



Sustainable Manufacturing and
Environmental Pollution

The Leathertrace Bangladesh Policy Blueprint:

A Strategic Roadmap for Enhancing the
Adoption of Digital Traceability
in Bangladesh's Leather Sector



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DISCLAIMER

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Authors:

Ebenezer Laryea, Amin Hosseinian-Far, Amanda Relph, Francesca Gagliardi, Oluwaseyi Omoloso, Chijioke Dike Uba, Emmanuel Vanger, Anne Lama, Md. Kauser Ali, Md. Mizanur Rahman, ASM Shahidul Haque, Deborah Taylor, Dr Angela Okeke, Evelyn Ameyaw

Affiliation(s):

Aston University, University of Northampton, University of Hertfordshire, iDEA TREE, SERA Bangladesh, Sustainable Leather Foundation, Sustainable Manufacturing and Environmental Pollution Programme (SMEP), United Nations Trade and Development (UNCTAD)

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1. EXECUTIVE SUMMARY

Global trade in leather and leather goods is undergoing a structural shift as sustainability, due diligence, and deforestation-related regulations have increasingly come to shape market access for leather exporters. In this state of affairs, digital traceability has emerged as an enabling compliance tool, often used alongside documentary evidence, which allows regulators, buyers and consumers to verify the origins of products, the upstream land-use practices, environmental performance, and social conditions associated with the production and distribution across complex supply chains.

In the European Union for example, due diligence policies have been enacted with obligations requiring EU-based operators to collect and submit verifiable geolocation and supply-chain traceability information (including due diligence statements) before placing 'in-scope products' on the EU market. Similarly, in the United Kingdom, comparable but narrower forest-risk commodity due diligence provisions exist under the Environment Act 2021, albeit that these require secondary legislation to come into force and remain in an evolving implementation phase.

Bangladesh's leather and leather goods sector - one of the country's most important export industries - is directly affected by these developments. As leather is derived from cattle (a forest-risk commodity under some international due diligence regimes), Bangladeshi exporters must therefore demonstrate robust upstream traceability to international market operators. In practice, this shifts data and verification requirements upstream, meaning Bangladeshi exporters will increasingly need to provide verifiable geolocation and chain-of-custody information to their international counterparts to maintain market access to international markets. However, persistent challenges related to environmental performance, fragmented supply chains, limited digital infrastructure, and weak policy coordination have constrained the sector's ability to meet these rapidly tightening requirements.

Despite the existence of multiple laws, standards, and initiatives relevant to environmental regulation, livestock management, trade facilitation, and digitalisation, Bangladesh currently lacks a comprehensive, sector-wide policy framework to systematically support the adoption of digital traceability technologies in the leather sector. In the face of this gap, the Leathertrace Bangladesh project was initiated in August 2024 with funding from the Sustainable Manufacturing and Environmental Pollution (SMEP) Programme to develop and pilot a digital traceability and environmental footprint system, tailored to the structural and regulatory realities of Bangladesh's leather value chain while generating policy-relevant evidence to support national-level reform.

