



# TECHNICAL BRIEF

## TRACEABILITY IN THE LEATHER SUPPLY CHAIN

### INTRODUCTION

Pakistan's leather sector is the country's third-largest export industry, contributing approximately four percent to national GDP and supporting over one million livelihoods. Pakistan is a key supplier of leather goods to Europe, USA and Asian markets. The leather sector of Pakistan can be categorized into these segments: finished leather, leather footwear, leather garments, leather gloves, accessories such as bags, wallets, and similar items. Beyond its product categories, leather is not merely worn but experienced-it reflects a rich heritage, skilled craftsmanship, and timeless sophistication. As a material, it carries both cultural and functional value, combining durability with authenticity, and continues to represent quality and tradition across global markets. As global regulatory and market expectations evolve, supply chain traceability has shifted from a voluntary sustainability measure to a regulatory and commercial requirement in many countries.

Emerging legislation such as the EU Deforestation Regulation (EUDR), Corporate Sustainability Reporting Directive (CSRD), Corporate Sustainability Due Diligence Directive (CSDDD), the UK Forest Risk Commodities Act, and the New York Fashion Sustainability Act require companies to demonstrate traceability, responsible sourcing, and risk mitigation across entire value chains. In this context, the leather sector, although utilizing hides as a by-product of the meat industry, must provide verifiable origin data and transparent processing records.

Traditionally, due to a fragmented supply chain, informal and unmechanized slaughtering, Pakistan lacked a structured, digitized system capable of tracing hides from origin to finished product. Manual documentation and limited digital integration restricted the sector's ability to demonstrate compliance, ensure ethical sourcing, and build buyer confidence.

Under the project 'Pakistan Leather Sector: Traceability, Cleaner Production and Circularity', the traceability pilot was designed to establish a robust digital backbone for end-to-end leather traceability in Pakistan. The result is [tracemyleather.com](https://tracemyleather.com), a fully operational digital traceability platform that tracks leather from supplier and slaughterhouse to tannery and finished product.

The system was developed through a multi-stakeholder technical consortium including WWF-Pakistan as the project lead; Information Technology University (ITU) as technical partner for traceability toolkit (web-based dashboard and mobile application) development; Punjab Agriculture and Meat Company (PAMCO) for upstream supply chain integration through data capturing, database development and tagging of hides; and Leather Field Pvt. Ltd. for industry linkage and piloting of toolkit within tannery.

### OBJECTIVE

To design, develop, pilot, and operationalize a digital traceability system enabling end-to-end tracking of leather from supplier to finished product, thereby strengthening transparency, compliance readiness, and international market access.

# THE PROCESS



## Technical Component

*tracemyleather.com* is the digital traceability system which follows a structured digital process, ensuring transparency in data integrity and continuity across the supply chain. All supply chain actors register through a structured onboarding process primarily bifurcated by operational roles i.e., slaughterhouse, tanneries and garment units.

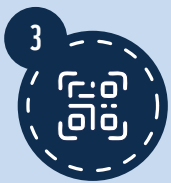
This system tracks the raw material from the direct animal supplier to the finished leather product, ensuring transparency along the supply chain:



## Supplier Registration

Suppliers and their animals are officially registered in the digital toolkit at the slaughterhouse, establishing the raw material's initial origin data.

Supplier registration requires basic identification details including name, CNIC (computerized national identity card) number, and location to establish verified supplier profiles within the system. As of now, the platform has successfully onboarded over 2,000 suppliers, of which more than 330 are currently active participants in the digital traceability system.



## Unique Code Assignment

Once an animal is slaughtered, each hide is assigned a unique digital identifier and a QR code carrying key information such as the supplier's details, animal type, date of slaughter, and region. So far, around 200,000 hides have been tagged and recorded digitally under the project.



## Tannery Integration

When the hide reaches the tannery, its unique digital identity number or the QR code is scanned, and the associated origin data is automatically retrieved from the central digital system.

### 4.1 Permanent Identification at Tannery

A key feature at this stage is the use of cut-through stamping, which applies a tannery code directly onto the hide. This links physical and digital traceability and records the hide as arrived in the system. The code remains visible throughout all chemical and mechanical processing stages, allowing the hide to be tracked as it moves through different stages until it is converted into finished leather.

### 4.2 Process Dispatch

The tannery code is used to record further details including tanning type, article type, the tannery's internal lot number, etc. Followed by selecting or creating the receiving party's profile, if needed. Once all details are entered, the hide is marked as dispatched.



## Product-Level Traceability

The unique tannery code on the leather is entered, confirming its arrival. During products manufacturing, details like leather pieces used, tannery codes, brand profile, and product specifications (images, processing date, lining, hardware, etc.) are recorded. A final QR code is generated, printed, and attached to the product, linking it back to the direct supplier and the slaughterhouse and ensuring complete traceability throughout.



## Traceability Achieved

The final leather product can now be traced all the way back to its original supplier, and in some cases, even to the direct supplier farm.

The digital traceability toolkit has been designed with strong safeguards to ensure data integrity using blockchain, operational reliability, and long-term sustainability. All transactions are automatically timestamped and geotagged as per the time and location of the transaction. This ensures full visibility of chain-of-custody transfer between supplier, slaughterhouses, traders, tanneries, and garment units.

Regular onboarding sessions and hands-on technical training were conducted to minimize operational risks, standardize data entry practices, and ensure consistent system adoption across the value chain.

## CONCLUSION

The pilot therefore moved traceability in Pakistan's leather sector from a conceptual aspiration to a scalable digital traceability infrastructure. By integrating supplier, QR code-based tracking, geolocation logging, cut-through tannery stamping, and product-level identification, the project has facilitated digital traceability from supplier to slaughterhouse to finished leather product, with over 330 active suppliers and around 200,000 hides tagged until June 2026. The system prepares the sector for export competitiveness, reduces regulatory and reputational risk, enhances buyer confidence, eliminates unverifiable sourcing claims, and improves data-driven supply chain transparency.

It provides the foundational digital backbone required for reporting, international compliance alignment, and future expansion toward farm-level geolocation, positioning Pakistan's leather sector for transparent, accountable, and future-ready participation in global markets.

*Disclaimer: The UK Government funds this pilot activity of traceability as part of the project "Pakistan Leather Sector: Traceability, Cleaner Production and Circularity" through UK International Development and SMEP Programme; however, the views expressed do not necessarily reflect the UK Government's official policies.*