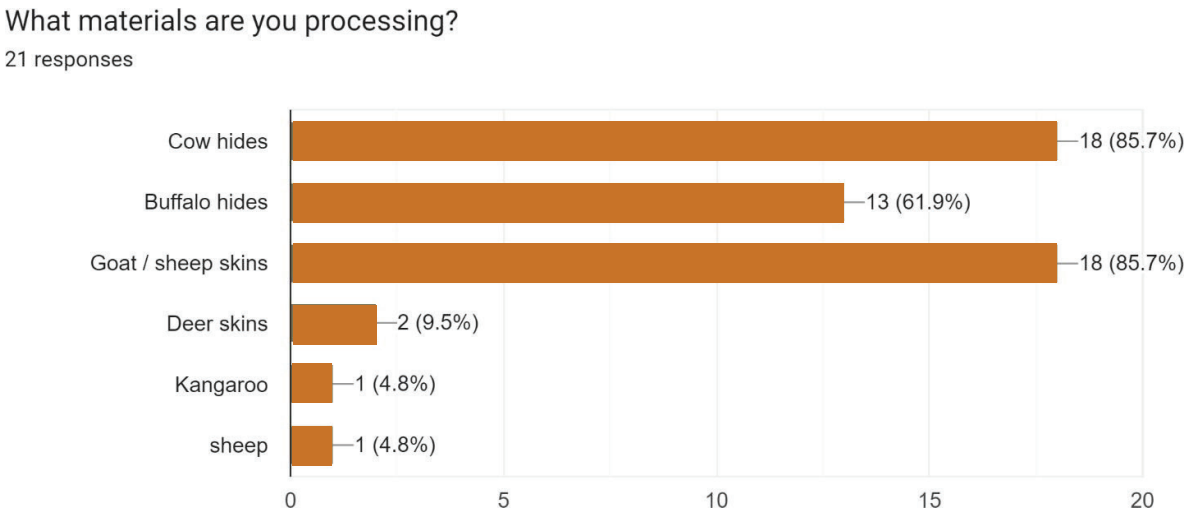



Figure 1 Distribution of Raw Material Types Used in Leather Production

### 2.1.2 Raw Material Origin

The companies surveyed are situated in various regions of Pakistan and source their raw materials from local suppliers at 9.5 per cent, national suppliers at 90.5 per cent, and international suppliers at 19 per cent. When considering traceability and transparency it will be necessary for leather manufacturers in Pakistan to also ensure the provenance of the material that they are importing, to ensure there is no embedded sustainability risk in that supply, as they will assume that risk profile with any onward sale of material. See figure 2

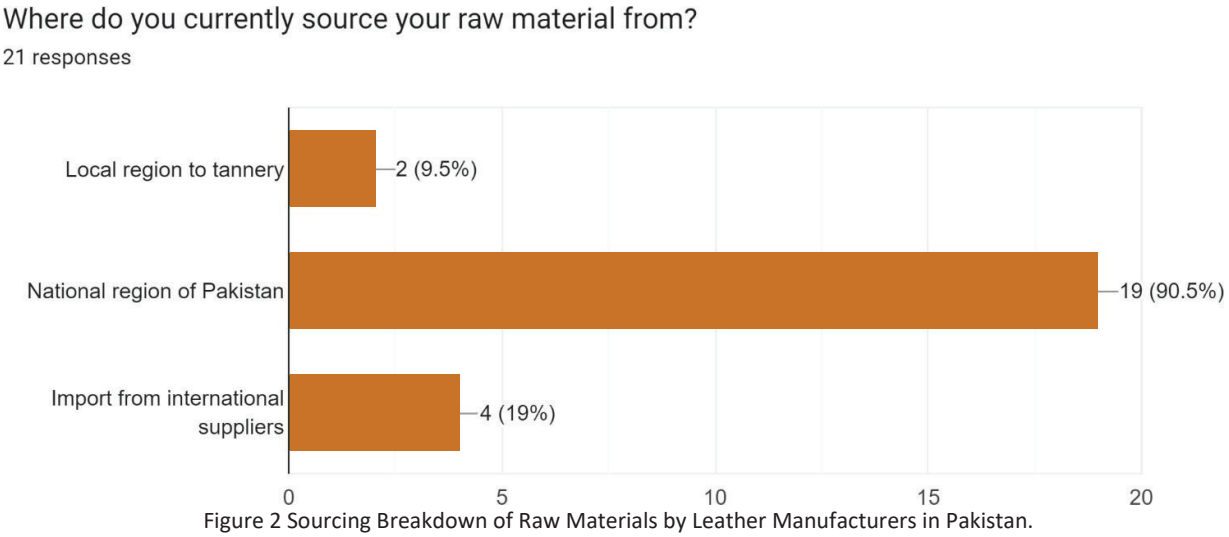


Figure 2 Sourcing Breakdown of Raw Materials by Leather Manufacturers in Pakistan.

### 2.1.3 Range of Operations

When evaluating the range of operations conducted by the surveyed organisations, 85.7 per cent of the respondents are full-service facilities, manufacturing from raw material to finished leather. This is advantageous when establishing traceability as there are less exchanges of ownership to consider and record. See figure 3.

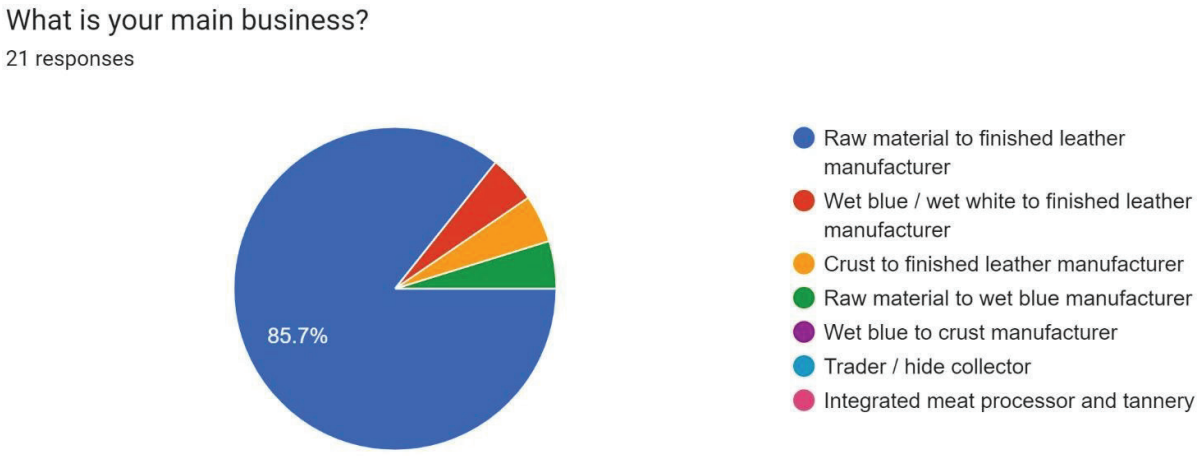


Figure 3 Operational Scope of Surveyed Leather Manufacturers.

### 2.1.4 Annual Production Volume

Production volumes varied between companies, from just under 1 million sq ft per annum up to 17 million sq ft per annum. Cumulatively, the 21 respondents are responsible for approximately 105 million sq ft per annum of leather produced.

### 2.1.5 Existing Traceability

When asked whether current suppliers to the company have traceability in place, 90.5 per cent of responses indicated that traceability is only available to the local hide trader. Only one respondent had a supplier with traceability back to specific farms. See figure 4.

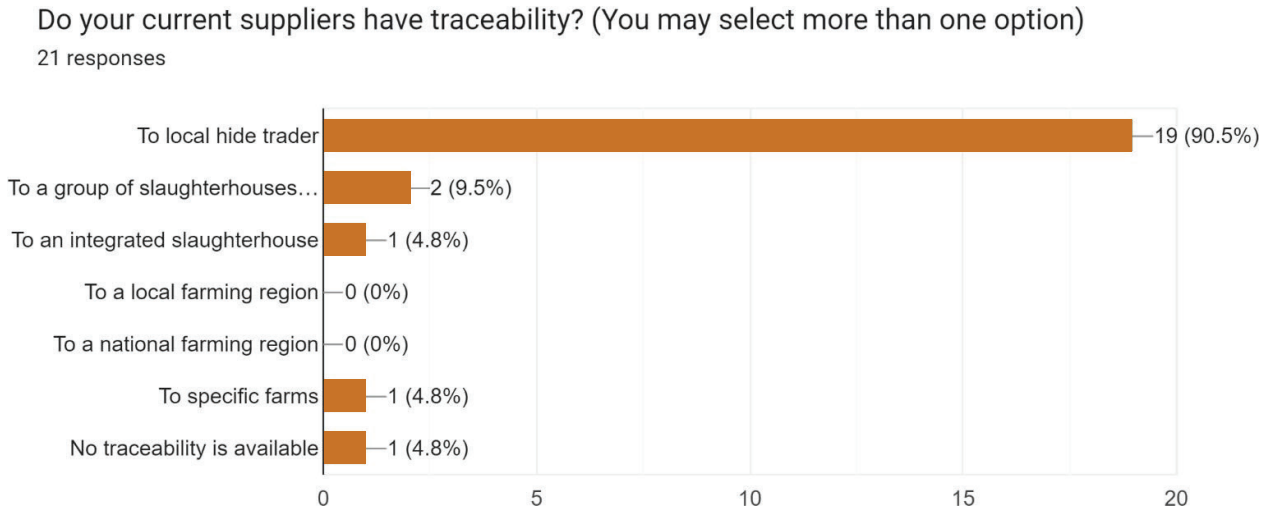



*Figure 4 Traceability Levels Within Current Supply Chains*

### 2.1.6 Physical Marking of Material

Respondents were asked whether any of the incoming material has physical marking on the hides/skins. Only one respondent said yes, the other 20 (95.2 per cent) said that there was no physical marking. When asked whether the companies themselves added a physical mark at incoming to their facility to aid onward traceability, the response was much better with 42.9 per cent applying a physical mark such as a stamp to their material. See figure 5 and 6.

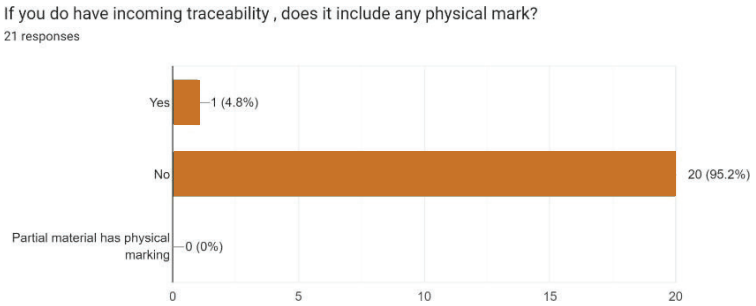



Figure 6 Presence of Physical Markings on Incoming Hides/Skins

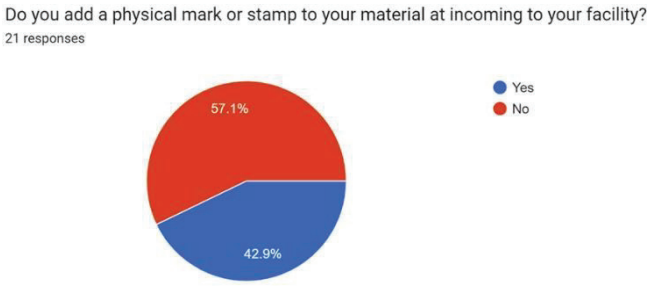



Figure 5 Application of Physical Markings by Companies at Entry

### 2.1.7 Export of Material

When considering how much material is destined for the export market, 47.6 per cent of respondents said they work for the export market; with a further 47.6 per cent responding that they serve both domestic and international markets. Only 4.8 per cent of respondents said they do not export. This is an important barometer for the need to introduce traceability and transparency to the leather industry in Pakistan, as it will become increasingly compulsory to meet regulatory and consumer requirements. See figure 7.

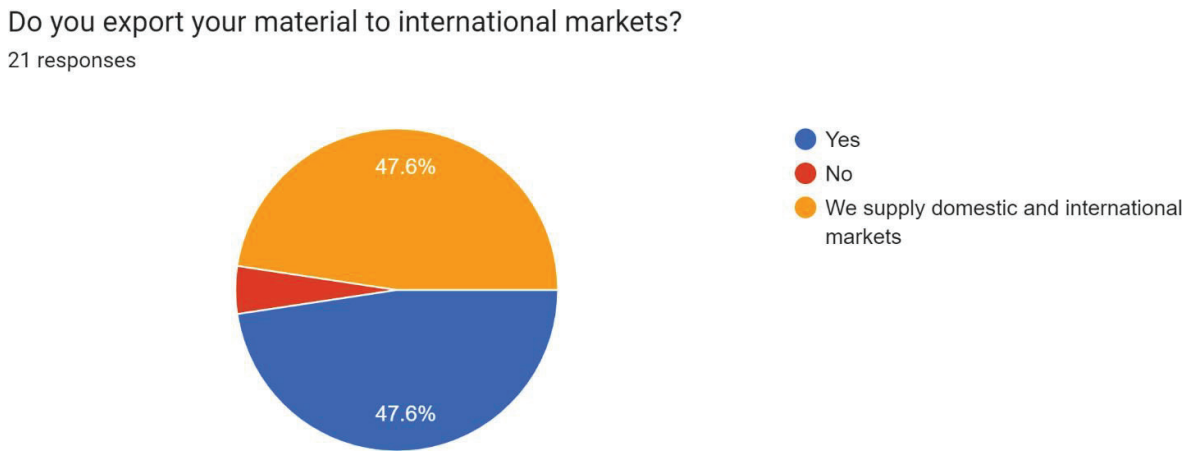



Figure 7 Market Orientation of Surveyed Leather Manufacturers

### 2.1.8 Export Regions

Even more crucial is that 20 per cent of exports are directed to Europe. In December 2024, the European Union granted an additional 12-month phasing-in period, making the regulation applicable from 30 December 2025 for large and medium-sized companies, and from 30 June 2026 for micro and small enterprises. This regulation will prohibit the import of any commodity that cannot demonstrate a deforestation-free supply chain. Further details on the upcoming regulations can be found in Section 8 of these Guidelines (see Figure 8).

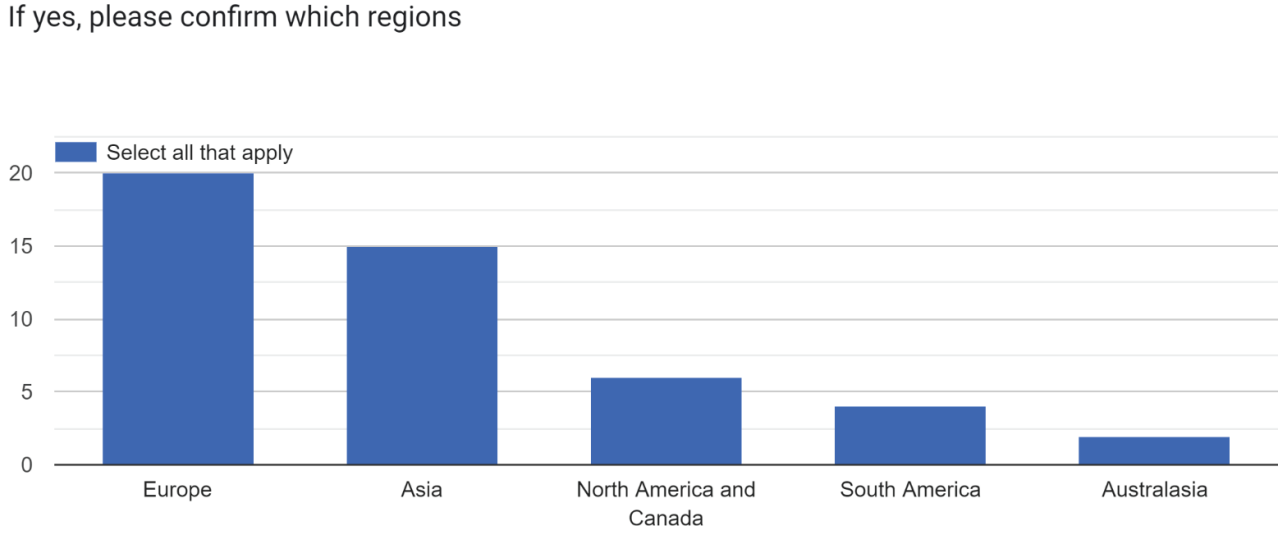



Figure 8 Export Destinations of Pakistan's Leather Industry

### 2.1.9 Evidence of Traceability

When asked whether customers are asked for evidence of traceability, the responses indicated that 90.5 per cent of companies were being asked for some traceability evidence, with only 4.5% saying no traceability was required. This is consistent with the companies who are only working with the domestic market. See Figure 9.

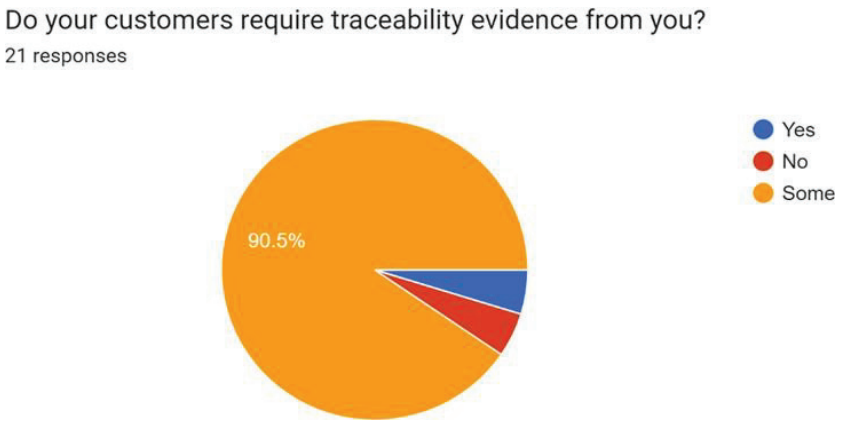



Figure 9 Customer Demand for Traceability Evidence

### 2.1.10 Understanding of EUDR

When asked whether the companies understood the requirements, the largest majority at 47.6 per cent said no, they didn't. 42.9 per cent of respondents said they did understand the requirements, with a smaller 9.5 per cent having some understanding but could benefit from more information. See figure 10.