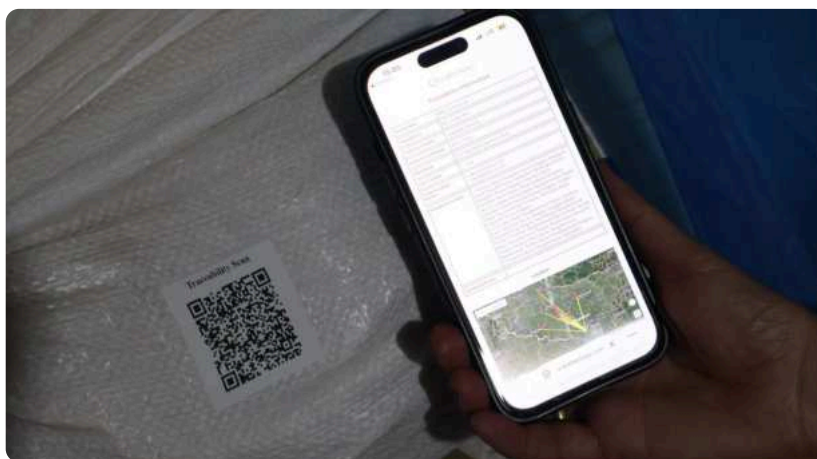
This report makes an original contribution by presenting the Leathertrace Bangladesh Policy Blueprint, a comprehensive and evidence-based roadmap for accelerating the adoption of digital traceability across the leather sector. Developed through a co-creation research methodology, the blueprint demonstrates its relevance in proposing eleven interdependent policy pillars covering governance, legal frameworks, standards, financing, capacity building, digital infrastructure, and enforcement – with each pillar underpinning a corresponding set of policy goals and actions. Together, the elements of this policy blueprint are designed to enhance the wide adoption of traceability technologies within the leather sector in Bangladesh, thus ensuring its trade competitiveness and continued access to high-value global markets.

¹ After the completion of this report, the European Commission published, on 4 May 2026, a simplification package for the EU Deforestation Regulation, including a draft Delegated Act proposing amendments to the list of products covered by the Regulation. The draft proposal includes the removal of leather, hides and skins from the EUDR product scope. This development does not remove the broader commercial and policy relevance of digital traceability for Bangladesh's leather sector, particularly in relation to buyer due diligence, responsible sourcing, chain-of-custody verification, environmental compliance, certification readiness and future market-access expectations. At the time of writing this update, the proposed Delegated Act remains subject to the relevant EU process, including public feedback open until 1 June 2026.



2. INTRODUCTION

Traceability is a multifaceted concept which involves systematic tracking and recording of information about each phase of a product's lifecycle (Keogh et al., 2020). It is defined by the International Standardization Organisation (ISO) 9000 as the “ability to trace the history, application or location of an object” (ISO, 2015). Moe (1998) also provides a more elaborate definition of the concept, as “the ability to track a product batch and its history through the whole, or part, of a production chain from harvest through transport, storage, processing, distribution and sales” (Moe, 1998).



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Traceability serves as a means of ensuring both the safety and quality of products (Portarena & Brugnoli, 2016). Additionally, it plays a crucial role in ensuring regulatory compliance is attained at every stage of a supply chain, albeit that much depends on the specific nature of regulations that guide the product being produced (Souali et al., 2017). This, in turn, promotes accountability and transparency in a production process (Cromwell et al., 2025).

Traceability has deep historical roots and has evolved significantly over time. Early forms appeared in ancient practices such as ear incisions and body markings used to identify livestock and prove ownership (Blancou, 2001; Bai et al., 2017). Before modern traceability technologies, traders relied on manual ledgers, stamps, and other basic record-keeping systems to track goods across trade networks (Thylstrup et al., 2022). In the early twentieth century, traceability became more formalised, with several European countries introducing origin-labelling systems for products such as champagne to certify quality and provenance (Irfan, 2020). Since then, traceability systems have expanded in scope and sophistication and are now central to many industries and global supply chains (Betti et al., 2021).

Adoption accelerated from the 1980s onwards, particularly in the food sector, driven by public health crises such as Bovine Spongiform Encephalopathy (BSE) in Europe (Torres et al., 2011).



The BSE crisis weakened consumer confidence in meat safety and exposed weaknesses in supply chain oversight (Cleeland, 2009). Poor traceability made it difficult to identify the source of infected cattle and contaminated beef, thus contributing to the spread of the disease (Chammem et al., 2018). In response, the EU banned Meat and Bone Meal (MBM) in livestock feed (Woodgate & Wilkinson, 2021) and adopted the General Food Law Regulation (EC) No 178/2002, which embedded traceability across production, processing, and distribution in food and feed businesses as a matter of helping to ensure food safety (European Union, 2002).