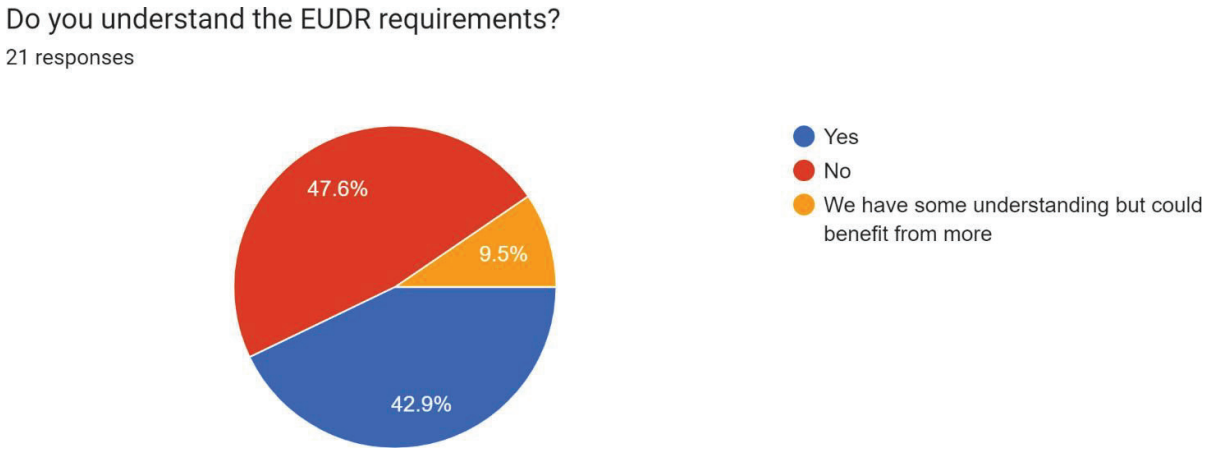



Figure 10 Understanding of Traceability and Regulatory Requirements

### 2.1.11 Preparedness for compliance with EUDR

The responses indicated that 90.5 per cent of the companies who took part in the survey are getting prepared now, with only 4.5 per cent being very prepared. However, it was positive to note that none of the respondents felt completely unprepared. See Figure 11.

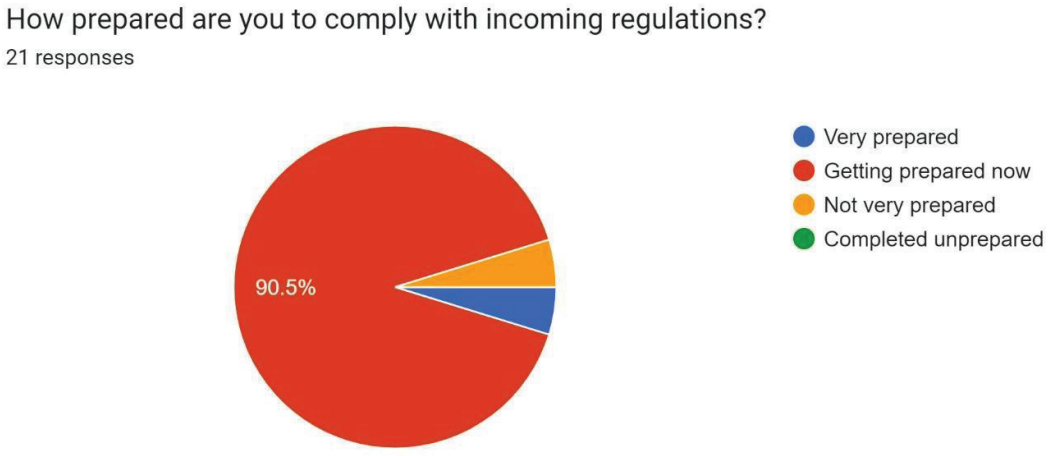



*Figure 11 Preparedness of Leather Manufacturers for Traceability and Regulatory Compliance*

### 2.1.12 Current Mechanisms for Traceability

This was an open question for free text and the responses indicated that currently hides are given a code on arrival to the facility that indicates where the material has come from. Onward tracking is kept with this same code for onward traceability.

### 2.1.13 Key Concerns

Respondents were again given the free text opportunity to highlight any concerns over meeting international demands of traceability. Here the majority of responses indicated that the single biggest concern was the upstream movement of cattle through informal slaughter. Most consider that the downstream traceability can be done.

### 2.1.14 Support Required

When asked what support companies would like to see, the majority of responses centered around Government and NGO support to implement traceability systems for the upstream part of the supply chain. The leather manufacturers have traceability, but the livestock part of the supply chain does not. More details on the free text responses are included in the findings and recommendations below.

### 2.1.15 Survey Findings

- **Fragmented Supply Chains:** One of the primary challenges identified is the fragmented nature of the supply chain within the Pakistani leather industry. This fragmentation, characterized by numerous small-scale suppliers and subcontractors, complicates the accurate tracing of raw material origins and processing history.
- **Data Security and Privacy Concerns:** Suppliers and subcontractors often express reluctance to disclose detailed information about slaughterhouse locations and other sensitive data, citing concerns about data security and privacy.
- **Understanding of Requirements:** Most surveyed companies have a basic understanding of international traceability requirements, including those stipulated under regulations such as the European Union Due Diligence Regulation (EUDR).
- **Preparedness Initiatives:** While companies are generally aware of the impending regulatory landscape, many are currently in the process of enhancing their internal systems and procedures to align with forthcoming requirements. This includes adopting more robust traceability measures and improving documentation practices.
- **Demand for Traceability:** While not universally mandated, there is increasing pressure from international customers for traceability evidence. This demand is driving companies to implement more comprehensive traceability mechanisms to meet market expectations.

### 2.1.16 Survey Recommendations:

- **Government and Industry Collaboration:** There is a clear need for collaboration between governmental bodies, industry associations, and NGOs to develop and enforce stricter regulations related to traceability. This includes establishing standardised practices and providing support for supplier training initiatives and implementation.
- **Standardisation Efforts:** Standardising traceability practices across the industry could mitigate current challenges associated with the fragmented supply chain. This would involve creating unified guidelines and protocols that ensure transparency and accountability throughout the supply chain. See section 9 for Support Organisations and Initiatives.

- **Training and Capacity Building:** Providing comprehensive training programs for suppliers and subcontractors on traceability standards and best practice is essential. This would not only enhance compliance with international regulations but also improve the overall reliability and integrity of traceability data.

### 2.1.17 Survey Conclusion

The survey underscores a significant commitment within the Pakistan leather industry that already exists to improve traceability practices, driven by both market demands and impending regulatory requirements. Addressing challenges such as the fragmented supply chain and data security concerns will be pivotal in fostering sustainable and transparent practices across the sector. These guidelines should be considered as a foundation for engaging at governmental and NGO level for financial and training support to implement the traceability and transparency that will be a necessity of the future.

## 2.2 Current Traceability Examples

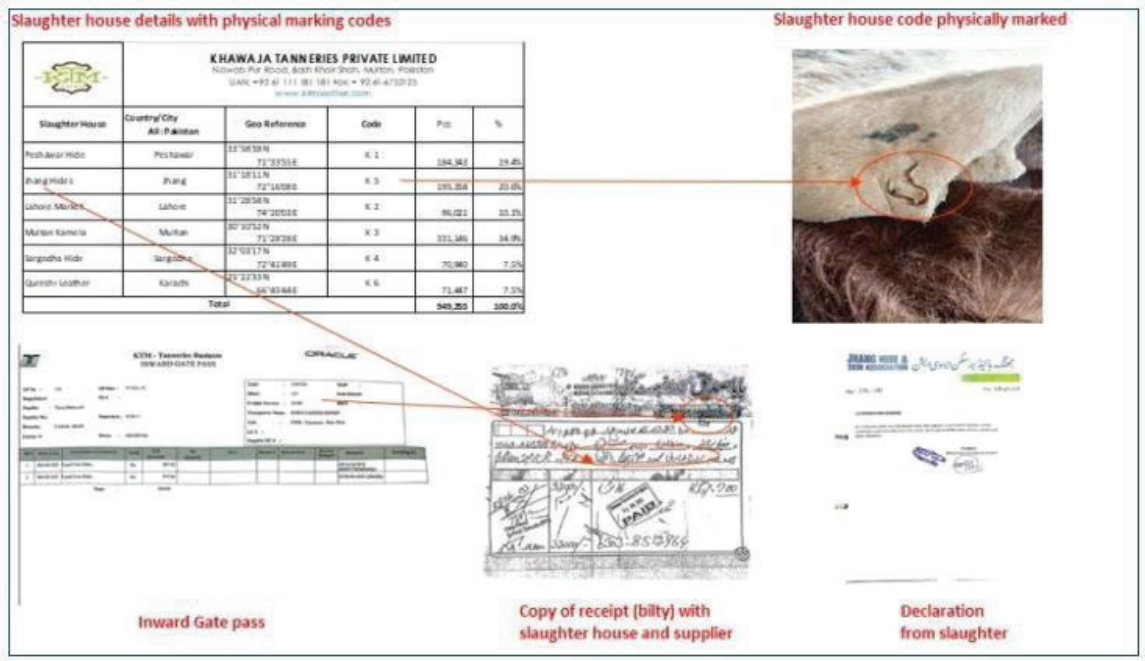
### 2.2.1 Documentation and Tracking Systems

There are many organisations in Pakistan that have standardised systems for traceability in place currently. These are generally based around:

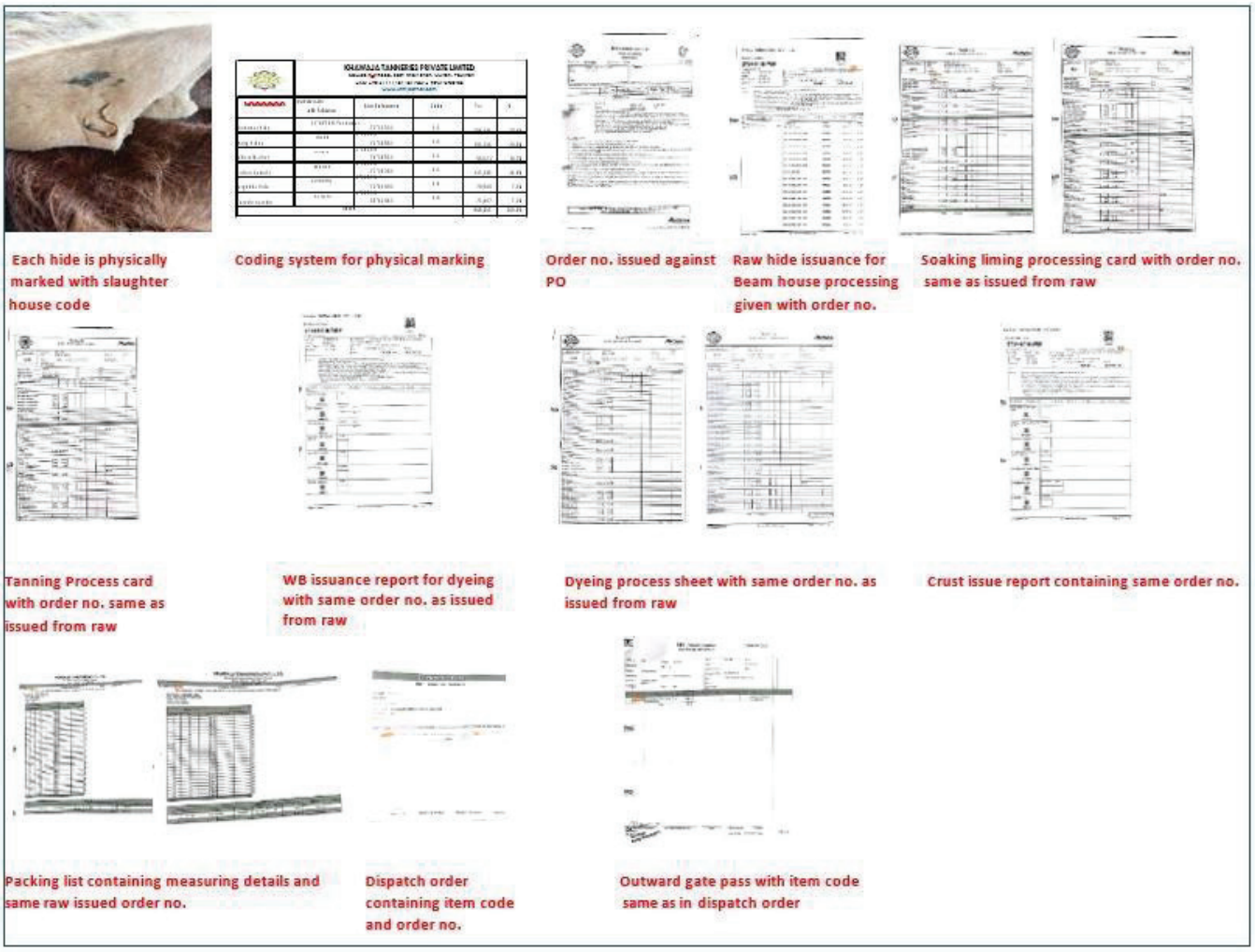
- **Inward Gate Pass (IGP) Numbers:** This involves assigning unique IGP number to incoming raw materials, that are then documented and tracked throughout the production process.
- **Lot Numbers:** Lot numbering systems are used extensively, where each batch of raw material is assigned a specific lot number that facilitates traceability through subsequent processing stages.
- **Physical Marking:** Some companies physically mark or punch hides with supplier codes or lot numbers upon receipt. This physical marking serves as a tangible identifier throughout the manufacturing process.

**Example 1:**

Incoming Traceability - Slaughterhouse



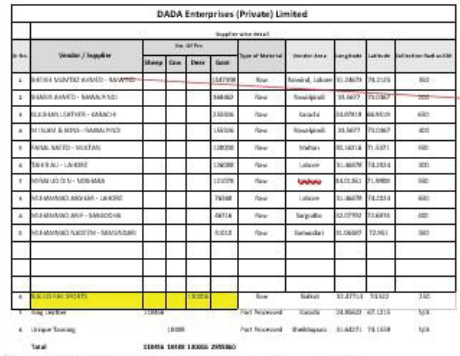
Outgoing Traceability




In the above example the total hides are purchased from six different slaughterhouses, and they are physically marked according to the coding system given in a standard operating procedure (SOP). The slaughterhouses give confirmation letters for the supply of the hides along with a receipt (Bilty) which contains the slaughterhouse name, address, and supplier name. This enables traceability back to the slaughterhouse. For outgoing traceability, the code that is punched on the raw hide is documented in each piece of paperwork involved in the processing of the material (e.g. recipe sheets, lot cards, travel cards, and gate passes). This enables the continuation of traceability from the slaughterhouse through process and onward to the customer.

**Example 2:**

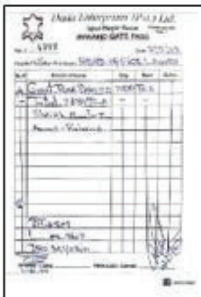
Incoming Traceability – Direct Suppliers




Supplier details with geo-referenced locations

Inward gate pass with supplier name & area mentioned

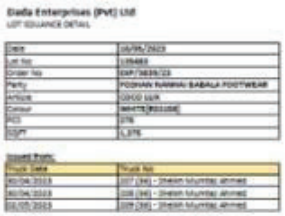
Outgoing Traceability



Inward gate pass showing raw supplier details along with truck/sale code no.

The sale/truck no. can be traceable to liming process card

The sale/truck no. can be traceable to the tanning process card

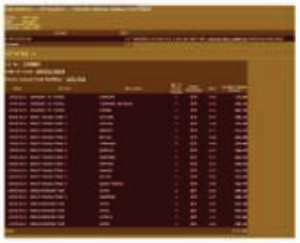


The new lot number issued for retanning & dyeing. The truck/sale code no. can be traced through ERP system.

Process card for machine operations required have the same batch/lot no.

The dyeing recipe card having the same lot no.

The finish process card with same lot no. mentioned



The produced lot now has the shipment no. mentioned in the packing dept. which can be traced through ERP system

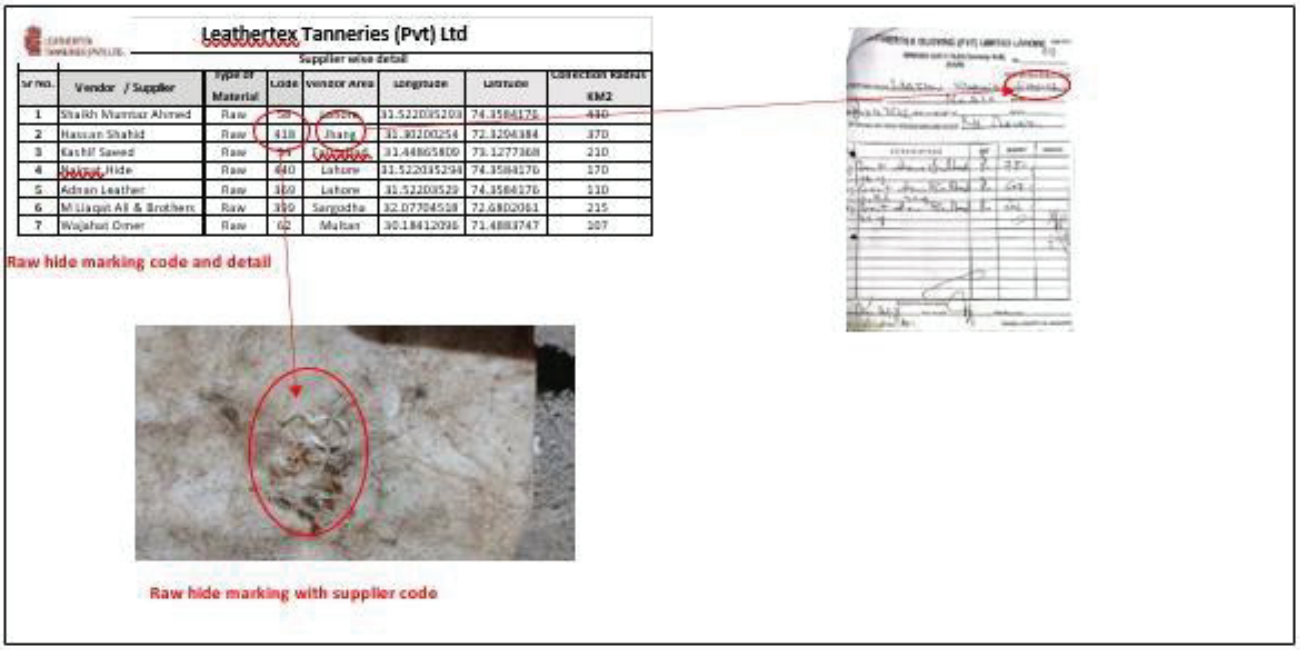
The packing list has the shipment no. mentioned

The outward gate pass has the shipment number mentioned on it.

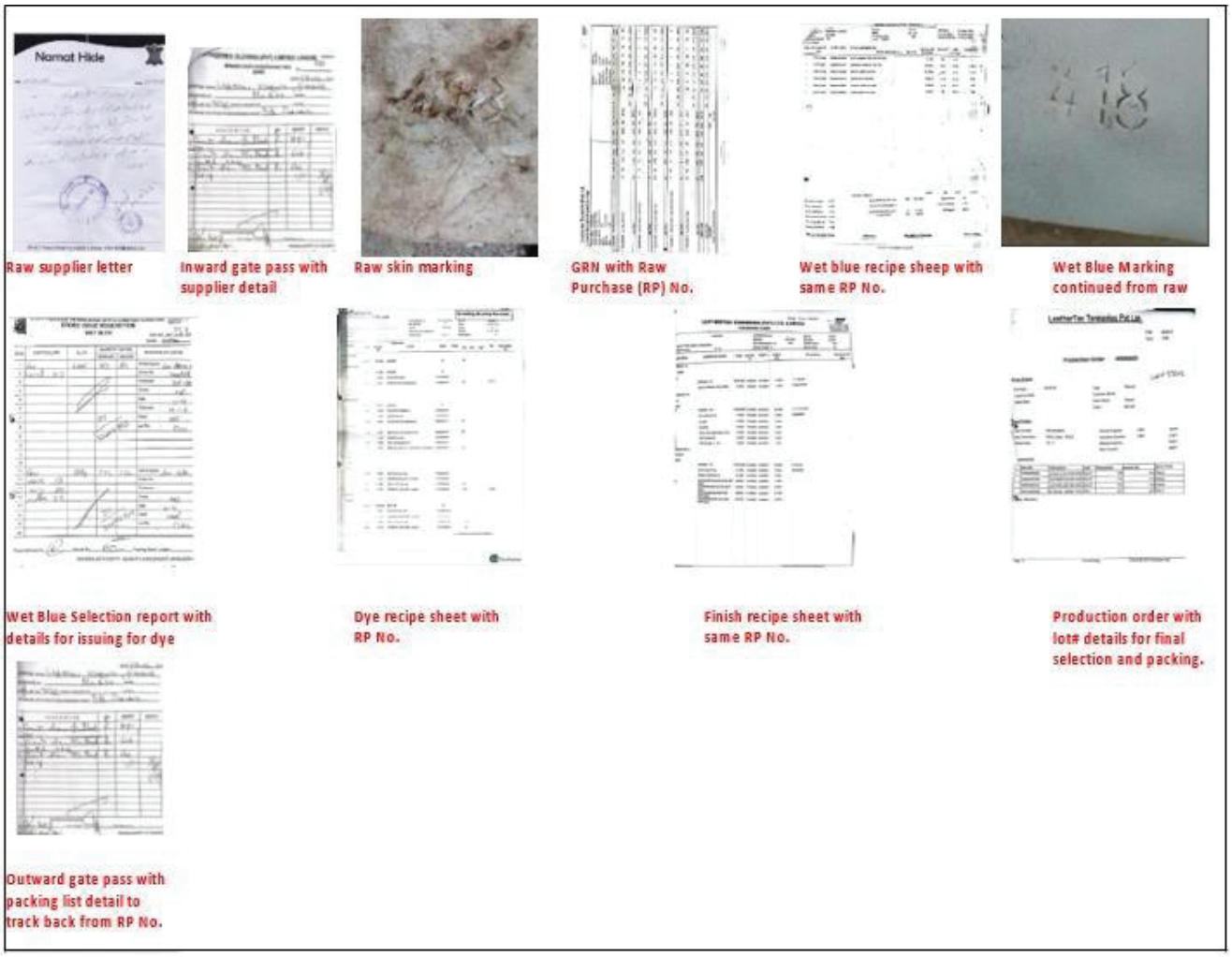
The total hides in the above example were purchased from the 11 different suppliers and national regions. This is entered on the inward gate pass and includes truck no (sale code no. of raw material) which is also entered in the organisation's Enterprise Resource Planning (ERP) system. This sale code no. contains supplier name, address, and geographical location. For outgoing traceability, the sale code that is entered in ERP system continues to be documented in each piece of paperwork involved in the processing of the material (e.g. recipe sheets, lot cards, travel cards, and gate passes etc.) and is issued through ERP system. This enables the continuation of traceability from the incoming supplier of raw material through process and onward to the customer.

**Example 3:**

Incoming Traceability – Direct suppliers regional



Outgoing Traceability:




In the above example, the total hides are purchased from seven different suppliers and national regions. They are physically marked according to the coding system given in the organisation's SOP. For outgoing traceability, the code that is punched on raw hide along with each batch is given a lot number and related to ERP system, the supplier code is also detailed (as Raw Purchase (RP) on all process sheets, giving batch level traceability back to a specific supplier.

# 3
# LIVESTOCK TYPES SPECIFIC TO PAKISTAN

# 3 LIVESTOCK TYPES TO PAKISTAN:

Pakistan is an agriculturally rich country with a diverse range of livestock that plays a critical role in its economy, culture, and rural livelihoods. The livestock sector contributes significantly to the national GDP, providing food, employment, and raw materials for various industries. The key types of livestock in Pakistan include cattle, buffalo, sheep, goats, camels (and poultry), each with unique characteristics and regional significance.

1. **Cattle:** According to the Ministry of National Food Security and Research within the Government of Pakistan[ii], the estimated population of Cattle for 2023-2024 is 57.5 million, second to Goats in number.

- **Breeds**: Prominent cattle breeds in Pakistan include Sahiwal, Red Sindhi, and Tharparkar. These breeds are known for their milk production and adaptability to the local climate.
- **Uses:** Cattle are primarily raised for milk production, which is a major source of income for rural households. They are also used for meat production and hides, as well as draught (working) animals in agricultural practices.

2. **Buffalo:** The estimated population of buffalo in Pakistan for the 2023-24 year is 46.2 million head, which represents the third largest type of livestock currently being raised.

- **Breeds**: The Nili-Ravi and Kundi are the most common buffalo breeds in Pakistan. Nili-Ravi, also known as the “black gold” of Pakistan, in particular, is renowned for its high milk yield.
- **Uses:** Buffaloes are mainly raised for dairy production, contributing more than 60% of the country's milk supply. Their milk is rich in fat, making it highly valued in the dairy industry. They are also an important source of meat and hides.

3. **Sheep:** With an estimated population of 32.7 million sheep in Pakistan for the 2023-24 year, this accounts for the 4$^{th}$ largest livestock sector.

- **Breeds:** Pakistan has several indigenous sheep breeds, including Lohi, Kajli, Thalli, and Kaghani. These breeds are well-suited to the diverse climatic conditions of the country.
- **Uses:** Sheep are primarily raised for wool, meat (mutton), and in some cases, milk. They play a vital role in the livelihood of pastoral communities, especially in arid and semi-arid regions, with sheepskin an important commodity post-life.

4. **Goats:** Representing the largest population of livestock with an estimate 87 million goats in the year 2023-24.

- **Breeds:** Notable goat breeds in Pakistan include Beetal, Kamori, and Pateri. These breeds are known for their high reproductive rates and adaptability to various environments.
- **Uses:** Goats are an important source of meat (chevon), milk, and hides. They are widely kept by small farmers due to their low maintenance costs and high economic returns.

5. **Camels:** Smaller in number, the estimated population in 2023-2024 is still significant at 1.2 million head.

- **Breeds:** The Sindhi and Pishin are the main camel breeds, primarily found in arid regions like Balochistan and Sindh.

- **Uses:** Camels are multipurpose animals used for transportation, milk, and meat production. Camel milk is gaining recognition for its nutritional value. The hide can be utilised for durable leather, although none of the surveyed organisations listed camel as a material they are working with currently.

6. **Asses (Donkeys):** Ranked 5th in terms of population size for the 2023-24 year, there was approximately 5.9 million head. Although not used for leather, asses (donkeys) contribute to the livelihoods of many rural households by providing essential transport and labour services, which are often vital for small-scale farmers and traders.
   - **Breeds:** While specific breeds are not as well-defined as other livestock, donkeys in Pakistan are generally hardy animals adapted to local conditions.
   - **Uses:** Asses are primarily used as working animals, especially in rural and mountainous areas. They are essential for transportation, carrying goods, and agricultural labor. Their role is particularly important in areas where mechanized transport is not feasible.

Poultry livestock was not considered for these guidelines as this is out of scope.
Livestock is integral to Pakistan's agriculture, providing essential products like milk, meat, wool, hides and skins, while also supporting the livelihoods of millions of people. The diversity of livestock breeds in Pakistan reflects the country's varied climatic zones and cultural practices, making the sector vital for economic development and food security. As Pakistan continues to modernize its agriculture, the livestock sector remains a key area of focus for enhancing productivity and sustainability.
The extended production volumes of livestock by-products are estimated by the Ministry of National Food Security & Research within the Government of Pakistan, as detailed in the table below. The livestock and by-products data growth projections and cross-sector value for food and economic growth emphasises the need to support the sector to meet international standards and regulation to protect the future of the industry and associated revenue for Pakistan.

Table 1 Estimated Livestock Products Production

**Table 2.7: Estimated Livestock Products Production**

| Products | Units | 2021-22[1] | 2022-23[1] | 2023-24[1] |
|---|---|---|---|---|
| Eggs | million Nos. | 22,512 | 23,819 | 25,212 |
| **Hides** | **000 Nos.** | **19,384** | **20,039** | **20,717** |
| Cattle | 000 Nos. | 10,127 | 10,509 | 10,905 |
| Buffalo | 000 Nos. | 9,142 | 9,414 | 9,694 |
| Camels | 000 Nos. | 115 | 117 | 118 |
| **Skins** | **000 Nos.** | **62,250** | **63,697** | **65,181** |
| Sheep Skin | 000 Nos. | 12,088 | 12,231 | 12,376 |
| Goat Skin | 000 Nos. | 31,784 | 32,645 | 33,530 |
| Fancy Skin | 000 Nos. | 18,377 | 18,821 | 19,275 |
| Lamb Skin | 000 Nos. | 3,590 | 3,633 | 3,676 |
| Kid Skin | 000 Nos. | 14,787 | 15,188 | 15,599 |
| Wool | 000 Tonnes | 48.4 | 49.0 | 49.6 |
| Hair | 000 Tonnes | 31.0 | 31.8 | 32.7 |
| Edible Offal's | 000 Tonnes | 465 | 478 | 492 |
| Blood | 000 Tonnes | 77.0 | 79.0 | 81.0 |
| Casings | 000 Nos. | 62,888 | 64,351 | 64,851 |
| Guts | 000 Nos. | 20,599 | 21,292 | 22,009 |
| Horns & Hooves | 000 Tonnes | 68.2 | 70.2 | 72.3 |
| Bones | 000 Tonnes | 1,020.7 | 1,052.0 | 1,084.3 |
| Fats | 000 Tonnes | 322.9 | 332.5 | 342.5 |
| Dung | 000 Tonnes | 1,448 | 1,493 | 1,540 |
| Urine | 000 Tonnes | 437 | 450 | 464 |
| Head & Trotters | 000 Tonnes | 290.4 | 298.7 | 307.2 |

The Government of Pakistan in their published report states that [iii] "The government has recognized the inherent potential of this sector for economic growth, food security, and poverty alleviation in the country and has accordingly focused on its development. The overall strategy for livestock development revolves around promoting private sector-led development with the public sector providing an enabling environment through policy interventions."

It will be an important element for government, private sector, and NGO/associations to work together to support the implementation of systems that will enable the leather industry to meet the regulatory requirements. The starting point for this is traceability.

# 4
# PREVALENT FARMING SYSTEMS AND CHARACTERISTICS

# 4 PREVALENT FARMING SYSTEMS AND CHARACTERISTICS

Livestock farming is a critical component of Pakistan's agricultural sector, contributing significantly to the country's economy and food security. Pakistan has diverse livestock farming systems that vary by region, climate, and socio-economic factors. The major livestock farming systems in Pakistan include smallholder subsistence farming, commercial livestock farming, pastoralism, and mixed farming systems. Each of these systems has unique characteristics and plays a vital role in rural livelihoods and the overall agricultural landscape.

## 4.1 Smallholder Subsistence Livestock Farming

### 4.1.1 Characteristics

This system is characterised by small-scale livestock rearing, primarily aimed at meeting household needs for milk, meat, and draft (working) power.

Farmers typically own a few animals, such as cattle, buffaloes, goats, or sheep, and rely on traditional methods for feeding, breeding, and healthcare.

Livestock is often an integral part of the household economy, providing food, income from surplus products, and manure for crop production.

Management practices are largely traditional, with limited use of modern veterinary services or commercial feeds.

Slaughtering of animals is generally shaped by religious practices, with traditional halal slaughtering being the most common in rural areas and during religious festivals like Eid-ul-Adha.

### 4.1.2 Regions

Smallholder subsistence farming is prevalent in rural areas across Pakistan, particularly in regions with small landholdings, such as parts of Khyber Pakhtunkhwa, Balochistan, and the less fertile areas of Punjab and Sindh.

## 4.2 Commercial Livestock Farming

### 4.2.1 Characteristics

Commercial livestock farming involves large-scale operations focused on producing livestock products for sale in domestic and international markets.

These farms are more specialised and may focus on dairy, meat production, or poultry farming. They use modern technologies, including improved breeds, commercial feeds, and veterinary care, to maximize productivity.

Commercial dairy farms often use high-yielding buffalo and cattle breeds, with a high level of mechanization and automation.

The goal is to achieve economies of scale, with a focus on profitability and efficiency.

Commercial facilities will adopt mechanical slaughtering involving the use of machines to perform the act. This is less common in Pakistan but the process will still adhere to halal principles.

### 4.2.2 Regions

Commercial livestock farming is concentrated in more developed regions with better infrastructure, such as Punjab and Sindh, where access to markets, veterinary services, and feed supplies is more readily available.

## 4.3 Pastoralism

### 4.3.1 Characteristics

Pastoralism is a traditional form of livestock farming practiced by nomadic or semi- nomadic communities, where herders move with their animals in search of grazing lands and water.

This system is particularly suited to arid and semi-arid regions, where crop farming is challenging. Livestock such as camels, sheep, and goats are predominant, and the herders often rely on extensive grazing rather than cultivated fodder.

Pastoralists have deep knowledge of managing livestock under harsh conditions, but the system is vulnerable to climatic changes, land degradation, and conflicts over grazing rights.

### 4.3.2 Regions

Pastoralism is common in Balochistan, the Thar Desert in Sindh, and the Cholistan Desert in Punjab, as well as the dry mountainous regions of Khyber Pakhtunkhwa and Gilgit-Baltistan.

## 4.4 Mixed Farming Systems

### 4.4.1 Characteristics

Mixed farming integrates livestock rearing with crop production, creating a symbiotic relationship where each component supports the other.

Livestock provides manure for crops, while crop residues and by-products serve as fodder for animals. This system promotes resource efficiency and sustainability.

Farmers may keep a variety of livestock, including cattle, buffaloes, goats, and poultry, alongside growing food and cash crops.

Mixed farming is typically practiced on small to medium-sized farms and is well- suited to areas with moderate agricultural potential.

### 4.4.2 Regions

Mixed farming systems are widespread in Punjab and Sindh, where the availability of water and fertile land supports both livestock and crop farming.

## 4.5 Agro-Pastoral Systems

### 4.5.1 Characteristics

Agro-pastoral systems are a blend of crop cultivation and extensive livestock rearing, mainly practiced in areas where agriculture alone is not viable due to climatic conditions.

Livestock, particularly hardy breeds like camels, goats, and sheep are the primary source of income. These animals are well-adapted to harsh environments and can survive on sparse vegetation.

Crop cultivation, when feasible, focuses on drought-resistant varieties, with livestock providing essential nutrients for the soil.

### 4.5.2 Regions

Agro-pastoral systems are found in Balochistan, Cholistan, and the desert regions of Sindh, where the land is more suited to grazing than intensive farming.

## 4.6 Slaughtering Practices

Slaughtering practices in Pakistan are deeply influenced by cultural, religious, and economic factors. Given that Pakistan is a predominantly Muslim country, the slaughtering of livestock must adhere to Islamic guidelines, which are central to ensuring that meat is halal (permissible) for consumption. The methods of slaughtering livestock in Pakistan include traditional halal slaughtering, mechanical slaughtering, and practices at modern slaughterhouses. These methods vary in terms of scale, technology, and adherence to hygiene standards.

Traditional halal slaughtering is the most common method in Pakistan and involves manually making a swift deep incision across the throat to sever the carotid artery, jugular vein, and windpipe. This ensures rapid blood loss and quick death, which is a requirement for halal meat. The animal must be alive and healthy at the time of slaughter and the name of Allah (“Bismillah Allahu Akbar”) is invoked before the incision is made.

Traditional halal slaughter is typically carried out by a trained individual, often a butcher, who follows religious protocols. However, this can vary in rural or remote regions, and hygienic conditions can vary significantly, especially in unstructured settings.

Traditional halal slaughter is typically done in local markets, rural areas or in homes and smallholdings during religious festivals. The meat is often consumed locally or sold in nearby markets.

In larger facilities, particularly those dealing with commercial meat production or export, mechanical slaughtering may be used for larger numbers of animals in a shorter time period. However, this method is less common and will still uphold the halal principles. There are approximately 35-40 commercial slaughterhouses in Pakistan, however, they do not operate at capacity due to the long distances from the local farms in rural areas. Small traditional abattoirs are in the region of 7000 registered, (plus an unknown number of unregistered abattoirs) and these vary widely in terms of size, capacity, infrastructure, hygiene, and animal welfare. This will be discussed in more detail in the Gaps and Challenges chapter of this report.

Livestock farming in Pakistan is diverse, encompassing a range of systems that reflect the country's varied geography and socio-economic conditions. From smallholder subsistence farms to large commercial operations and traditional pastoralism, these systems are crucial for sustaining rural livelihoods and contributing to the national economy. Understanding the characteristics and regional distribution of these livestock farming systems is essential for developing targeted policies that not only enhance productivity, sustainability, and resilience in Pakistan's livestock sector, but also meet the compliance requirements in regulation for the international markets.

# 5
# GAPS AND CHALLENGES FOR TRACEABILITY IN PAKISTAN

# 5 GAPS AND CHALLENGES FOR TRACEABILITY IN PAKISTAN

The leather industry in Pakistan is a significant contributor to the economy, particularly in terms of exports. However, the industry faces several gaps and challenges related to traceability and transparency, which are essential for meeting international standards and regulation, ensuring product quality, and enhancing competitiveness in global markets. Below are the key gaps and challenges:

## 5.1 Lack of Standardized Traceability Systems

- **Challenge:** The absence of standardised traceability systems across the leather supply chain is a major challenge. Different stages of the leather production process, from livestock farming to tanning and manufacturing, often operate independently with minimal coordination.

- **Impact:** This lack of standardisation makes it difficult to track the origin and quality of raw materials, leading to inconsistencies in product quality and difficulty in meeting international standards and regulation.

## 5.2 Limited Technological Adoption

- **Challenge:** There is limited adoption of modern technology, such as RFID tags, blockchain, and digital databases, which are crucial for effective traceability.

- **Impact:** The reliance on manual record-keeping and outdated systems hampers the ability to accurately track and trace products through the supply chain, leading to inefficiencies and potential errors.

## 5.3 Fragmented Supply Chains

- **Challenge:** The leather industry in Pakistan is characterized by a fragmented supply chain, with numerous small-scale farms, producers and processors. These small entities often lack the resources and expertise to implement traceability measures.

- **Impact:** This fragmentation complicates efforts to maintain a coherent and traceable flow of materials and products, making it challenging to ensure compliance with regulation, environmental, social, and ethical standards.

## 5.4 Inadequate Infrastructure

- **Challenge:** The infrastructure needed to support effective traceability, such as advanced slaughterhouses, centralized databases for hide and skin collectors / traders (sometimes known as Middle Men), butchers and standardised processing facilities, is often inadequate.

- **Impact:** Poor infrastructure limits the ability to monitor and verify the origin and handling of raw materials, leading to issues with quality control, certification processes, and ability to meet regulatory requirements.

## 5.5 Regulatory Challenges

- **Challenge:** Regulatory frameworks for traceability in the leather industry are either lacking or inconsistently enforced. This is exacerbated by weak governance and limited oversight in some regions. New international regulations will enter into force from 31st December 2024.

- **Impact:** The lack of stringent domestic regulations and enforcement mechanisms undermines efforts to implement traceability systems, making it difficult for the industry to meet international market requirements and consumer expectations.

## 5.6 Lack of Awareness and Training

- **Challenge:** There is a mixed level of general awareness and training among stakeholders in the leather industry regarding the importance of traceability and how to implement it effectively. The survey results in Chapter 4 confirm mixed abilities and understanding, particularly relating to EUDR. Upstream with small farmers and rural communities there is little understanding of the need for traceability.