Although often associated with food safety, traceability is also critical in other sectors (McEntire et al., 2010). In pharmaceuticals, it helps protect patients from counterfeit or faulty drugs through unique identifiers that enable forward and backward tracking, verification of origin and authenticity, and rapid recalls when needed (NCB Marking, 2018; Sim et al., 2022). Electronics, textiles, and automotive industries likewise depend on traceability to support authenticity, transparency, and regulatory compliance (Gartner et al., 2021; Carbon Trail, 2025).

More recently, digital traceability has become important for demonstrating sustainable commercial practices by helping businesses track and disclose information on product origin and composition (Garcia-Torres et al., 2019; Uba et al., 2026). In this context, sustainability means meeting present needs without undermining future generations' ability to meet theirs (WCED, 1987), through environmental protection and social equity (Eelager et al., 2025). For products or processes to be credibly regarded as sustainable, reliable and verifiable information on their sourcing, composition, and production methods must be accessible and

traceable, since such transparency underpins environmental protection, social equity, and economic resilience (UNEP, 2017).



In addition to its contribution to promoting sustainability, the use of digital traceability technologies enables businesses to demonstrate compliance with key market sustainability policies and due diligence legislation such as the Corporate Sustainability Due Diligence Directive (CSDDD)¹ and the EU Deforestation Regulation (EUDR)² (TraceX, 2024). The CSDDD serves as a legal instrument, designed to promote environmental and social sustainability by requiring businesses to identify and address the negative implications of their operations on the environment and human rights, in and out of Europe (European Commission, 2024).

² European Parliament and Council of the European Union (2024) Directive (EU) 2024/1760 of 13 June 2024 on corporate sustainability due diligence and amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859. Official Journal of the European Union, L 2024/1760, 5 July. Available at: <https://eur-lex.europa.eu/eli/dir/2024/1760/oj/eng>

³ European Parliament and Council of the European Union (2023) Regulation (EU) 2023/1115 of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010. Official Journal of the European Union, L 150, pp. 206–247, 9 June. Available at: <https://eur-lex.europa.eu/eli/reg/2023/1115/oj/eng>



In addition to the CSDDD, the EUDR places strict traceability-related requirements on businesses, mandating them to prove that commodities placed on the EU market do not contribute to deforestation or forest degradation, either within the EU or globally (European Commission, 2024). The regulation focuses on seven “forest risk commodities” - palm oil, cocoa, rubber, soy, coffee, wood, and cattle (including cattle-derived products such as leather) (Köthke et al., 2023), which are known to be linked to extensive land conversion for commercial agriculture. This agricultural expansion remains one of the primary drivers of global deforestation and forest degradation in areas where most of these commodities are grown (Pendrill et al., 2019).

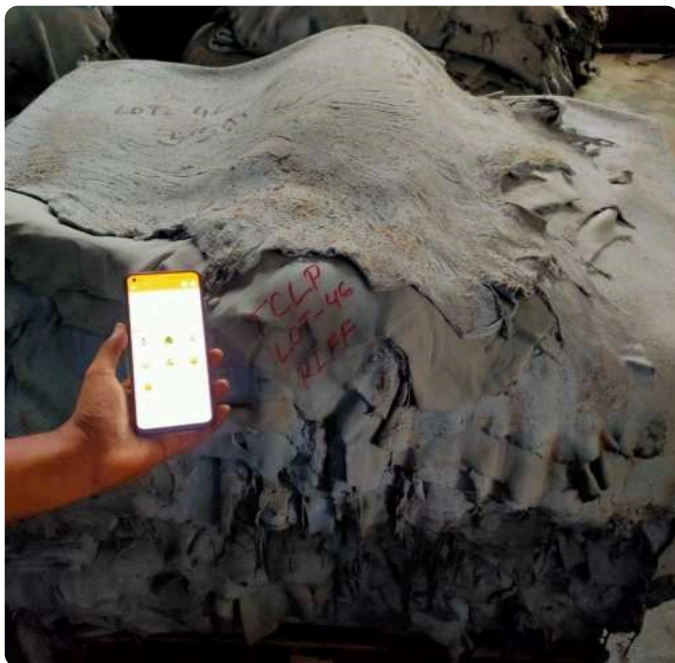
To demonstrate compliance, companies that fall within the specified scope are required to submit a Due Diligence Statement (DDS) before exporting or placing products on the EU market (Coolset, 2025). The DDS constitutes a formal, legally binding declaration confirming that the company has conducted the requisite due diligence to ensure its products comply with all requirements of the EU Deforestation Regulation (EUDR) (Zbucka-Gargas & Rocha, 2023).

The statement must include key information such as company and product details, the country of production, precise geolocation coordinates of the relevant production areas, and verifiable evidence demonstrating that the commodity is deforestation-free and produced in accordance with the applicable laws of the country of origin (Lamore, 2024). In practice, meeting these requirements necessitates the establishment of robust traceability systems capable of linking products to specific farms or production areas (Rossi et al., 2025).

As a major producer and exporter of leather, Bangladesh is among the countries whose leather trade is exposed to significant impact by policies such as the EUDR and CSDDD (Modak, 2024). Given that these policies apply directly to EU-established operators and traders that place relevant commodities and products on the EU market, enforcement occurs within the EU. However, and in practice, the regulation shifts data and verification requirements upstream where non-EU exporters, including Bangladeshi leather exporters, will increasingly need to provide geolocation and chain-of-custody information to EU operators in order to maintain access to EU markets.



To address this challenge, the Leathertrace Bangladesh project was launched in August 2024 as a sector-strengthening initiative to support nationally relevant reforms in leather traceability and sustainability governance, with financial support from the UK government's Sustainable Manufacturing and Environmental Pollution (SMEP) Programme. The project is designed to help close the gap between current traceability capacity in Bangladesh's leather sector and the evolving sustainability, due diligence, and market-access expectations shaping international trade, including requirements under international regulatory regimes.



Specifically, this report seeks to: (a) situate traceability within the broader global evolution of sustainability governance and trade regulation, (b) assess the existing national policy and regulatory landscape relevant to traceability, (c) propose a coherent, nationally aligned policy blueprint to accelerate traceability adoption in ways that support Bangladesh's LDC graduation pathway, strengthen sector competitiveness, promote inclusive growth and environmental protection, and sustain access to high-value export markets.

This report constitutes a core research output of the Leathertrace Bangladesh project. It sets out a comprehensive policy blueprint designed to support the systematic adoption and scaling of digital traceability technologies across Bangladesh's leather value chain. The blueprint is intended to provide a structured, evidence-based roadmap primarily for Bangladeshi policymakers, outlining the institutional, legal, technological, and financial reforms required to embed traceability as a foundational component of the sector's sustainability and competitiveness.



2.1 THE LEATHERTRACE BANGLADESH PROJECT

The Leathertrace project aims to develop and pilot a digitised traceability system that will assist tanneries in Bangladesh to comply with international climate change policies such as the EUDR, whilst transitioning to more sustainable methods of production in their manufacturing processes. To achieve this core aim, the project team adopted an implementation framework comprising four main components, namely: a) e-traceability system development, b) carbon calculator development and environmental impact analysis, c) circular economy and finance modelling, and d) policy research and development.

The Leathertrace e-traceability system (as shown in Figure 1) was conceptualised as the system architecture for the cluster pilot, with a view to informing future sector-wide scale up. It is designed to enable end-to-end digital tracking of leather and leather goods across the entire value chain, from upstream livestock production/ rearing and slaughter through to tanning, manufacturing, distribution, and final consumer-facing products. The system captures and verifies data through a combination of system controls (such as user authentication and document checks) at critical points such as farms, slaughterhouses, collection centres, procurement stages, tanneries, and footwear and leather goods manufacturing facilities, using mobile- and web-based user interfaces to ensure real-time data entry and validation. For the purposes of the project cluster e-traceability pilot, participating organisations retain ownership of their firm-level operational data, while the project serves as the data custodian/system administrator responsible for platform governance, access controls, data quality protocols, and secure management of shared traceability records.