- **Impact:** Without adequate knowledge and skills, many producers and processors are unable to adopt traceability practices, resulting in a lower overall quality of products and reduced market access.

## 5.7 Cost Implications

- **Challenge:** Implementing traceability systems can be costly, particularly for small and medium-sized enterprises (SMEs) that dominate the leather industry in Pakistan.

- **Impact:** The high costs associated with adopting modern traceability technologies and practices can be prohibitive for smaller players, leading to resistance or incomplete implementation. In severe cases it can lead to the closure of small businesses who cannot compete with their larger competitors.

## 5.8 Sustainability and Ethical Concerns

- **Challenge:** Increasing global demand for sustainable and ethically sourced leather products puts pressure on the industry to prove the origin and ethical treatment of animals, non-destruction or forests, pollution free processing and ethical social practices. However, the current traceability systems are often inadequate to meet these demands.

- **Impact:** Without robust traceability, it is difficult to provide transparency regarding animal welfare, environmental impact, and ethical sourcing, potentially leading to reputational risks and loss of market share in sustainability-conscious markets.

The leather industry in Pakistan faces significant gaps and challenges in implementing effective traceability systems. Addressing these issues requires coordinated efforts to standardize processes, adopt modern technology, improve infrastructure, and enforce regulations. By overcoming these challenges, Pakistan's leather industry can enhance its competitiveness, meet international standards, and ensure sustainable growth in the global market.

# 6
# LEGISLATION AND REGULATION

# 6 LEGISLATION AND REGULATION

The leather industry is facing increasing pressure from new regulations and legislation driven by environmental, ethical, and consumer concerns. These regulatory changes are significantly impacting how the industry operates, from farming and production processes to supply chain transparency and product labelling. In order to meet these new legal and consumer expectations, traceability and transparency are a necessity.

## 6.1 Why legislation and regulation?

### 6.1.1 Environmental Regulations

- **Pollution Control:** Leather production, particularly tanning, is a chemically intensive process that has historically caused significant environmental pollution. Governments are introducing stricter regulations on wastewater treatment, chemical usage, and emissions. For example, the European Union's REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulation limits the use of certain harmful chemicals in leather processing.

- **Sustainable Sourcing:** There's a growing emphasis on sustainable sourcing of raw materials. Regulations are emerging to ensure that leather comes from sources that do not contribute to deforestation or other environmental harms. This has led to an increased demand for certifications from organisations like the Leather Working Group (LWG) and the Sustainable Leather Foundation (SLF), which audits tanneries on environmental performance.

### 6.1.2 Ethical and Animal Welfare Legislation

- **Animal Welfare Standards:** Increasing global attention on the welfare of animals is influencing leather production. Some countries are introducing regulations to ensure that animals used for leather are treated humanely. Additionally, there is a rise of advocacy for the adoption of alternatives like lab-grown or synthetic leather to reduce reliance on animal products, which poses a threat to economies of countries like Pakistan who are reliant on livestock farming and leather production as key drivers of economic growth.

- **Labelling Requirements:** Governments are pushing for clearer labelling of leather products to inform consumers about the origin of the leather and the conditions under which it was produced. This includes transparency about the type of leather, the country of origin, and whether the production process meets certain ethical standards.

### 6.1.3 Circular Economy and Waste Reduction

- **Circular Economy Initiatives:** The shift towards a circular economy is driving regulations that encourage recycling and waste reduction in the leather industry. This includes laws that require manufacturers to take back used products and ensure that leather waste is properly managed or repurposed.

- **Extended Producer Responsibility (EPR):** Some regions are implementing EPR schemes that hold producers responsible for the entire lifecycle of their products, including end-of-life disposal. This could lead to increased costs for leather producers but also encourage the development of more sustainable products. This could be seen as advantageous for the leather industry as leather can be re-used and re-purposed for second and third uses within its lifecycle.

### 6.1.4 Trade and Import Regulations

- **Import Restrictions:** Countries are starting to impose restrictions on leather products that do not meet certain environmental or ethical standards. For example, the EU Deforestation Regulation is banning imports of leather linked to deforestation or human rights abuses.

- **Tariffs and Trade Barriers:** As part of broader trade policies, some countries are introducing tariffs or trade barriers on leather products that do not meet specific environmental or ethical criteria, further complicating international trade for the industry.

### 6.1.5 Consumer Protection and Transparency

- **Consumer Protection Laws:** New laws are emerging to protect consumers from misleading claims about the sustainability or ethical production of leather products. This includes regulations against greenwashing, where companies falsely market products as environmentally friendly.

- **Supply Chain Transparency:** Regulations are increasingly requiring companies to disclose detailed information about their supply chains, ensuring that leather products are traceable back to their sources. This is aimed at preventing issues like forced labor or illegal environmental practices.

### 6.1.6 Impact on Industry Practices

- **Innovation and Adaptation:** To comply with these regulations, the leather industry is being forced to innovate, such as developing more sustainable tanning methods, adopting traceability systems, and improving waste management processes.

- **Cost Implications:** Compliance with these regulations often involves significant costs, from upgrading facilities to meet environmental standards to ensuring supply chain transparency. Smaller players in the industry might find it challenging to absorb these costs, potentially leading to industry consolidation.

### 6.1.7 Global Disparities

**Variability in Enforcement:** The impact of these regulations varies significantly by region. While countries in Europe and North America are leading the way in implementing and enforcing these regulations, others in Asia and Africa, where much of the leather processing takes place, may have less stringent or inconsistently enforced rules. This disparity creates challenges for global brands that need to maintain consistent standards across different markets.

The leather industry is in a transitional phase, with incoming regulations pushing for a more sustainable and ethical approach to production. These changes are likely to reshape the industry in the coming years, influencing everything from material sourcing to end-product marketing.

## 6.2 European Union Deforestation Regulation (EUDR)

The European Union Deforestation Regulation (EUDR)[iv] is a significant legal framework aimed at curbing deforestation and forest degradation linked to the production and trade of certain commodities. The regulation is part of the EU's broader environmental and climate goals, particularly its commitment to halt global deforestation and contribute to global sustainable development.

### 6.2.1 Background and Need

Global deforestation, driven largely by agricultural expansion, has been a major contributor to biodiversity loss and climate change. To address this, the EU has long recognized the need for stricter measures to reduce its footprint on global forests.

The EUDR builds on previous EU efforts, particularly the EU Timber Regulation (EUTR) of 2010, which targeted illegal logging, but was limited in scope.

### 6.2.2 Development Timeline

- 2019 - The European Commission launched the "Communication on Stepping up EU Action to Protect and Restore the World's Forests," setting the stage for stronger regulations.
- 2021 - The European Parliament and the Council of the European Union began consultations on a new regulation that would target commodities linked to deforestation.
- November 2021 - The European Commission proposed the first draft of the EUDR.
- December 2022 - After extensive negotiations, the European Parliament and the Council reached a provisional agreement on the regulation.
- June 2023 - The EUDR was formally adopted by the EU.

### 6.2.3 Implementation Timeline

- December 2023 - The EUDR enters into force, six months after its publication. This marks the start of the 12 month transition period for companies and member states. Companies were given between 18 to 24 months (depending on their size) to comply with the new regulation. During this time, they must establish due diligence systems to ensure their supply chains are free from deforestation and forest degradation.
- December 2024 - The implementation date of 31st December 2024 was extended for a further 12 months.
- 31 December 2025 - The effective date of implementation for large and medium size companies, i.e. those with over 50 employees and a turnover in excess of €5 million.
- 30 June 2026: The effective date of implementation for small and micro companies whose turnover is less than €5 million and employs less than 50 people.

### 6.2.4 Key Requirements of the EUDR

**Scope of Commodities:** The EUDR targets specific commodities associated with deforestation, including palm oil, soy, coffee, cocoa, **beef**, and timber, as well as products derived from these commodities (e.g., **leather**, chocolate, furniture). The regulation covers both legal and illegal deforestation, expanding its impact beyond the earlier EUTR.

### 6.2.5 Due Diligence Requirements

Companies importing or trading these commodities within the EU must conduct due diligence to ensure their products are not linked to deforestation or forest degradation. This extends to import into and export out of the EU.

The due diligence includes tracing the supply chain back to the production area, assessing the risk of deforestation, and ensuring that products comply with the legal standards of the country of origin.

Companies must collect geolocation data for the plots of land where the commodities were produced to verify their compliance.

### 6.2.6 Country Benchmarking System

The regulation includes a country benchmarking system, where countries are categorised into three levels of risk (low, standard, and high) based on their deforestation rates and legal frameworks. At the time of this report, the allocation of risk benchmarking was not yet published.

Companies sourcing from high-risk areas face stricter due diligence obligations. Geolocation data is mandatory for all risk profiles.

### 6.2.7 Reporting and Transparency

Companies must report their due diligence findings to the authorities through the information system provided by the EU, and non-compliance can lead to significant penalties, including fines and restrictions on market access. The regulation also promotes transparency by requiring the publication of some data.

- **Penalties for Non-Compliance**: Non-compliant companies face penalties, which could include fines proportional to the environmental damage caused, market restrictions, or even exclusion from the EU market.

- **Simplified Obligations for SMEs:** Small and medium-sized enterprises (SMEs) have simplified due diligence obligations, although they are still required to conduct due diligence in the same way as larger companies. There is a longer transitional period to allow companies to adjust to the new requirements before they become fully enforceable, and penalties for non-compliance may be less severe. In addition, the EU can provide additional support and guidance to SMEs to help them understand and comply with the regulation. This includes templates, guidelines, and possible financial assistance or training.

## 6.3 European Union Corporate Sustainability Reporting Directive (EU CSRD)

The EU Corporate Sustainability Reporting Directive (CSRD)[v] is legislation aimed at enhancing corporate transparency and accountability in environmental, social, and governance (ESG) matters. The directive is part of the European Green Deal and is designed to improve the quality and consistency of sustainability reporting across the European Union.

### 6.3.1 Background and Need

#### *6.3.1.1 Predecessor – Non-Financial Reporting Directive (NFRD):*

The CSRD builds upon the Non-Financial Reporting Directive (NFRD), which was adopted in 2014. The NFRD required large public-interest companies with more than 500 employees to disclose non-financial and diversity information, including environmental and social matters, treatment of employees, respect for human rights, anti-corruption, and bribery.

Despite its pioneering role, the NFRD had limitations, including inconsistent reporting standards and limited scope, which led to the development of the CSRD.

#### *6.3.1.2 Development Timeline*

April 2023 - The European Commission proposed the CSRD as part of a broader strategy to strengthen sustainability disclosure. This proposal was driven by the need to ensure that investors and other stakeholders have access to reliable and comparable sustainability data, enabling them to make informed decisions.

November 2022 - The CSRD was officially adopted by the European Parliament and the Council, reflecting the EU's commitment to transitioning to a sustainable economy.

#### *6.3.1.3 Implementation Timeline*

- **2024:** The directive applies to large public-interest companies already subject to the NFRD, requiring them to make their first reports under the new standards in 2025.
- **26 February 2025:** The directive is simplified by the European Commission to remove 80% of companies from the scope and postponement by two years for companies that are in scope.
- **26 July 2028:** The directive will apply for companies in scope to submit reports.

#### *6.3.1.4 Key Requirements of the CSRD*

**Expanded Scope:** The CSRD significantly broadens the scope of companies required to report on sustainability matters. It covers all large companies and listed SMEs, affecting around 50,000 Companies, compared to the 11,000 under the NFRD.

**Standardized Reporting Framework:** Companies must report according to the European Sustainability Reporting Standards (ESRS), which are being developed by the European Financial Reporting Advisory Group (EFRAG). These standards ensure consistency and comparability across the EU.

**Double Materiality**: The CSRD introduces the concept of double materiality, requiring companies to report on how sustainability issues affect their business (financial materiality) and how their activities impact society and the environment (impact materiality).

**Audit and Assurance:** The directive mandates external assurance of sustainability information. This is a step beyond the NFRD, which did not require such assurance. Initially, a limited assurance is required, but the goal is to move towards reasonable assurance in the future.

**Digitalisation of Reporting:** Companies must prepare their sustainability reports in a digital, machine-readable format using the European Single Electronic Format (ESEF). This facilitates easier access and comparability of data.

**Inclusion of Forward-Looking Information:** Companies are required to disclose forward-looking information, including plans and targets related to sustainability, which emphasizes the EU's focus on long-term sustainability goals.

**Supply Chain Transparency:** The directive encourages companies to report on their entire value chain, including upstream and downstream activities. This extends accountability beyond direct operations to suppliers and other business partners.

## 6.4 European Union Corporate Sustainability Due Diligence Directive (EU CSDDD)

The Corporate Sustainability Due Diligence Directive (CSDDD)[vi] is a legislative initiative by the European Union aimed at ensuring that companies operating within the EU take responsibility for the environmental and human rights impacts of their activities, including those throughout their supply chains. The directive is part of the EU's broader strategy to promote sustainability and corporate accountability, aligning with the European Green Deal and the EU's human rights commitments.

### 6.4.1 Key Objectives

- **Human Rights**: The directive seeks to protect human rights by obliging companies to identify, prevent, mitigate, and account for how they address the adverse impacts of their operations on human rights, such as forced labor, child labor, and exploitation.
- **Environmental Protection**: The CSDDD also focuses on environmental impacts, requiring companies to address issues such as pollution, biodiversity loss, and climate change within their value chains.
- **Corporate Governance**: Companies are encouraged to integrate sustainability into their corporate governance and decision-making processes.

### 6.4.2 Scope of Application

The CSDDD applies to:

- **Large EU Companies**: Those with over 500 employees and a net turnover of more than €150 million globally.
- **High-Risk Sectors**: Companies with over 250 employees and a net turnover of more than €40 million globally, if operating in high-risk sectors such as textiles, agriculture, or minerals.
- **Non-EU Companies**: Non-EU companies meeting the same turnover thresholds within the EU are also subject to the directive.

### 6.4.3 Due Diligence Obligations: Companies are required to:

- **Identify Risks**: Assess potential or actual adverse impacts on human rights and the environment throughout their supply chains.
- **Prevent and Mitigate**: Implement measures to prevent, mitigate, and, where necessary, bring an end to these impacts.
- **Monitor**: Regularly monitor the effectiveness of these measures.
- **Report**: Publicly report on their due diligence policies and the actions they have taken.
- **Remedy**: Facilitate access to remedies for victims of adverse impacts.

### 6.4.4 Enforcement and Penalties

- **National Authorities**: Member states will designate national authorities responsible for enforcing the directive and may impose sanctions on companies that fail to comply.
- **Civil Liability**: The directive allows victims to bring civil lawsuits against companies for harms caused by their failure to comply with their due diligence obligations.

### 6.4.5 Implications for Businesses

- **Increased Compliance Costs**: Companies may face higher costs associated with compliance, including due diligence processes, reporting, and potential legal liabilities.
- **Supply Chain Management**: Firms will need to scrutinize and manage their supply chains more closely, particularly in high-risk sectors.
- **Corporate Governance Changes**: Companies may need to adjust their governance structures to better integrate sustainability considerations.

### 6.4.6 Timeline

- The directive was first proposed by the European Commission in February 2022.
- It has since been under negotiation and is expected to be implemented within a few years, with companies being given a transitional period to comply once it is adopted.

## 6.5 Other Regulation and Legislation

The regulations and directives outlined above are those for which traceability and transparency are vital within the leather industry. There are other legislative acts and directives that are in process and that will have an impact on the leather industry but with less stringent requirements such as:

### 6.5.1 UK Forest Risk Commodities Act[vii]

Similar in scope to the EUDR but with some variances. For example:

The UK Forest Risk Commodities Act will not require geocoordinates of all plots of land.

The UK Forest Risk Commodities Act does include finished products within scope.

### 6.5.2 The New York Fashion Sustainability and Social Accountability Act[viii]

This act will require all fashion companies in New York that generate more than $100 million, to map at least 50 per cent of their supply chains and make this information publicly available online. Companies operating in the State of New York will be subject to fines up to 2 per cent of their annual revenue for non-compliance.

### 6.5.3 European Union Green Claims Directive[ix]

These are not in force yet, but the objective of the directive is to ensure that environmental labels and claims are credible and trustworthy and will allow consumers to make better-informed purchasing decisions. Under the directive, companies wishing to make a claim will have to ensure that:

Any claim can be substantiated against a standard methodology to assess impact on the environment

Any claims are reliable, comparable, and verifiable.

The incoming regulations and directives represent a significant shift in corporate regulation, emphasizing sustainable and ethical business practices. They reflect the growing importance of ESG factors in corporate strategy and risk management, aiming to ensure that businesses contribute positively to society and the environment. For all the outlined directives and regulations traceability and transparency are required as an intrinsic part of demonstrating compliance.

If you don't know where a material or product has come from, then you cannot attach the assurance to it, that today's society demands.

For countries like Pakistan this shift represents a significant burden and disruption to the informal and unstructured livestock farming and meat production that the country currently adopts. In order to successfully navigate these new requirements, government and private sectors will have to work together to develop systems, tools and financial support that assist the rural communities to meet the challenge.

# 7
# MECHANICS OF TRACEABILITY AND TRANSPARENCY

# 7 MECHANICS OF TRACEABILITY AND TRANSPARENCY

## 7.1 Definitions

**Traceability[x]:**

"The ability to identify and trace the history, distribution, location and application of products, parts and materials, to ensure the reliability of sustainability claims, in the areas of human rights, labour (including health and safety), the environmental and anti-corruption".

**Transparency[xi]:**

"Relevant information being made available for all elements of the value chain in a harmonized way, which allows for common understanding, accessibility, clarity and comparison".

It is not possible to meet the definition of transparency without first meeting the definition of traceability. You can be transparent about not having traceability and therefore are not able to substantiate claims, however, in order to substantiate claims in a transparent way, traceability is a pre-requisite.

Traceability and transparency are fundamental elements to provide the leather value chain with the adequate socio-environmental safeguards that can meet current and future regulation and legislation, as well as the demands of civil society.

Establishing a traceability and transparency system enables better understanding and management of ESG risks for an organisation and as referred to in Chapter 3, there are many additional benefits to be had.

## 7.2 Mechanics of Traceability

- **Data Collection:** Information is collected at each stage of the supply chain, including sourcing of raw materials, manufacturing processes, distribution, and retail. This will include information such as batch numbers, production dates, supplier information, and transportation details.
- **Unique Identifiers:** Products or batches are often assigned unique identifiers, such as barcodes, RFID tags, or QR codes, which are scanned at each stage to record relevant data.
- **Record Keeping:** All collected data is stored in a centralized system or database, often using ERP systems or specialized traceability software.
- **Tracking and Linking:** The unique identifiers allow companies to link each item or batch back to specific suppliers, production lots, or even raw material sources. This linking helps in quickly identifying where a product or component came from and where it has been.

- **Real-time Monitoring:** Advanced traceability systems can provide real-time tracking, allowing companies to monitor the movement of goods through the supply chain and react swiftly to any issues, such as delays or recalls.
- **Backward and Forward Tracing:** Traceability involves both backward tracing (from the end product to the raw materials) and forward tracing (from raw materials to the end product). This helps in identifying the root cause of issues and in managing product recalls effectively.