The project adopted a cluster-based implementation approach to deliver its four core components, selecting sixteen (16) organisations which formed the project cluster and participated in key project activities, such as the e-traceability system pilot. This model was chosen because it enables the project to test and refine the e-traceability system across a representative cross-section of the leather value chain within a manageable and collaborative implementation structure. A baseline survey of the 16 project cluster organisations was undertaken at the start of the project to assess existing traceability practices, identify barriers and levels of readiness for adopting traceability technologies, and generate evidence to inform the design of the e-traceability system and related policy reforms for Bangladesh's leather value chain (Vanger et al., 2026).





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By integrating QR code generation and batch-level identification at key transaction stages, the system establishes a continuous chain-of-custody. This architecture allows traceability records to be progressively enriched as materials move downstream, culminating in a final product QR code that provides consumers, buyers, and regulators with access to a consolidated traceability report detailing origin, processing history, and due diligence compliance information such as geolocation data, carbon emissions data and product identification details.

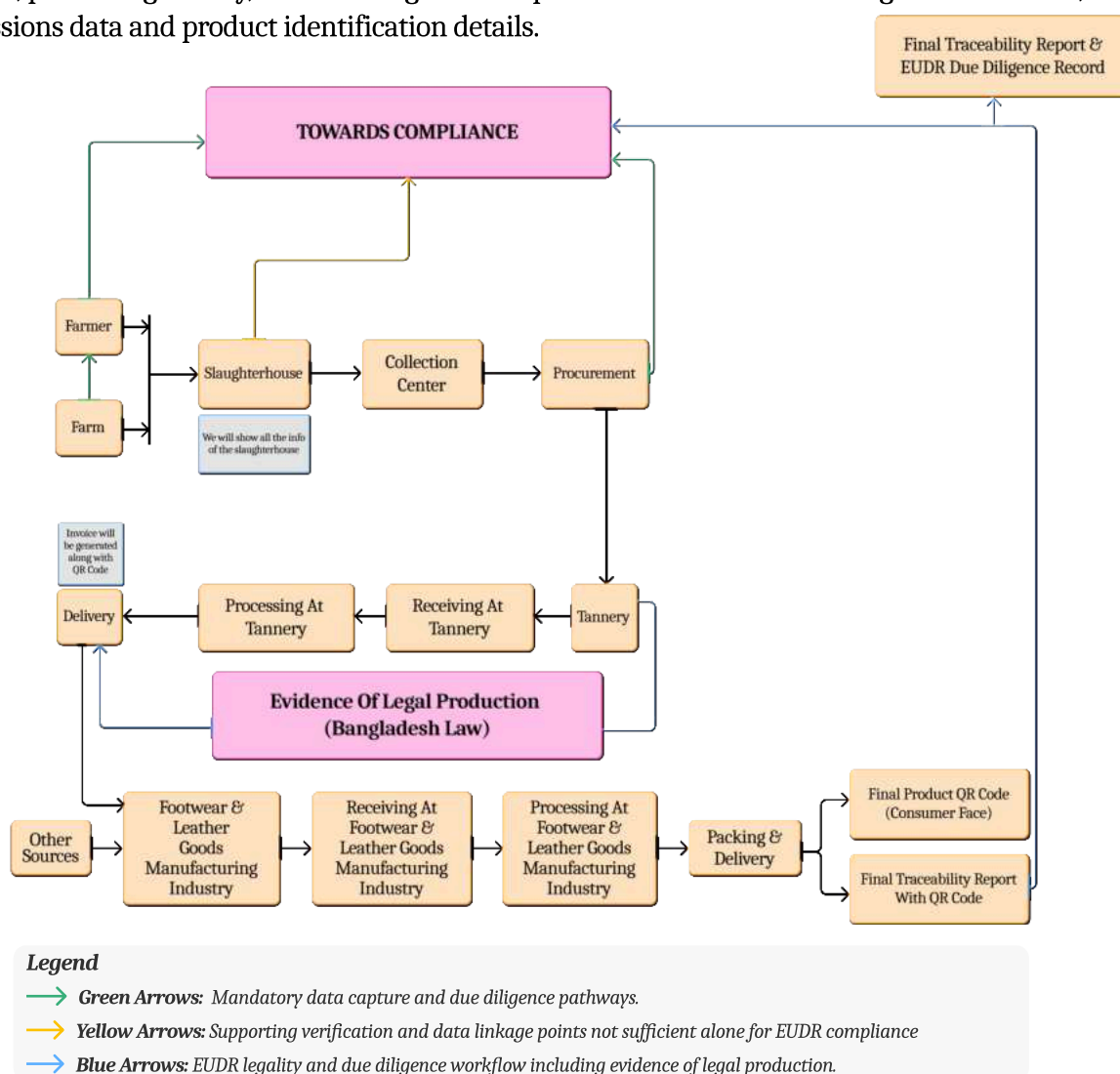


Figure 1: Leathertrace E-traceability System & Due Diligence Map



As shown in Figure 1, the Leathertrace e-traceability system is designed to support operational alignment with the traceability requirements associated with international due diligence regimes such as the EUDR. The system provides operational alignment with the core compliance requirements of such regimes by embedding structured data capture, chain-of-custody controls, and due diligence verification mechanisms across each stage of the leather value chain. While the EUDR does not automatically impose a direct obligation on all Bangladeshi entities to capture digital data, the system enables exporters to generate and transmit the verifiable information to international operators/buyers. (Razzaque et al., 2024).



At the upstream level, the system design prioritises the capture of precise geolocation data at the point of livestock rearing, including farms and any intermediate holdings. This reflects compliance with the international due diligence requirements (as denoted by the green arrow line in Figure 1)