## 7.3 Mechanics of Transparency

- **Open Communication:** Businesses openly share information about their operations, supply chain practices, sourcing methods, environmental impact, labor practices, and more. This can be done through reports, certifications, and public disclosures.
- **Standardisation:** Transparency often requires adherence to certain standards and certifications (e.g., LWG, SLF, ISO certifications) that are recognised and trusted by consumers and regulators.
- **Verification and Audits:** To ensure that the information provided is accurate and trustworthy, third-party audits and verifications are often conducted. These audits validate the claims made by a company regarding their practices.
- **Public Accessibility:** Information is made accessible to the public, typically through product labelling, company websites, sustainability reports, or online platforms. This helps consumers make informed decisions.
- **Ethical Practices:** Transparency is closely linked to ethical business practices. Companies are expected to disclose any potential conflicts of interest, environmental impacts, and social responsibility initiatives.
- **Consumer and Stakeholder Engagement:** Transparency also involves actively engaging with consumers and other stakeholders, responding to inquiries, and being open about business practices. This builds trust and can enhance brand reputation.

## 7.4 Integration of Traceability and Transparency

**Disclosure vs Transparency:** It is important to distinguish between disclosure and transparency. It is not always necessary to disclose publicly all the business information relating to the traceability and transparency. An organisation may have different disclosure levels for different parts of the stakeholder community, i.e. full disclosure to 3$^{rd}$ party audit companies or for regulatory purposes, with only partial disclosure for supply chain customers or suppliers. As long as the organisation is transparent about their disclosure policy and has the required evidence in place if required, this is acceptable.

While traceability focuses on the internal ability to track products through the supply chain, transparency is about sharing that information with external stakeholders. The integration of both concepts ensures that companies can not only track and manage their supply chains effectively but also communicate that information in a trustworthy manner. For instance, a company might use traceability to ensure that its products are sourced sustainably and free from forced labour. Transparency would then involve communicating this information to consumers, possibly through product labelling or a dedicated section on their website and backing it up with third-party certifications.

In summary, the mechanics of traceability involve tracking and documenting the movement and transformation of products within the supply chain, while transparency involves sharing this information openly with stakeholders. Together, they form a robust framework for ensuring accountability, quality, and ethical practices in business operations.

## 7.5 Support Organisations and Initiatives

**Leather Working Group[xii]:** The Leather Working Group (LWG) is a multi-stakeholder organisation that promotes environmentally responsible practices within the leather industry. Founded in 2005, LWG comprises brands, manufacturers, suppliers, and other stakeholders in the leather supply chain. Its main objective is to improve the environmental performance of tanneries by establishing audit protocols that assess various factors, such as water and energy use, waste management, and chemical use. LWG certification is widely recognised in the industry, helping brands to ensure that their leather products are sourced from environmentally responsible tanneries.

The LWG certification includes specific traceability expectations to ensure that leather products are sourced from responsible and transparent supply chains. These traceability requirements focus on the ability to track leather materials through the supply chain, from the raw material stage (such as hides and skins) at slaughterhouse to the finished leather material.

**Key traceability expectations of LWG certification include:**

- **Supply Chain Mapping:** Tanneries and other leather suppliers must map their supply chains, identifying all upstream suppliers of raw materials. This includes tracking where hides and skins are sourced from, ensuring they originate from known and responsible sources.
- **Chain of Custody:** LWG certification calculates the percentage of material where the chain of custody is maintained throughout the supply chain. This means that each stage of the leather production process, from raw hides to finished leather, must be documented and traceable.

- **Data Documentation:** Tanneries must keep detailed records of their leather production processes, including information on the origins of raw materials, chemical inputs, and production methods. This documentation is crucial for audits and ensuring compliance with LWG standards.
- **Transparency and Reporting:** LWG-certified entities are expected to provide transparent reporting on their traceability efforts. This includes making traceability information available to customers and other stakeholders, helping them understand the provenance of the leather used in their products.
- **Animal Welfare Considerations:** While LWG primarily focuses on environmental performance, it also encourages the traceability of raw materials back to sources that adhere to acceptable animal welfare standards.

**Sustainable Leather Foundation[xiii]:** The Sustainable Leather Foundation (SLF) is a global organisation dedicated to promoting sustainability and transparency within the leather industry. It provides a framework for businesses across the leather value chain, from tanneries and product manufacturers to brands and retailers, to adopt more sustainable practices. The foundation focuses on ESG aspects, helping companies improve their impact on the environment, ensure ethical labour practices, and enhance operational transparency. Established in 2020, SLF offers tools like certification, assessments, and reporting mechanisms to guide companies toward achieving these goals.

**Key traceability expectations of SLF certification include:**

- **Raw Material Source Identification:** Companies must identify and document the origin of raw materials, particularly hides and skins. This includes information about the animal's origin, the farming practices used, and the geographical location.
- **Supply Chain Transparency:** Full transparency is required across the entire supply chain, from raw material suppliers to finished goods manufacturers. Each stage of production, including processing, tanning, and finishing, must be documented and traceable.
- **Chain of Custody Documentation:** A robust chain of custody must be maintained, ensuring that all materials can be traced back through the supply chain. This involves keeping detailed records of material transfers, transactions, and processing steps.
- **Certification and Verification:** Companies are encouraged to obtain certification for their traceability systems, which may involve third-party audits and verification processes. This ensures that the traceability claims are credible and meet SLF's standards.

- **Use of Technology:** The foundation supports the use of advanced technologies like blockchain, RFID tags, and digital databases to enhance traceability. These technologies help in maintaining accurate and accessible records throughout the supply chain.
- **Compliance with Legal and Ethical Standards:** Traceability practices must comply with all relevant legal requirements, including animal welfare laws, environmental regulations, and ethical labour practices. Companies are responsible for ensuring that their suppliers also adhere to these standards.

  **Reporting and Accountability:** Regular reporting on traceability is required as part of SLF's transparency initiatives. Companies must be able to demonstrate their traceability practices and the integrity of their supply chains through periodic assessments and public disclosures via the SLF Transparency Dashboard. By adhering to these traceability requirements, companies can help ensure that their leather products are produced sustainably, ethically, and transparently, meeting both consumer expectations and regulatory demands.

**Leather Traceability Cluster:** This group was convened under the facilitation of COTANCE in 2022, and its aim is to harmonise standards for traceability, with an end goal of creating a CEN or ISO standard for traceability. The main standard setting organisations in the leather industry are all working together, including SLF, LWG, ICEC, Oeko-Tex and Textile Exchange, to develop a standard. This will help to avoid confusion in the industry through alignment on traceability terms, definitions and the minimum standards required to demonstrate robust traceability, within 3 levels:

- **Level 1:** Minimum requirements for any species within the leather value chain.
- **Level 2:** Minimum requirements for any material that is compliant with the requirements of the EUDR.
- **Level 3:** Enhanced requirements for any species where additional sustainability performance is also required.

Within the guidelines given in Chapter 12 (which can be abridged for use separately to this report), the elements requested are in alignment with work that LWG, SLF and Leather Traceability Cluster are all doing on traceability.

**European Commission Deforestation Platform[xiv]:** The European Commission Deforestation Platform is an initiative launched by the European Commission to support efforts to curb global deforestation and forest degradation. It aims to engage various stakeholders, including governments, NGOs, and businesses, in discussions and actions to reduce the European Union's impact on global deforestation. The platform serves as a hub for information exchange, best practices, and policy coordination related to deforestation-free supply chains, promoting sustainable land use, and ensuring that EU imports are not linked to deforestation activities. This aligns with the broader EU Green Deal and its commitment to sustainability and environmental protection. This platform is responsible for the implementation system for EUDR compliance.

**United Nations Economic Commission for Europe[xv]:** The UNECE (United Nations Economic Commission for Europe) initiative on Traceability and Transparency for Sustainable Value Chains in the Garment and Footwear Sector is aimed at improving the sustainability of these industries. It developed a framework that allows for better traceability of products and materials throughout their entire lifecycle, from raw material extraction to the final consumer. This initiative's outcomes ensure that all actors in the supply chain—from manufacturers to retailers—can verify and communicate the ESG standards adhered to during production. By enhancing transparency, the UNECE aims to empower consumers to make informed choices, support businesses in meeting sustainability goals, and foster a shift towards more responsible production and consumption patterns in the garment and footwear industries. The initiative includes the development of guidelines, tools, and standards, promoting collaboration among stakeholders to address issues like labour rights, environmental impact, and fair-trade practices.

**Pakistan Tanners Organization:** The Pakistan Tanners Association advocates for collaborative efforts between governments, industry associations, NGOs, and the private sector to establish a robust traceability framework that does not disadvantage rural populations. The PTA supports ongoing efforts, including those by WWF, to develop practical guidelines and welcomes initiatives that aim to build a sustainable and prosperous leather industry that protects both people and the planet. The issue of traceability in Pakistan's leather sector has been under consideration since 2012, when a leading international brand, IKEA, became the first to demand traceability from its suppliers. At that time, Pakistan lacked any formal traceability systems, presenting the leather industry with a difficult choice: continue using local raw materials and risk losing international clients, or shift to imported materials with established traceability back to the slaughterhouse. This marked the beginning of a broader trend in global raw material sourcing, driven by rising brand expectations and international compliance requirements.

Currently, PTA estimates that 39 per cent of hides are sourced from certified slaughterhouses, with a goal of reaching 70 per cent by 2030 (excluding religious sacrifices). However, with rising international regulations such as the EU Deforestation Regulation (EUDR), further steps are necessary to prevent negative impacts on Pakistan's leather exports. The government is now considering the development of regulatory frameworks and digital tracking systems. These efforts must take into account the unique needs and limitations of rural communities to ensure inclusive and sustainable implementation.

# 8
# MECHANICS OF TRACEABILITY AND TRANSPARENCY

# 8 CURRENT BRAND AND MARKET TRENDS RESEARCH

Export market trends and opportunities related to leather traceability are developing at a pace driven by the demands of a combination of stakeholder groups spanning consumers, regulators, investors, and civil society groups. Connecting primary data from supply chains through traceability is critical to enabling accountability and action.

## 8.1 Regulation

Traceability plays a fundamental role to fulfil the data requirements associated with many regulations. The main regulation putting leather traceability and transparency in focus is the European Union Deforestation Regulation (EUDR). Traceability is an inherent part of the approach of the EUDR, requiring geographic coordinates for all production plots of land involved in the rearing/cultivation of in scope commodities[xvi]; cattle and its byproducts being in-scope commodities. As a result, traceability is required as a default for all material origins, even those where deforestation risk is low.

The current EUDR scope for leather, as a derivative of beef does not include finished products. However, with potential for finished products to be included in future revisions of the regulation, many global brands are using the introduction of the EUDR as an opportunity to accelerate efforts on leather traceability.

## 8.2 Consumers

Issues related to the material origin for leather are highly emotive for consumers with concerns related to animal welfare, and the impact of farming practises linking to deforestation make traceability a priority to enable management of these complex topics.

Brands often look to 3rd party certification schemes to manage risk and differentiate products, through making credible claims to consumers about environmental and social topics. Standards with robust chain of custody models, where transactions are monitored at every stage of production, are the only way that product specific claims can be substantiated.

Engaging consumers through credible product claims is one of the biggest opportunities for the leather industry to build trust. With demand to deliver claims such as 'Deforestation-free' or 'Regenerative' spurring industry discussions on traceability. Multi-stakeholder forums are working to develop traceability and chain of custody models for leather, like those in place across the organic and other 'responsible' material sectors.

## 8.3 ESG Targets

Traceability underpins the ability for targets to be met through tracking and capturing data on key activities by supply chain partners.

**Key themes for targets reliant on traceability are as follows:**

**'Responsible' or 'sustainably' sourced materials** – many brands have timebound commitments for all fibre and material sourcing to be switched.

**Climate and GHG emissions** – timebound commitments to achieve carbon neutrality/net zero emissions are common. Industry metrics (LCA studies) highlight leather as a key contributor to scope 3 emissions linked primarily to farm level impacts.
**Raw material origin** – impacts at the farm level for leather are reliant on livestock practices touching many aspects of ESG. In particular deforestation and conversion of natural landscapes and animal welfare being the focus for targets.
**Biodiversity and regenerative agriculture** – more recent topics which are growing in awareness linking to origin level impacts for leather sourcing.
**Water and waste** – water foot printing is an emerging topic for many brands and waste has relevance at multiple stages of the lifecycle of production and consumption. Both water and waste are key topics to manage within the production of leather.
**Chemicals** – reducing the use of hazardous substances is a critical topic for brands. Given the reliance on chemicals for much of the tanning and finishing processes to produce leather, targets in this area are key for worker health and safety, pollution control and overall sustainability.

## 8.4 Reporting

Reporting is a critical tool for brands to be accountable and required by a range of stakeholders. Brands seek to achieve a competitive advantage and build investor confidence through sound financial and sustainability performance, reflected in the dual approach of corporate reporting.
Brands sourcing leather products are increasing their disclosure levels through established reporting mechanisms such as the Carbon Disclosure Project(CDP) and seeking to improve their rankings in reports such as Global Canopy's Forest 500 report.
Other voluntary initiatives such as the Task Force for Nature Based Disclosure(TFND), Science Based Targets (SBT), and Science Based Targets for Nature (SBTN) are also driving the need for traceability to enable accurate primary data to monitor climate and biodiversity impacts.
Other civil society initiatives including Fashion Revolution's 'Transparency Index', Human rights' coalition led 'Transparency Pledge' seeking fashion industry commitments to disclosure, 'Know the Chain' which focuses on assessing forced labour risks in supply chains and consumer focused rating initiative 'Good on You' all add pressure on brands from a disclosure and transparency perspective, which brands can only fulfil once traceability is established.

## 8.5 Business Efficiency

Driving efficiencies within business practises specifically related to sourcing and supply chain management provides a strong business case for traceability. The leather supply chain in many parts of the world is reliant on a network of intermediary suppliers, traders and sub-contractors especially where hides or skins originate from informal sources or when speciality finishes, or product designs are required.

Brands who have prioritised building relationships and systems to monitor their supply chain network, are in a much stronger position to manage inefficiencies and reward/incentivise upstream players who can affect the quality and performance of their leather products.

## 8.6 Technology and Innovation

Advances in technology support the potential for traceability as brands work to extend digitization of their own operations and put expectations on their upstream supply chain to integrate and provide data. Significant investment by brands in digital systems to manage the product lifecycle and inventory (PLM & ERP systems) are being extended or integrated with traceability systems which rely on the supply chain cascading data requests upstream.

Looking to the future innovation in technology such as the evolution of blockchain systems, the Internet of Things(IoT) utilising sensors to capture real time data and Artificial Intelligence (AI) to analyse vast data sets all offer new opportunities for traceability to be delivered in leather production.

## 8.7 Brand Analysis

This section contains analysis of publicly available policies and ESG reports of leading global leather brands. Brands were selected to represent a cross section of market sectors for leather products across apparel, footwear, automotive, and interiors.

Analysis on the following points was conducted:

- What overall material targets has the brand set for either responsible or sustainable sourcing, and is the brand's definition of what qualifies clear?
- Has the brand defined leather specific sourcing targets?
- Does the brand have traceability specific targets?
- What is the status of material and/or traceability targets?
- For leather sourcing, does the brand have country specific rules or are any countries/regions prohibited for sourcing?
- Is the brand a signatory of any industry initiatives such as the 'Deforestation-Free Call to Action for Leather' for example?

The following themes emerged from the analysis:

- Material targets predominantly refer to sourcing from more 'responsible' or 'sustainable' sources. With the adoption of voluntary certification standards by brands used as a credible way to fulfil these targets.
- Brands without material specific targets refer to overarching themes linked to climate/GHG emission reduction or waste.
- Leather specific targets either address processing issues – 100 per cent chrome free tanning or proportion of material from certified tanneries or set goals related to sourcing hides as Deforestation and Conversion Free (DCF). Eight of ten brands reviewed are signatories of the NGO led 'Deforestation Free Call to Action for Leather'.

- Traceability appears as a stand-alone topic within corporate reporting for only a handful of brands.
- Traceability targets are inconsistent and hard to compare as some brands refer to targeting information about country of origin and others focus on extending from tier 1 onto tier 2 data capture.
- The status of targets is equally challenging to compare as most quote the proportion of material sourced from certified tanneries. Whilst others quote traceability to country or specific supply chain stage.

  The regulations and restrictions on origin focus on three key areas
- Concern on animal welfare banning leather originating from India, Bangladesh, and China
- Concern over manufacturing conditions banning leather produced in tanneries in Bangladesh or Pakistan
- Concern over links to deforestation banning leather from Brazil or region specific – Amazon/Gran Chaco

## 8.8 Brand Requirements

Industry certifications are the primary route for global brands to cascade traceability requirements to their upstream leather supply chain. Physical marking of leather coupled with robust internal systems within tanneries is incentivised through global assessments.

Traceability must be evidenced through documentation to track the movement of material through the supply chain. Suppliers are required to share documents about sales (purchase orders, invoices) and/or shipping (bills of lading, customs records). Collection and verification methods of documentation varies. Some brands require copies of records directly, especially to provide assurance on the country of origin for raw material. However, this is not practical at scale so often a sampling approach is implemented.

Increasingly major brands are investing in digital traceability systems to automate the process of collecting documentation to map supply chains in the first instance then build out product level traceability. Verification can be through 3rd party audits or 2nd party means, where internal teams carry out spot checks on practices and record-keeping by suppliers. Whilst some brands rely on supplier declarations as to the veracity of information provided.

Innovation of “in” and “on” product tracers for leather are being tested by many major brands however lack scaled or cost-effective implementation at this stage. Collaboration between brands and within the supply chain is needed to connect both methods and systems for traceability as the nature of leather as a by-product of the livestock industry means no one approach can be used for end-to-end visibility.

Please see Appendix 1 for research and analysis of Leather Brand Policy and Reports.

# 9
# MECHANICS OF TRACEABILITY AND TRANSPARENCY

# 9 TRACEABILITY TOOLS AND SYSTEMS TO SUPPORT TRACEABILITY

To achieve the highest level of traceability for a product or material a combination of both physical and documented (ideally digital) tracking needs to be enacted at every stage of a value chain.

End to end traceability is challenging for leather as it means managing and being able to access data from dual industries of livestock and leather production. Meat production mandates strict traceability for health and safety reasons. However, this data is rarely available to the downstream leather supply chain post slaughter.

Practical approaches for marking livestock in the pre and post slaughter stages of the supply chain for leather production offer advantages and challenges. The suitability of one method over another will depend on specific needs, cost considerations and the complexity of the supply chain.

Informal rearing and slaughter of livestock in countries such as Pakistan mean upstream traceability is rare and aggregated data about the point and radius of collection of hides by hide collectors and traders supplying to tanneries is often the best equivalence for farm level data.

## 9.1 Pre-slaughter identification methods

**Branding:** Branding has been a traditional method of identifying livestock for centuries. Concern over animal welfare especially related to hot branding have led to regulation and some countries to ban the practice (Germany, Netherlands and Sweden). Types of branding include:

- **Hot branding:** Hot branding uses a heated metal iron shape to burn a mark into an animal's skin leaving a permanent scar. It is a low-tech and cost-effective method of permanently marking animals/hides. Animal welfare is the key concern that pain and stress is experienced by animals. The permanent mark can significantly affect the quality and useable area of the hide.
- **Freeze branding:** Freeze branding uses an iron shape that is cooled using liquid nitrogen or dry ice. This is a less painful and more humane method than hot branding. Although it may not be as effective and can take longer than hot branding, it also requires more specialist equipment and has the similar concerns related to animal welfare and the resulting quality issues for leather production.