that commodities placed on the EU market must be demonstrably deforestation-free, which in the case of cattle-derived products necessitates the recording of latitude and longitude coordinates with sufficient precision to enable spatial verification against deforestation datasets.

Crucially, the system recognises that slaughterhouse-level data alone is insufficient to satisfy requirements concerning the land/establishments of production as denoted by the yellow arrow line in Figure 1. While slaughterhouses represent a critical verification node, their core function within the Leathertrace architecture is to digitally link and validate upstream geolocation and movement history through system controls. This design choice directly reflects the emphasis international due diligence regimes place on upstream land-use compliance and mitigates the regulatory risk associated with treating slaughterhouses as proxy origin points.

The system architecture also incorporates a parallel legality and due diligence pathway (denoted by the blue arrows in Figure 1) to reflect the collection and consolidation of evidence that leather was legally produced under applicable national law (here, Bangladesh law), alongside document verification, risk assessment, and, where necessary, risk mitigation as per EUDR requirements (Zbucka-Gargas & Rocha, 2023).



The traceability system architecture culminates in the generation of a final product QR code and consolidated traceability report, which can provide buyers, auditors, and (where appropriate) consumers with access to verifiable information on origin, processing history, and supporting due diligence documentation. The highly relevant regulatory record is the Due Diligence Statement (DDS) submitted by the internationally-based operator (or authorised representative), with the Leathertrace outputs serving as upstream evidence and traceability support for that submission (Zbucka-Gargas & Rocha, 2023).

Procurement (denoted by the green arrow line in Figure 1) functions as a critical due diligence consolidation point, where supplier data, batch histories, and risk assessments are aggregated to support the preparation of the Due Diligence Statements (DDS). By structuring procurement as a compliance gateway, the Leathertrace system supports EUDR due diligence by enabling Bangladeshi suppliers/exporters to amalgamate and verify traceability and supporting documentation that internationally-based operators require before placing relevant products in those markets.