**Tagging:** Tagging is a common means of animal identification globally though generally adopted as a practice only in developed countries. Types of tagging include:

- **Ear Tagging:** Plastic or metal tags with unique codes or barcode are attached to identify animals throughout their lifetime (provided they are applied at birth) up until slaughter. Tags allow individual tracking and monitoring of animals and can have electronic devices integrated for automated record keeping. However, it can be costly especially if specialist tags are being used, and have costly digital system needs for managing associated data. Potential ethical concerns over application have been cited. Tags can be lost and have the potential to mark or scar other animals.

- **Microchipping:** Tiny electronic chips can be implanted under the skin. These provide a permanent tamper proof means to identify animals. The limited range of microchip scanners mean close proximity is required for reading microchips which might not be practical at scale or in remote areas.
- **Radio Frequency Identification Tags (RFID):** RFID tags are most commonly attached as part of the ear tag but can be integrated as part of microchips or ingested to remain within an animal's digestive system. RFID tags can be read from a distance enabling automated data capture at scale. However, the set up and maintenance costs are high compared to other identification methods.
- **Near Field Communication Tags (NFC):** NFC tags can be used for animal identification and are most commonly being attached to ear tags. NFC tags are a subset of RFID technology, and they are not as widely adopted in livestock operations as RFID due to having a shorter communication range for scanning (up to 10 cm).
- **Animal Marking:** The use of paint to spray temporary or semi-permanent markings is a non- invasive marking method. It is a low-cost method but can easily wear off and require re-application. Markings will be lost post slaughter but do provide the opportunity for data to be manually transferred by other means if adequate systems and processes are put in place.
- **DNA Innovation:** Spraying DNA onto livestock for traceability is an innovative and emerging technology that involves applying a unique DNA marker to the surface of animals, providing an external traceable identifier that can be used at subsequent stages of the supply chain. However, durability is an issue and the ability for markers to be detected once material has entered leather manufacturing is limited. Requiring re-application of markers at later production stages, adding additional cost to a process which already carries a premium.

## 9.2 Post-Slaughter Identification Methods

**Stamping:** Stamping of hides is a common and traditional method for marking and identification of hides, involving physically imprinting or embossing a mark. Hides can be stamped either at the slaughterhouse or raw hide tannery with differing degrees of automation possible. Methods of stamping include:

- **Automated Stamping:** Automated stamping machines provide individual hide identification and traceability to the point of application. They are costly to purchase and install and require digital system integration to work as part of a traceability system. Advanced systems configure data from ear tags that have been transferred to the hide with some form of physical tag. For organisations that produce split leathers, the Gibson Bass stamping system can provide a stamp that cuts right through the grain and drop split enabling traceability for both pieces after splitting.
- **Manual Stamping:** Stamping where a number/code is configured manually to typically identify batches of hides. Individual hide identification requires more time, is more labour intensive and therefore can be costly.

**Laser Marking:** Laser marking is an advanced technology for marking hides or skins. A laser beam is used to create a permanent mark such as a code, barcode or QR code on the hide or leather surface. Laser systems are costly to purchase and install and can require additional considerations, for example, laser marking of hides in certain conditions can risk the formation of Chrome VI.
Both stamps and laser marks are often trimmed from hides at the product manufacture stage therefore other methods and transfer of data need to be used to maintain traceability.

**RFID Tags:** Radio Frequency Identification (RFID) tags can be attached to hides to track their movement through the supply chain. This can provide real-time tracking and ensure traceability, provided the tag can

remain with the hide and withstand manufacturing. Therefore, this option is most effective when applied to finished leather or products to enable accurate tracking and inventory management.

**Barcode Labels:** Barcodes are printed on labels and attached to hides, allowing scanning at different points in the supply chain. Although cost-effective and widely used, these can only be used on products from the finished leather stage onwards.

**DNA/Additive Markers:** Synthetic DNA or chemical markers can be embedded onto hides to enable unique identification. These are invisible and tamper proof but costly to implement and verify, as they require testing or scanning technology to read the data. The ability to withstand processing is questionable with trials still taking place, so they are currently most effective when used beyond wet processing stages onwards.

**Ceramic Marker:** Ceramic markers made from inert, non-toxic ceramic particles that can also be added as dry powder to tanning chemicals as a durable marking solution. However, unlike DNA there is not an infinite supply, limiting the applicability at scale. Associated costs for set up and scanning for all additive markers remain high but may come down as the technology develops in future.

## 9.3 Tracking Technology and Innovation

All data whether it be from the pre- or post-slaughter stages of the supply chain must be captured in a consistent way and be available to the downstream supply chain to enable traceability. Technologies to track complex data in real-time and at scale offer the chance to manage leather traceability for quality, efficiency, and sustainability purposes.

- **Digital 'Software as a Service' (SaaS) systems:** SaaS systems can be integrated as part of the range of hide identification methods to streamline data capture at multiple stages of the supply chain. Scan hide in Denmark is a best-in-class example of traceable hides, capturing individual animal data from ear tags into a digital system whilst a unique number is lasered onto the hide providing traceability to origin for the onward chain.

- **Blockchain:** Blockchain systems offer new opportunities for traceability to be delivered in leather production through decentralizing data. Providing a digital mechanism through which transparency can be in-built from the outset and the risk of fraud minimised. Blockchain systems push rather than pull data, digitizing inventory at a particular stage to create immutable records, enabling data to flow along with subsequent production. However, the longstanding impasse on data availability from the pre-slaughter stage hampers blockchain's potential, which has been able to be realised in other sectors for fibres including cotton and man-made cellulosic.
- **Technology Innovation:** Innovation in technology such as the IoT is an emerging area along with AI which offer opportunities to extend visibility and control within supply chains. IoT relies upon devices and technology such as sensors to capture data in real-time where devices are embedded in a product or at a facility level. Whilst AI is being utilised to process large datasets, digitize paper records about products and transactions and interrogate data to provide advanced analytics or detect anomalies. Advanced technologies require significant investment and a level of practical infrastructure which is lacking in many developing countries. However, mobile phones can play a crucial role here as a cost-effective means of accessing real-time data to monitor and track both livestock and leather production. User-friendly apps and utilising inbuilt GPS capabilities of phones mean traceability can be rolled out with minimal technical needs beyond proficiency of using a phone. This is of course reliant upon the extent of connectivity of phone networks which especially

for remote areas may be a challenge with scope to improve in the future.

- **Geographic Information Systems (GIS):** GIS Software is a computer system that combines maps and databases to analyse and display information about specific locations on Earth. It allows analysis of location data with descriptive information which can be valuable when considering farming locations as GIS can show buildings, streets, forest cover, and vegetation. Many traceability solution providers use some form of GIS Software and in preparation for the European Union Deforestation Regulation, there is a Global Forest Monitoring website[xvii] that works with satellites and GIS to represent and display any changes in forest cover. Many organisations now provide GIS system-based traceability solutions, although many rely on self-declared inputs which do not represent enough due diligence for meeting compliance needs. However, they can be a good resource for assistance in the evaluation of risk within existing supply chains.

To achieve traceability within complex value chains such as leather, and at scale, consistency of data and the ability to connect siloed datasets is critical. Work is underway within multi-stakeholder forums to agree on common standards for data terminology, metrics, and measurement of leather production (refer to Chapter 9 of this report for more information on this). Adopting common data standards will enable interoperability (the ability for different systems to exchange information) at multiple stages of the supply chain facilitating traceability and transparency. Developing countries where traceability is yet to be established should look to future proof their approach through adopting harmonized and internationally agreed standards for primary data capture.

# 10 GUIDELINES FOR TRACEABILITY AND TRANSPARENCY

# 10 GUIDELINES FOR TRACEABILITY AND TRANSPARENCY

These guidelines are intended to provide a practical step-by-step approach for any organisation seeking to create a traceability and transparency system. The guidelines take into account the expectations of legislation and the requirements of the 3rd party certification standards provided by LWG and SLF, along with the work being conducted within the Leather Traceability Cluster, all referenced in Chapter 9 of this report.

## 10.1 Traceability and Transparency Guidelines

### STEP 1 DEFINE OBJECTIVES AND SCOPE

The first step is to identify why you need traceability (i.e. for international customer requirements, regulatory compliance, ethical sourcing etc.). Determine the specific aspects of the leather supply chain that you wish to track and trace (i.e. animal birth to wet blue, finishing through to final product).

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### STEP 2 MAP THE VALUE CHAIN

- Identify Stakeholders: Start with a full representation of the leather value chain, from farm to finished product. Identify what part of the value chain you are positioned, and identify the companies you work with along that value chain.
- Map the Value Chain: Create a visual map of the value chain, detailing each stage and identify potential points of sustainability risk along that value chain.

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### STEP 3 ESTABLISH DATA EXCHANGE POINTS AND FORMATS

Define the key points at each stage of process where data should be exchanged and tracked, for example with every change of ownership or change of location. This can also include creation of batches for processing and segregation points as required.

Agree on the format of the data i.e. $ft^2$ or $m^2$, and ensure standardisation with all participants in your value chain.

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### STEP 4 ESTABLISH DOCUMENTATION

Define what documentation will be used to provide evidence. Use existing business information wherever possible, for example, invoices, dispatch notes, bill of laden, etc.

## STEP 5 LIST DATA REQUIREMENTS

The data that must be present within the documentation types, listed in Step 3, should include at a minimum:

- Date of transaction
- Originating address of material being sold
- Destination address of material being sold
- Material type (e.g. wet blue, fresh split, etc.)
- Species type (e.g. bovine)
- Unit measurement (number of items, weight and, area). Quantity can be expressed as: number of animals, number of pieces, weight (kg), area of finished leather (m2)
- Name of products manufactured (optional)

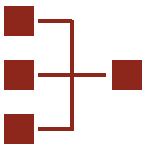
All documentation must clearly show the originating site name and address and the receiving name and address, which must correspond with the production/farming facility details.

## STEP 6 SELECT APPROPRIATE TECHNOLOGY OR TOOLS

Choose appropriate tools for support identification, for example stamping tool, RFID tags, bar codes, QR codes, etc.

Implement a centralised database system, either manual spreadsheet based or cloud-based solution.

## STEP 7 ESTABLISH TRACEABILITY SYSTEM



Establish a traceability system that must include:

- a description of the organization's activities within the supply chain
- a description of how different materials are handled to reflect any applicable requirements for due diligence and/or compliance (i.e. level 1, 2 or 3)
- procedures for data collection at each value chain stage
- a description of responsibilities for the management of traceability data
- recorded information describing traceability activities and the process, flows and results of traceability checks and audits
- records of any non-conformity according to the established traceability system, and actions taken to manage non-conformance
- records of any complaint according to the established traceability system, and actions taken to manage and respond to them
- the retention period of the records: the retention period can be determined by the company, dependent upon individual legal and regulatory requirements. In the absence of any legal requirement, the recommended retention period is 5 years.

## STEP 8 IMPLEMENT TRACEABILITY SYSTEM AND PROTOCOLS

Ensure that all stakeholders understand their roles within the traceability system and what their responsibilities are.

Establish how data will be shared along the value chain and for which purpose i.e. customers, regulators, or public.

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## STEP 9 ENSURE COMPLIANCE AND CERTIFICATION

Work towards obtaining 3rd party certification that validates the traceability and transparency system from organisations such as LWG or SLF.

Train and educate all stakeholders on the importance of working within a coordinated system of traceability and transparency.

Use tools like the SLF Transparency Dashboard to communicate the traceability performance in a transparent way for customers and consumers.

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## STEP 10 CONTINUED IMPROVEMENT

Continue to support improvement within the value chain to mitigate any sustainability risks or gaps in traceability that were identified during the value chain mapping exercise.

Keep stakeholders engaged and actively working towards a fully traceable value chain.

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**List of sustainability risks can be found in Appendix 2**
**Description of Leather Value Chain Actors and Processes can be found in Appendix 3**

# APPENDIX

# 11 Appendix 1: Leather Brand Policy and Reports Analysis

Table 2 Leather Brand Policy and Reports Analysis

| Brand/sector | Material targets | Leather targets | Traceability targets | Targets status | Rules/prohibited | DCF C2A |
|---|---|---|---|---|---|---|
| Adidas (Sports/footwear) | 90% of articles sustainable* by 2025 | DCF by 2030 or earlier as part of Call to Action | d Tier 1+2 expectations set in 2022 | 99% leather from LWG sources in 2022 | des of Indian or Chinese origin | X |
| Burberry (Luxury) | 100% raw materials certified or responsibly* sourced by 2030 | Overall requirements for certification of leather. Non-European sources only LWG recognised | Full traceability of key raw materials by FY 2029/30 | 100% leather from certified sources in FY 2023/24. Traceability pilots focused on cotton/synthetics/wool – 80% target for FY 2025/26 | Leather from tanneries in Bangladesh or Pakistan. Leather from cattle raised in Amazon & Gran Chaco biomes | |
| BMW Group (Automotive) | Material specific target not apparent online. Targets are focused on overall emissions | Material briefing provided online no specific targets | Pg 16 of supplier code has generic reference to traceability | Statistics on carbon emission reductions listed in annual report | None apparent online** | X |
| Clarks (Footwear) | Targets or status unclear in policies/reports** | G membership flagged generically | Targets or status unclear in policies/reports** | Targets or status unclear in policies/reports** | ow hides from India or Bangladesh | |
| Dr Martens (Footwear) | 100% sustainable materials by 2040 | LWG uppers by 2023 DCF by 2025 | 100% leather traceability to abattoir by 2024 | AW 2023 - 89% of leather uppers traced to abattoir | None apparent online** | |
| H&M (Mass market) | 100% materials recycled or sustainably sourced by 2030 | 100% chrome free by 2025 DCF by 2030 | Focus on tier 1/2 mapping target to slaughterhouse | 2023 - 85% overall 83% chrome free 79% LWG cert | 2019 ban on Brazilian leather not evident in policy documents** | X |
| Inditex (Mass market) | 030 100% of textile products from lower impact* materials | DCF by 2030 or earlier as part of Call to Action | Targets or status unclear in policies/reports** | Overall 68% of raw materials classed as 'preferred' in 2023 | None apparent online** | X |
| Kering (Luxury) | 100% suppliers meet Kering standards by 2025 | Targets unclear in policies/reports** | 100% of supply chain transparent by 2025 | 2020 report 88% traceable to country level | Fur prohibited | X |

| | | | | | | |
|---|---|---|---|---|---|---|
| Mulberry (Luxury) | ness to be regenerative and circular by 2030 | traceable to COO by AW21 | See Leather target | 100% leather from certified tanneries SS20 48% leather traceable to COO | None apparent online** | |
| Nike (Sports/footwear) | Targets for GHG emissions & waste only listed in reporting | Targets or status unclear in policies/reports** | Targets or status unclear in policies/reports** | Targets or status unclear in policies/reports** | Skins from China, India, Amazon, Cerrado or Gran Chaco | X |
| Puma (Sports/Footwear) | 9/10 products contain more sustainable materials by 2025 | Aim reach cattle ranch & DCF by 2030 latest | Generic references no specific targets apparent | 99.7% leather from LWG sources in 2023 | Fur prohibited | X |
| Tapestry (Luxury) | Create with care 2025 goals | 90% leather from silver/gold LWG by 2025 & 10% Regen | of materials mapped by 2025 | Goal surpassed 97% leather from LWG G?S sources | Fur prohibited and preferred sources listed for animal product origin | X |
| VF Group (Outdoor /Footwear) | Main targets for Cotton & Polyester | 100% LWG since FY20 | Published maps & all key materials traced by FY 2028 | In FY 23 65% of leather traced | Hides originating from cattle raised in Brazil | |
| Westwing (Interiors) | 50% of products labelled sustainable* by 2027 | >90% responsibly sourced animal by-products by 2026 | Targets or status unclear in policies/reports** | 17% responsible sourced animal by-products | None listed | |

*Denotes where brand has clearly defined what qualifies as 'sustainable' or 'responsible'
**Within the scope of research conducted metrics or references for this data was not found however

# 12 Appendix 2: Sustainability Risks in the Leather Value Chain

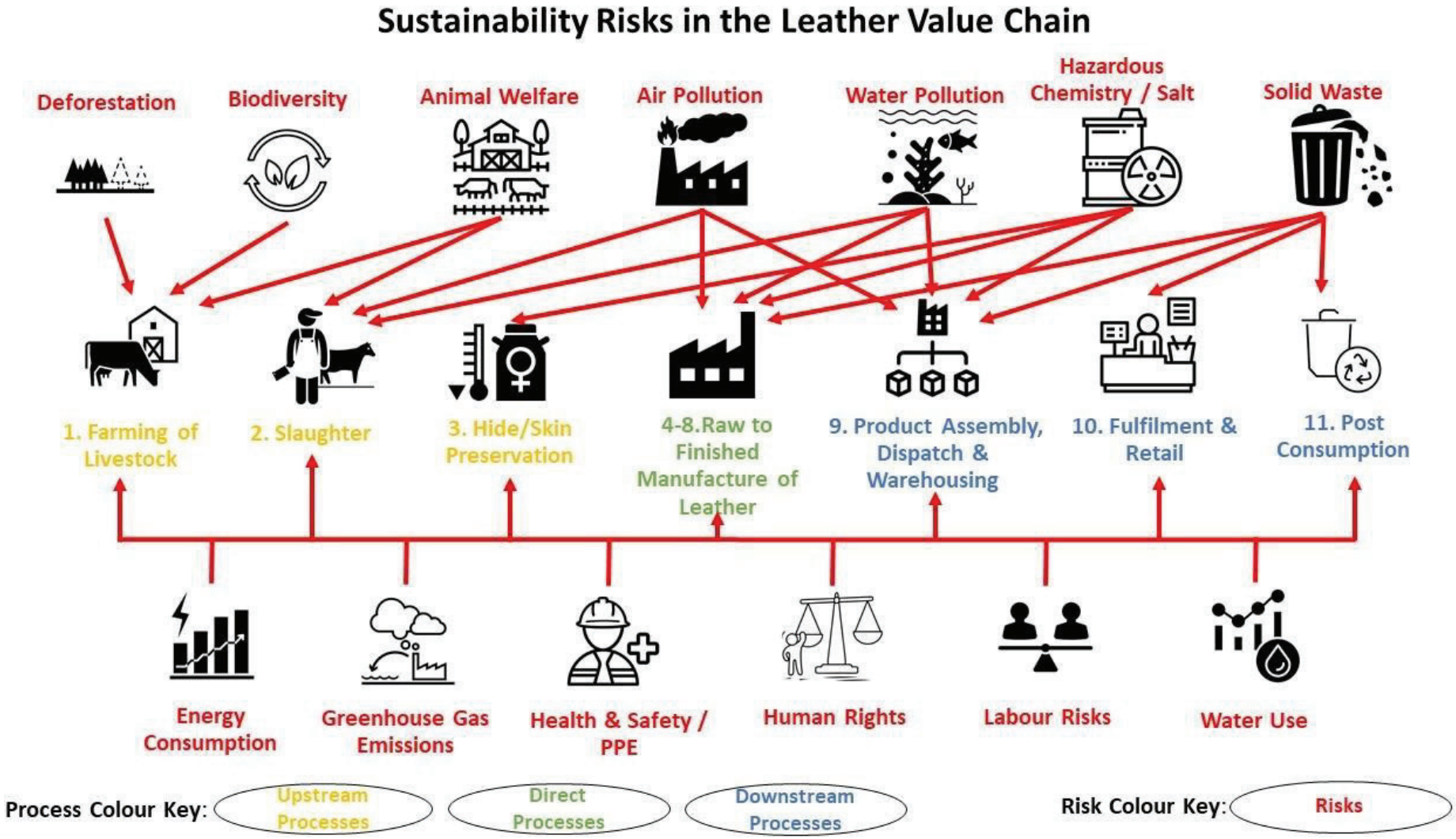



Figure 12 Sustainability Risks in the Leather Value Chain.