2.2 COUNTRY PROFILE - BANGLADESH

Bangladesh is a densely populated, lower-middle-income economy whose growth model has historically combined export-oriented manufacturing with large-scale labour absorption, underpinned by deep integration into global value chains and sustained by a large domestic consumer base (Mottaleb & Sonobe, 2011).

Recent World Bank data places Bangladesh's GDP at approximately US\$450.1 billion (2024) and GDP per capita at about US\$2,593 (2024), reflecting both the scale of its economy and Bangladesh's ongoing policy imperative to diversify beyond a dominant reliance on ready-made garments (World Bank, 2024).

This report comes at a critical policy moment for Bangladesh as it is officially scheduled to graduate from its current Least Developed Country (LDC) status in November of 2026, following which it will need to manage a smooth transition from LDC-specific international support measures and trade preferences (WTO, 2026)³. In the EU market in particular, Bangladesh currently benefits from duty-free, quota-free access under the 'Everything But Arms (EBA)' arrangement as an LDC, making compliance-readiness and traceability investments increasingly important not only as a sustainability issue but as a competitiveness and market-access strategy in the transition to post-LDC trade conditions (European Commission, 2026).

Within Bangladesh's diversification agenda, leather and leather goods have long been positioned as a strategic "next export pillar" because of the sector's strong backward linkages to domestic livestock-derived raw materials, its capacity for relatively high domestic value addition compared to some other export sectors, and its employment potential across tanning, finishing, component supply, and downstream goods (footwear, bags, small leather goods).



Bangladesh's leather sector expanded significantly during the 2010–2016 period (when export earnings roughly doubled), but then experienced performance volatility linked to structural and compliance constraints, most notably the disruption and under-delivery of expected environmental infrastructure benefits associated with the relocation of tanneries from Hazaribagh to the Savar Tannery Estate, including persistent concerns about the functionality of common environmental facilities such as the Central Effluent Treatment Plant (CETP). (Razzaque et al., 2020).

Economically and socially, Bangladesh's leather sector contributes to Bangladesh's development in three interlocking ways. First, it supports export diversification and foreign exchange earnings, with leather, leather goods, and footwear collectively remaining a meaningful secondary export cluster even when absolute values fluctuate (Shams et al., 2024).



Second, the sector supports roughly between 800 thousand and 1 million livelihoods across a value chain (Friedrich-Ebert-Stiftung, 2023), that includes hides and skins aggregation (including seasonal spikes), tanning, finished leather processing, and manufacturing of footwear and leather goods - activities that are typically labour-intensive and capable of upgrading into higher value-added product lines where compliance and quality systems are robust (Friedrich-Ebert-Stiftung, 2023). Third, the sector anchors a set of culturally embedded domestic markets and practices around livestock and hides/skins - where religious and local cultural experiences greatly influence slaughter patterns, raw material availability, and seasonal supply-chain behaviour (Razzaque et al., 2020; Leather Working Group, 2023).

While the leather sector plays a critical and anchoring role in Bangladesh's socio-economic development, it has been bedevilled in recent times by sustainability challenges (UNCTAD, 2025). Historically, Hazaribagh concentrated a very large share of Bangladesh's tanneries in an extremely small urban footprint, with longstanding problems of untreated or poorly managed effluent, solid waste, and occupational exposure, which drove litigation and policy pressure culminating in the relocation to the Savar Tannery Estate (Razzaque et al., 2020).

Nevertheless, and despite efforts to address the sector's environmental pollution challenges through regulatory reform and the relocation of tanneries to the Savar Tannery Estate, recent research studies have documented a wide range of persistent environmental risks associated with leather processing in Bangladesh (Monira et al., 2023). These studies have identified high organic pollution loads in tannery effluent, characterised by elevated biochemical oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), sulphides, ammonia, and salinity, which exert acute pressure on surface water bodies and aquatic systems when inadequately treated or discharged intermittently (Monira et al., 2023).