# 13 Appendix 3: Leather Value Chain Actors and Processes

*This work was prepared by the author for the UNECE Traceability and Transparency for Sustainability Value Chains in the Garment and Footwear sector. It was peer reviewed by industry representatives and experts, and approved as a good representation of the leather value chain:*

The purpose of this document is to offer a starting point for understanding the leather production landscape, by providing an outline of the processes necessary to convert the hides and skins from livestock and exotic animals into leather. Although this chapter does not look in detail at the risks and sustainability issues arising from leather production processes, it does introduce key topics such as *Animal Welfare*[1], *Hazardous Chemicals Use*[2], and *Biodegradability*[3]. These sustainability elements, as well as to related legislation and certification (i.e. CITES), will be covered in the detailed Business Process Analysis (BPA) in Chapter no. 2.

This chapter attempts to encompass the broad variability within leather production processes. In order to reduce the complexity of the model being described, we have created a generic value chain model that shows all processes once – even though not every manufacturer of leather will use every process, nor will they follow the processes below in the same sequence. The reader should consider the "direct" processes shown in the Use Case Diagram to be "modular" with the manufacturer having the ability to change their sequence or even to repeat them, according to the needs of the product and participating actors.

A separate glossary is published with definitions of the technical terms used in these three leather value chain chapters as well as other outputs supporting the UNECE Policy Recommendations and Guidelines on Transparency and Traceability of Sustainable Value Chains in the Garment and Footwear Sector for Leather and Textiles.

[1] **Animal Welfare** – OIE World Organisation for Animal Health, is the World Trade Organisation (WTO) reference organisation for standards relating to animal health. The OIE publishes 2 codes (Terrestrial and Aquatic) and 2 manuals (Terrestrial and Aquatic) as principle reference for WTO members. The codes aim to assure to sanitary safety of international trade in terrestrial animals and aquatic animals, and their products.
https://www.oie.int/en/animal-welfare/an-international-network-of-expertise/#A https://www.oie.int/en/standard-setting/terrestrial-code/access-online/?htmfile=titre_1.7.htm https://www.youtube.com/watch?time_continue=186&v=VCfG_Mt2KtY&feature=emb_logo
RSPCA Animal Welfare Standards: https://science.rspca.org.uk/sciencegroup/farmanimals/standards World Animal Protection Index: https://api.worldanimalprotection.org/

[2] **Chemicals, including risk of Chrome VI** – UNIDO's Framework for Sustainable Leather Manufacture (second edition), pages 106-107 give useful guidance on this subject:
https://leatherpanel.org/sites/default/files/publications-attachments/the_framework_for_sustainable_leather_manufacturing_2nd_edition_2019_f.pdf
Leather Dictionary reference: https://www.leather-dictionary.com/index.php/Chrome_VI_-_Chromium_VI SATRA article: https://www.satra.com/spotlight/article.php?id=478
REACH Annex XV11, Entry 47 Chromium VI Compounds: https://echa.europa.eu/documents/10162/1f775bd4-b1b0-4847-937f-d6a37e2c0c98

[3] **Biodegradability** – The International Standards Organisation (ISO) standard: ISO 2016:2020 Leather – Determination of degradability by micro-organisms: https://www.iso.org/obp/ui/#iso:std:iso:20136:ed-2:v1:en
System for biodegradability evaluation on leather used in the footwear industry:
https://www.researchgate.net/publication/289052625_System_for_biodegradability_evaluation_on_leather_used_in_the_footwear_Industry

**Livestock Hides and Skins:**

The leather value chain for livestock hides and skins is complex because leather manufacturers (tanneries) can provide different sets of production processes. Some tanneries perform the entire transformation process from the raw hide/skin through to the finished material while others will only perform a part of the process. This results in a range of "supporting" actors that may vary from one value chain to another, even for the same product.

These actors include: Agent Traders who buy and sell material at different stages; Agents who act on behalf of the brands to buy material from a number of sources to fulfil product manufacturing needs; Subcontractors who perform transformation processes on behalf of a tannery (they don't own the material but do participate in the production). These "supporting" actors add a level of complexity to achieving full transparency and accountability from a sustainable production perspective.

For the purposes of this project, sheep skin and hair-on-hide are recognised as livestock hides and skins.

**Exotic Skins:**

Some value chains for exotic skins function in a manner similar to those for livestock hides/skins, but, generally, exotic skins have more controlled value chains. This is primarily due to additional sensitivities and legal issues, but also because exotic skins are more prevalent in luxury items and the luxury brands are more likely to manage their value chain from farm to product. It is also more frequent for luxury brands to own their own farms, slaughterhouses and tanneries for exotic leather production.

Due to the increased consumer sensitivity and regulatory requirements when manufacturing leather from exotics, luxury brands are under stronger pressure to provide clearer mapping of value chains and tighter control. However, it should be recognised that good value chain mapping is also demonstrated by tanneries working with livestock hides/skins.

This chapter consists of:

**Part A: Identification and brief descriptions of leather value chain processes.** *(This is a brief overview of the processes and is not intended to be a comprehensive technical guide to leather manufacturing. As mentioned earlier, a comprehensive glossary of technical terms is published separately).*

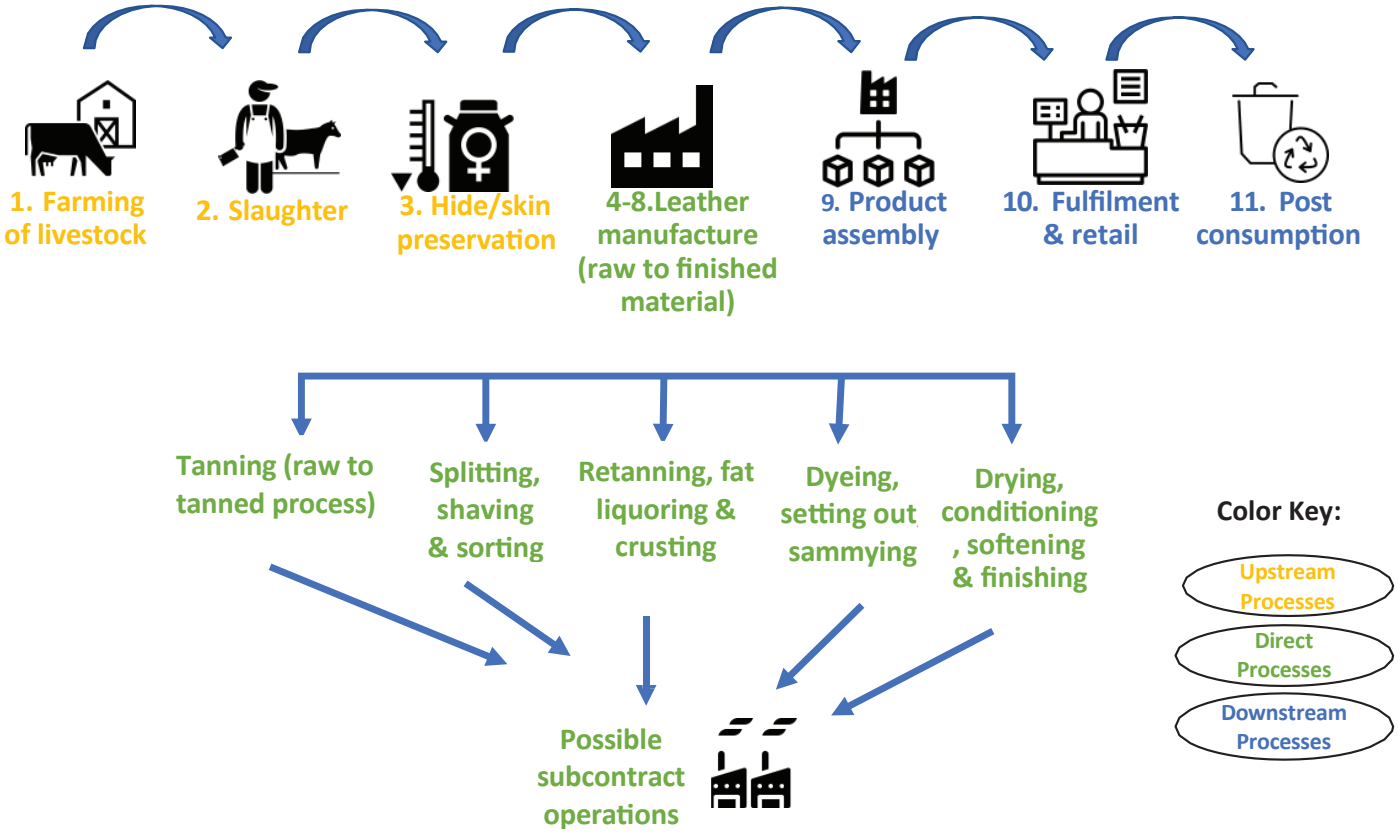
**Part B: Identification and brief descriptions of the actors in the leather value chain Part C: Use Case Diagrams – Leather Value Chains – Complex and Controlled**

## PART A – DESCRIPTION OF LEATHER VALUE CHAIN PROCESSES

The process steps in the manufacture of leather are broadly the same whether dealing with livestock hides/skins or exotic skins. Not all process steps are followed in every value chain, but they are all included here in order to cover the broad remit of leather production.

Presently, there is no specific process that is mandatory or widely recognised for traceability as part of the leather manufacturing process. As a result, within the processes described there are various points where identification for traceability could be applied to individual hides/skins, batches of material, product batches or even individual products. There are a number of different identifiers which are used in different parts of the value chain, including: ear tagging of livestock coupled with computerised or manual record systems at slaughterhouses, branding of livestock, physical stamping at the slaughterhouse or at receiving tannery, DNA marking, ceramic marking and laser marking of hides/skins at the tannery, etc. It is worth noting though that identifiers still pose challenges in terms of cost-effectiveness and scalability.

There is also no standard system or approach for tracking of chain of custody or for the collection of information that could be linked to identifiers (for example, on sustainability).
The process descriptions, as illustrated in the flowchart below, are numbered to correspond with the descriptions and the numbered processes in the Use Case Diagrams in Part C and the value chain production processes are separated at points where a change of ownership or custodianship could occur, i.e. in the case of sale of the goods or subcontracted operations.




**Flowchart of Key Processes in Leather Manufacture**

**Process 1:**

## Farming of livestock

Leather is manufactured from the hide or skin of an animal. There are various farming models:

- Farms that raise animals from birth to end of life
- Private or family small holdings
- Industrial systems that start with birthing farms, before moving livestock to rearing/raising farms and then moving the livestock to finishing yards (sometimes known as feedlots).
- Exotics systems that combine egg breeders/collectors, hatchling farms and finishing farms

Different factors affect the type of farming undertaken: socio-economic conditions, diary & meat industry practices, exotics farming practices, consumer expectations, geographic & regional limitations/restrictions/legal requirements.

Identification of livestock during farming takes place, which is generally achieved through the use of ear tagging or branding upon entry of livestock to the value chain (birth) and movement is monitored by computerised or manual tracking of the identification number/code on the ear tag/brand mark. Where these methods are utilised, livestock can be traceable from birth to slaughter. Without ear tagging or branding there is the possibility of manual tracing through batch identification, paperwork and invoicing, but even this does not always happen in some less-developed regions and the movement of animals can make it difficult to undertake tracing based upon paperwork alone.

**Process 2:**

### Slaughter

The slaughter of livestock commonly takes place in an industrial slaughterhouse or abattoir, where the animal is slaughtered with the meat (from livestock) going to be butchered and the hides/skins sent for leather making or other by-product manufacturing.

However, other kinds of slaughter take place, among these smallholdings or individuals who slaughter their own animals. This can, in some cases, result in poor animal welfare practices and cruelty to animals. This is an ongoing, sensitive issue in the meat industry, and it is considered that traceability and transparency of value chains can enhance the visibility of such practices and therefore allow more informed choices for producers and consumers. The leather industry can only influence the meat industry through dialogue and purchasing decisions, however, examples do exist of supply chain co-operation, that works to make sure that the source of meat as well as hides/skins comes from farming systems that have the highest animal welfare standards.

The slaughterhouse is the exit point for the animals' life and the entry point for hides/skins into the leather production process. The animal identification number/code will be recorded to complete the farming requirements, where they exist, via either an electronic or manual system. Some slaughterhouses physically mark hides/skins with codes that denote the place and date of slaughter before sale to the tannery and this information could, in theory, be passed to the tannery when the hides/skins are sold. The onward preservation, integrity and usefulness of the physical marking of hides and skins remains challenging though, during the subsequent transformation phases and also in consideration of commercially sensitive information.

Identification can be applied to hides/skins at many of the entry or exit points in the processes outlined below, either by a permanent mark that will stay with the material throughout the process or by individual identification/batch identification which is recorded or applied at the different manufacturing sites. Tracking of identifiers can be electronic or manual (through invoices, dispatch notes, bills of lading, etc). However, since there is no current standard method or requirement for this identification, from this point forward, it is not detailed as an existing routine process and will be addressed in Chapters 2 and 3.

**Process 3:**

### Hide / skin preservation

Some slaughterhouses have tanneries attached to them, for example some of the larger meat packing companies or integrated cooperatives have a production process that integrates slaughter, meat packing, and leather making. In this case, the hides are generally processed as "fresh" hides where no preservation is necessary, or "refrigerated" hides where ice is used within insulated containers for up to 3 days transportation/storage before transformation processes begin. This can be extended to 5-7 days if refrigerated trucks or containers are used for transportation.

However, for the majority of hides there is a longer transportation/shipping time from the slaughterhouse to the purchasing tannery and, therefore, it is necessary to "preserve" the hide/skin from breaking down and deteriorating.

The most common form of preservation for hides and skins is "salting", however, other methods used include: "drying", "bactericides", "brine curing", and "lowering water activity" (reducing water content to inhibit bacterial activity). "Pickling" and "tanning", which are also used in intermediate stages in leather manufacture, can also be used for preservation. These last two methods are detailed further in the following processes.

During the preservation stage, some initial sorting and grading of the hides/skins will also take place. This process allows for the material to be grouped according to quality and size, and this can be repeated at various production stages.

**Process 4:**

This process groups a number of activities which, combined, form the first transformation stage from a raw hide/skin to tanned material. Usually, these activities take place in one facility.

### Soaking, liming and fleshing

The first transformation step in a tannery is to rehydrate the hide to the optimum state for tanning. The procedure followed will vary slightly depending on the preservation method used. Once optimum hydration through soaking is reached, the hides/skins are "unhaired" (unless sheepskin or hair-on-hide) and "limed" where a combination of chemicals are used to open up the fibre of the hide and to remove the hair and epidermis. It is important that the liming process is carried out with care in order to (a) maximise the surface yield without over relaxing the structure of the hide/skin or damaging the grain and (b) prevent excessive pollutants in the effluent. The liming process is crucial to the end quality of the leather.

Fleshing, where any residual tissue, fat or remnants are removed by manual or mechanical knives, takes place after liming, however, this could be carried out in advance (in between the soaking and liming) particularly when processing sheepskin or hair-on-hide material where the unhairing process is not required.

At this stage, the hides/skins can also be split (see Process 5) where the hide is put through a mechanical blade to split the material into two pieces – the top split will be processed for leather and the drop (bottom) split can be used for the production of by-products such as gelatine and medical ingredients for ointments, etc.

### Deliming and bating

The residual lime must then be removed/neutralised, and this is generally done using ammonium salts, weak acids or other deliming agents. Carbon dioxide can be used to minimise the amount of chemicals required for deliming.

The hides are then "bated" where enzymes are used to remove any residual hair/cells and to soften and improve the elasticity of the hide. Different enzymes create different effects in the leather and can be used to achieve different performance qualities for the end product.

### Degreasing and pickling

Degreasing takes place to remove natural fats that are more prevalent in some types of livestock (for example sheepskin) in order to prevent non-conformity in later processes; for example, dye absorption, spew (formation of white surface deposits on the leather) or to prevent dark or greasy patches in the finished leather.

Pickling is a process using acids and salts to reduce the pH of the pelt to a suitable level for tanning with chromium or other minerals. It is not necessary for vegetable tanning (see more on tanning types below).

### Tanning

This is the first full transformation stage from the hide/skin to leather.

There are three main methods used for tanning – "Chrome Tanning", "Synthetic Tanning", and "Vegetable Tanning". Each of these methods has different production requirements with varying environmental impacts or considerations, and each can provide different commercial and technical performance results.

**Chrome tanning** is the quickest and most cost-effective method and can be used to produce any leather type except for sole leather which is made using the vegetable tanning method. Chrome tanning is achieved using Chrome III, a non-toxic chemical, in rotating drum vessels with a relatively quick processing time and results in "wet-blue" material, called this because of its blue-green appearance. It is reported (UNIDO 2019) [4] that while there is a risk of the formation of Chrome VI in leather (a very low-intensity allergen) when using this tanning method, this only occurs if the tanning process is not carried out correctly.

**Synthetic tanning** (chrome-free or metal-free) uses a similar process to Chrome tanning but with synthetic substances and vegetable compounds to stabilise the material and this process results in "wet-white" material, so called because of its whiteish colour. This process can be more costly and requires more controls than Chrome tanning.

**Vegetable tanning** is achieved using natural tannins from wood, leaves, tree bark and fruits, and is the oldest method of tanning leather. This traditional process uses a series of large open vats and can take from 30 to 60 days. Options for use and colour can be more limited and this method is most commonly used for the production of shoe sole leather or other heavy leather applications. Vegetable tanning produces a brown- coloured leather that can be dyed to another colour. The use of drums can also be adopted, and this can speed up the process resulting in a softer or lighter leather for linings and leathergoods.

### Sammying

Also referred to as "sammying", this is the process of passing the tanned material through rollers to remove excess water and reduce wrinkles/folds.

**Process 5:**

### Splitting (if necessary)

Leather can be split at this stage to reduce the thickness of the original hide. This results in a top "grain split" used for shoes, gloves, purses, clothing, and the "flesh split" leather (bottom part of the hide), often known as split suede which can be finished/coated and used for clothing, shoes, gloves, and bags. Whether the leather is split or not depends on the thickness of the original hide/skin and its intended application. With very thick or heavy hides it is also possible to create a "middle split".

### Shaving and sorting

The material is passed through shaving machines with very precise blades to ensure uniform thickness of the material before sorting it into quality grades ready for the next stage.

[4] UNIDO's Framework for Sustainable Leather Manufacture (second edition), pages 106-107 give useful guidance on this subject: https://leatherpanel.org/sites/default/files/publications-attachments/the_framework_for_sustainable_leather_manufacturing_2nd_edition_2019_f.pdf

**Process 6:**

### Retanning/fat Liquoring

This important process varies according to the desired end result. The process is adjusted for different leather types (i.e. split leathers, nubuck, suede) and different leather uses (i.e. shoe uppers, garments, upholstery and bags). Retanning is used to improve or modify the characteristic properties of the material for look, feel, buffing and dyeing, water resistance, and colour fastness.

Fat liquoring (or oiling the leather) also occurs at this stage to lubricate the fibres of the material for appearance, feel and durability.

### Crusting (if necessary)

Some tanneries will not need this stage if they are transforming their material from raw hide all the way into finished product. However, if the tannery is selling the leather to be finished in another tannery, they may dry the material to a "pearl crust leather" state before sale. Tanners may also dry their material to store it until they have order requirements (especially colour) for specific finishes, or it may not be carried out until post-dyeing resulting in a "dyed crust leather".
Essentially crust leather is just the dried state of the tanned/retanned/fat liquored/dyed material.

**Process 7:**

### Dyeing

The leather is dyed using chemical dyes (all colours) and pigments (especially white) to achieve the desired end colour. This relies on a good understanding of how dyes work along with strict controls and processes to ensure that colours between batches remain consistent. Rates of exhaustion (amount of dye taken up by the material divided by the amount of dye used) are also crucial to ensure colour fastness and light fastness (resistance to fading when exposed to light or water).

### Setting-out/sammying

Removal of excess water takes place again by passing the re-tanned and dyed material through mechanical rollers.

**Process 8:**

### Drying

There are two main methods of drying leather – air drying where the leather is suspended on racks above the tannery floor (sometimes combined with passing the leather through drying tunnels with controlled temperature and humidity) or vacuum drying where the moisture is removed by heating the leather and suctioning up the water vapor. Other methods include pasting (where the leather is pasted on a smooth surface and heated in a drying tunnel) and toggling (where the leather is stretched and fixed on a metallic frame before heating in a drying tunnel). Often, Process 8 also is done before Process 6, if a crusting strategy is being used but it then has to be repeated after the dyeing step.

### Conditioning and softening (including staking and milling)

After drying, the leather is mechanically staked (a pummeling action) to soften and improve the appearance of the material. The machinery used is either a rotary or vibratory staking machine for staking, or a dry drum for the milling form of softening.

### Finishing

During finishing, the leather is given final treatments to suit the end product requirements. This could involve embossing, printing and other techniques including adding a shine or dulling down the appearance of the leather.

Further shaving (buffing) could also take place at this stage. The finishing process can involve coating additional surface layers onto the leather to add colour, smoothness, surface protection, durability, or fashion effects. Finishing chemicals can include colourants (e.g. dyes and pigments), film-forming materials (e.g. polymers) and other auxiliaries to create specific characteristics. A heat transferred foil application can also be applied in this finishing stage.

The leather is then sent for quality control, grading, measurement, and packaging before dispatch to the product producer/manufacturer/brand.

**Process 9:**

### Product assembly

Transformation into the finished product (apparel, handbags, shoes, belting, accessories) may take place at a brand facility or at an intermediary factory. The product assembly can involve re-finishing the leather to add effects or enhance durability.

The leather is cut out, sewn together, backed, punched, etched, or molded to take on the shape of the final product.

**Process 10:**

### Fulfilment / retail

Product sale to consumers and end users. The in-life (consumer use) of leather is characteristically devoid of washing cycles. Leather, unlike textiles, does not generally get washed, so avoids water and energy use in- life.

**Process 11:**

### Post consumption

This could be re-cycling, re-use, re-purposing or waste disposal. Leather is a good example of a material that can be recycled and reused and there are organisations who specialise in transformation and restoration of leather.

Leather has historically been manufactured to provide longevity which is why it is seen as a high-quality, durable material. Some leather may not be suitable for biodegradability success as a result of finishing applications (foils, bonded leather, etc). Innovation and technology are developing leather production methods that result in the material starting to biodegrade after a pre-determined period of time.

## PART B – ACTORS IN THE LEATHER VALUE CHAIN

In order to better understand their roles in transparency and traceability, this section provides an overview of the primary actors in the leather value chain as shown in Part C. Not all actors will participate in every value chain.

### Farmer / Breeder:

Breeders, raisers, finishers, small holdings, individuals, and industrial production farmers.

### Farm Supplier:

Suppliers of feed, equipment, animal health products and services.

### Transporter Product Guardian:

Transportation companies are involved throughout the value chain as animals are moved, hides/skins are shipped and then moved from manufacturer to manufacturer before final dispatch to the consumer.
Transportation is also involved in the delivery of chemicals and other supplies to the tanneries, etc.

### Slaughterhouse:

The actors within the slaughter process will vary within different regions/countries and can include a mix of slaughterhouses, individuals, meatpackers, and hide/skin collectors/processors.

### Tanner:

Different categories of tanneries implement different combinations of leather treatment processes the most common of which include:

- Raw to pickled/pre-tanned
- Raw to wet blue/white/veg (tanned) Raw to crust
- Raw to finished
- Wet blue/white/veg (tanned) to crust Wet blue/white/veg (tanned) to finished Crust to Finished

Tanners own the leather they are treating, otherwise they are subcontractors.

### Agent / Trader:

Organisations that buy material from slaughterhouses or tanneries and sell it to other tanneries (sometimes pre-tanned, sometimes part or semi processed and sometimes finished material; or a combination) and importers/exporters who buy and sell material. Some agents/traders may carry out a mechanical process (i.e. splitting) on semi processed leather before selling it on; however, if the process is a transformation process or uses chemicals to alter the leather then the agent/trader would be classed as a tanner.

### Subcontractor:

Organisations who perform transformation operations on behalf of a tannery but do not own the material (sometimes this can also be another tannery with spare capacity that does work for the owner tannery).

### Product / Service Transformation Supplier:
Chemical companies, machinery companies and other suppliers who provide materials/equipment to enable the transformation from hide/skin to leather.

### Service Provider – Waste Services / Treatment:
Waste disposal providers, common or municipal effluent treatment plants, recycling centres.

### Inspector / Certifier – Testing Services:
Testing houses that test and certify that the leather produced does not contain harmful substances above legislative limits or that chemicals used to perform the transformation do not contain banned substances. Other tests are performed to check colour fastness, physical performance, flammability, disintegration, and biodegradability.

### Inspector / Certifier – Auditing and Certification:
Organisations that audit or inspect and certify compliance with traceability, environmental performance, social good practice and governance good practice, in order for the tanneries and brands/retailers to make sustainability claims about their products.

### Manufacturers – Garment / Product:
Organisations who transform finished leather into garments and products and dispatch them to brands/retailers.

### Warehouser Product Guardian:
Storage, packing, and dispatching of finished goods to retail stores or direct to online consumers.

### Brand Owner / Retailer:
Brands and retailers have multiple responsibilities, at the design and product concept step in the value chain, in selecting material and sourcing strategy, and also in the marketing and final sale of goods to consumers. Brands and retailers may also be involved at various stages along the value chain to ensure quality and standards are maintained and can be involved in the collection and recycling of products at end- of-life.

### Traceability / Transparency Information Requestor:
Many of the actors within the leather value chain, as described above, could be requestors of traceability; farmers (within the farming system model), slaughterhouses, tanners, certifiers/inspectors, product manufacturers and brands. The type and depth of traceability and transparency requested will vary, depending upon the purpose.

## PART C – USE CASE DIAGRAMS

The following Use Case Diagrams show the flow of interactions within the leather value chain.
The oval descriptions running down the center of the diagram list **the major processes described earlier**. Running down the left-hand side of those process ovals are **the actors who initiate processes**. The actors that run down the right-hand side are the **service providers/product suppliers** that undertake processes initiated by the actors on the left.
Occasionally, an actor participates on both sides, although they are only shown on one, with an explanatory note. For example, in the leather value chain an Agent/Trader is generally a service provider, but may also, at times, initiate a physical process such as the splitting of material.
The following two diagrams are designed to cover a complex value chain and a more controlled value chain. The "Transportation Product Guardian" and "Certifier/Inspector" are service providers/product suppliers in the same way as the other right-hand side actors, however, for illustrative purposes (to prevent the use case diagram from containing too many lines), they have been placed on the far right because they can contribute to all the processes in the value chain.
Within the Use Case Diagram for the complex leather value chain example, not all processes will necessarily occur in the sequence shown and some processes may occur more than once. This is an illustrative example given that there are many varied value chain models within the leather industry. The process groupings in this example show where possible transfers of ownership or production could take place (but do not always).
The Use Case diagram processes have been classified and colour coded to represent:

- **Upstream Processes**: Those processes that relate to the raw material production (i.e. farming, slaughter and preservation)
- **Direct Processes:** Those processes that are directly under the control and influence of the tanners / leather manufacturers (i.e. the physical transformation activities from raw hides/skins to finished leather)
- **Downstream Processes:** Those processes that are conducted post-leather manufacture i.e. product manufacturing, product sale, etc.)

## USE CASE DIAGRAM 1- LEATHER VALUE CHAIN COMPLEX

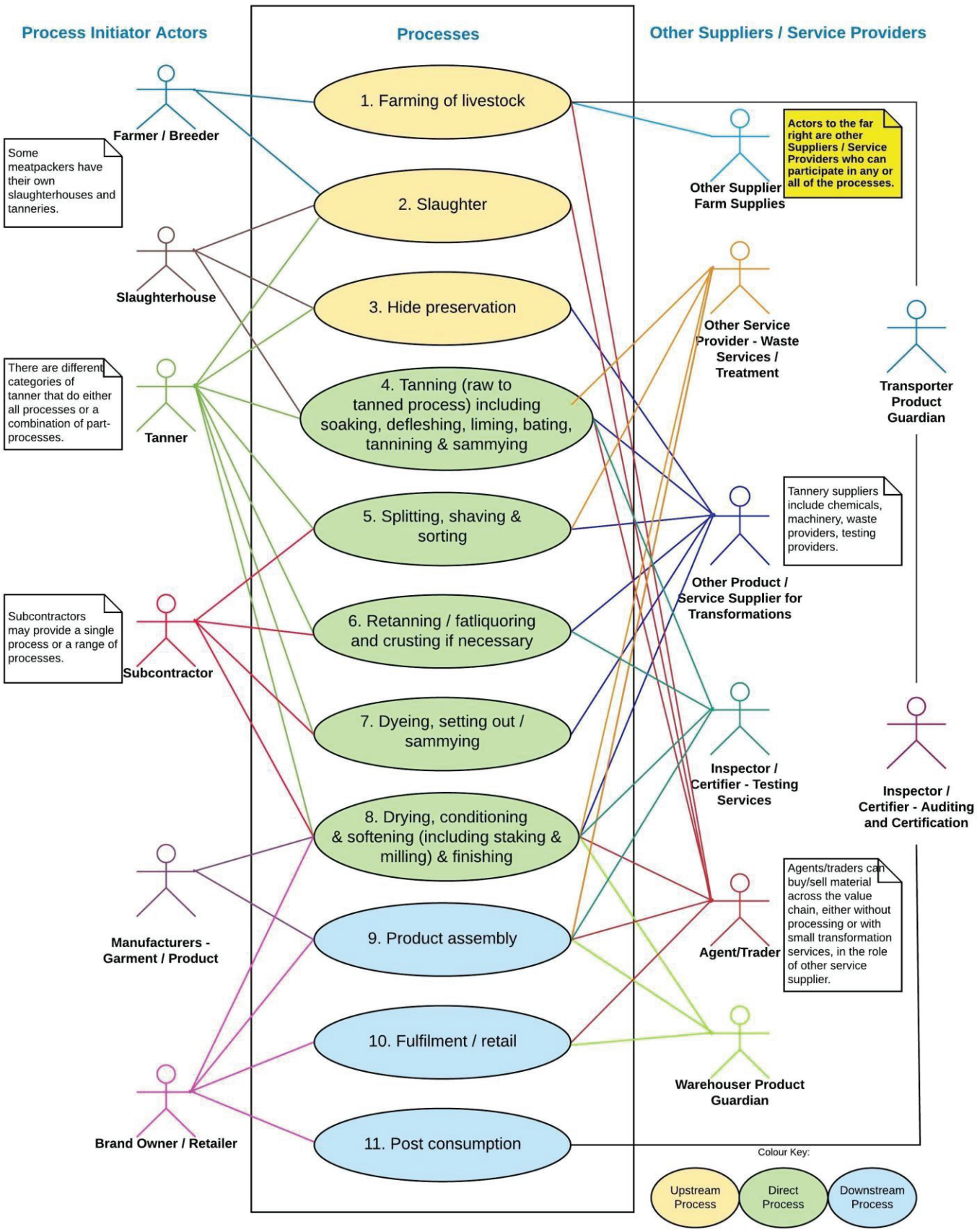



Figure 13 Complex Leather Value Chain.

## USE CASE DIAGRAM 2 - LEATHER VALUE CHAIN CONTROLLED

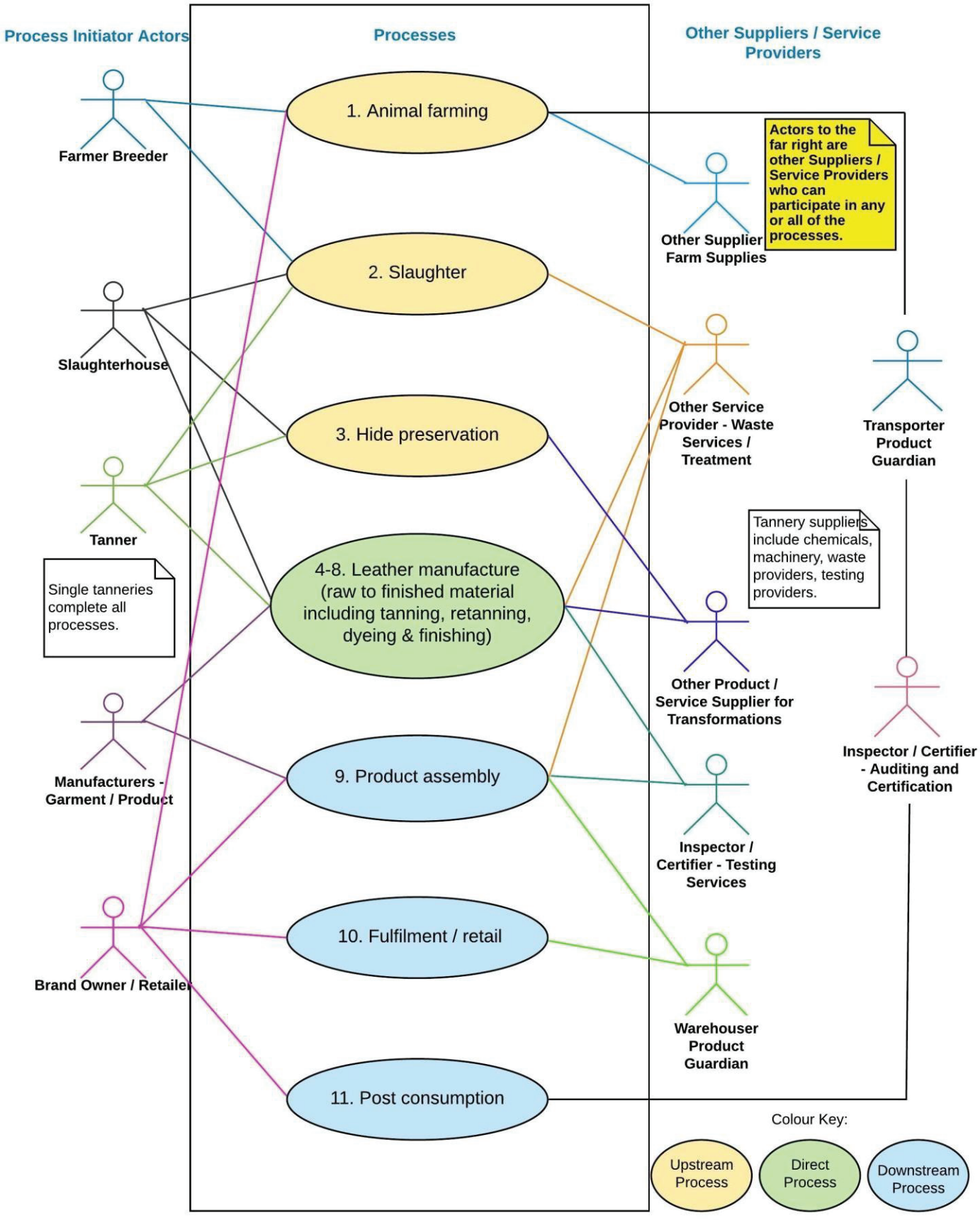



Figure 14 Controlled Leather Value Chain.

# REFERENCES

# 14 REFERENCES


[i] Food and Agriculture Organisation of the United Nations (FAO) https://www.fao.org/pakistan/our-office/pakistan-at-a-glance/en/

[ii] Pakistan Governance Finance Report, Chapter 2, Agriculture https://finance.gov.pk/survey/chapter_24/2_agriculture.pdf#:~:text=Animal%20husbandry%20is%20a%20cornerstone%20of%20Pakistan's,by%20accounting%20for%20around%2035%2D40%20percent%20of

[iii] Pakistan Governance Finance Report, Chapter 2, Agriculture https://finance.gov.pk/survey/chapter_24/2_agriculture.pdf#:~:text=Animal%20husbandry%20is%20a%20cornerstone%20of%20Pakistan's,by%20accounting%20for%20around%2035%2D40%20percent%20of

[iv] European Union Deforestation Regulation https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en

[v] European Union Corporate Sustainability Reporting Directive https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

[vi] European Union Corporate Sustainability Due Diligence Directive https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en

[vii] UK Forest Risk Commodities annex to the Environment Act 2021 https://www.legislation.gov.uk/ukpga/2021/30/schedule/17

[viii] New York Fashion Sustainability and Social Accountability Act https://www.nysenate.gov/legislation/bills/2023/S4746/amendment/A

[ix] European Union Green Claims Directive https://environment.ec.europa.eu/topics/circular-economy/green-claims_en

[x] United Nations Global Compact Office, A Guide to Traceability A Practical Approach to Advance Sustainability in Global Supply Chains (New York, 2014). Available at: https://d306pr3pise04h.cloudfront.net/docs/issues_doc%2Fsupply_chain%2FTraceability%2FGuide_to_Traceability.pdf

[xi] European Commission, A Background Analysis on Transparency and Traceability in the Garment Value Chain (2017) https://ec.europa.eu/international-partnerships/system/files/european_commission_study_on_background_analysis_on_transparency_and_traceability_in_the_garment_value_chain.pdf

[xii] Leather Working Group https://www.leatherworkinggroup.com/

[xiii] Sustainable Leather Foundation https://sustainableleatherfoundation.com/

[xiv] European Commission Deforestation Platform https://green-business.ec.europa.eu/deforestation-regulation-implementation_en European Commission Multi-Stakeholder Platform https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupId=3282&fromMeetings=true&meetingId=23741

[xv] United Nations Economic Commission for Europe: Traceability and Transparency for Sustainable Value Chains in the Garment and Footwear Sector https://unece.org/trade/traceability-sustainable-garment-and-footwear

[xvi] In scope commodities include: cattle, cocoa, coffee, palm oil, rubber, soy, wood; and derived products including chocolate, furniture, paper, tyres and leather https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en

[xvii] EU Observatory on deforestation and forest degradation https://forest-observatory.ec.europa.eu/forest/gfc2020

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