These pollutants originate primarily from beamhouse operations (including soaking, liming, and de-liming), dyeing, and finishing stages, and are particularly damaging in contexts where common effluent treatment infrastructure operates below design capacity or lacks effective monitoring and enforcement (Bhardwaj et al., 2023). In addition to liquid effluents, Bangladesh's leather sector generates substantial volumes of solid and semi-solid waste, including fleshings, trimmings, hair waste, sludge from effluent treatment processes, and chemical-laden packaging residues (Basak et al., 2020).

Recent studies further indicate that weak segregation, storage, and disposal practices have resulted in the accumulation of hazardous organic waste and treatment sludge in open or poorly engineered sites, increasing the risks of soil contamination, odour (air) pollution, methane emissions, and leachate migration into surrounding land and water systems (Khan et al., 2024). Such waste streams often contain high levels of salts, sulphur compounds, residual tanning and finishing chemicals, and microbial pathogens, posing long-term environmental and public health risks even where chromium concentrations are comparatively controlled (Khan et al., 2024).



Such waste streams often contain high levels of salts, sulphur compounds, residual tanning and finishing chemicals, and microbial pathogens, posing long-term environmental and public health risks even where chromium concentrations are comparatively controlled (Khan et al., 2024). These concerns are consistent with wider research showing that effluent mismanagement, hazardous waste accumulation, and inadequate pollution control infrastructure remain pervasive sustainability challenges, particularly in developing countries (Omoloso et al., 2021).

These environmental pollution challenges translate directly into trade and export constraints due to global buyers and regulators increasingly treating environmental and social compliance as a condition of market access rather than a reputational add-on (Fontana et al., 2024). Such trade and export constraints are best observable through the lens of emerging due diligence and deforestation-linked regulatory requirements such as the EUDR, CSDDD and the UK forest-risk commodities regime, which are rewriting the rules on market access by requiring exporters to demonstrate, through verifiable data and digital traceability systems, that products placed on the EU market are both deforestation-free and produced in compliance with applicable environmental and social laws (European Union, 2023).

For Bangladesh's leather sector, persistent pollution concerns and limited end-to-end traceability across hides, skins, and processing stages create structural difficulties in generating the credible, risk-based evidence of compliance with applicable national laws governing production and processing (Monira et al., 2023; Hasan et al., 2020). This has direct implications for EUDR readiness, since Article 3(b) requires products to be produced in accordance with the relevant legislation of the country of production, meaning that gaps in domestic compliance documentation and traceability systems can undermine the evidentiary basis for due diligence (European Union, 2023; UNCTAD, 2025). These gaps have increasingly come to influence sourcing decisions, heightening due diligence and verification costs for exporters, ultimately restricting Bangladesh's ability to both safeguard existing market access and to expand into higher-value Global North markets (Fontana et al., 2024).



3. THE TRACEABILITY POLICY LANDSCAPE IN BANGLADESH

There is a growing market demand for ecological and social compliance in different industries, and the leather industry is no exception. In the leather sector, buyers, brands, and schemes require inputs, process controls, documentation, and verifications that a tannery and its upstream supply chain must comply with. The Leather Working Group (LWG) certification (Leather Working Group, 2025), and Sustainable Leather Foundation (SLF) Audit Certification (Sustainable Leather Foundation, 2025) are examples of such schemes, yet Bangladesh currently has very limited LWG- (and SLF) Certified Tanneries, which limits its ability to export leather to the EU, UK, and US markets (Liberi et al., 2024; Moazzem & Ahmed, 2023).

Within the Bangladeshi leather sector, a number of infrastructural challenges have undermined certifications and schemes, leading to constraints in accessing global markets. A significant example relates to the CETP at the Savar Tannery Industrial Estate. CETP has gaps in its solid waste management, which have been repeatedly flagged by media organisations and industry players, directly impeding compliance with international standards (Hashem et al., 2022; Islam, 2025). This has resulted in some of the tanneries (e.g., Samina Tannery (Pvt), Sadar Tannery Ltd., and Bengal Leather Complex Ltd.) investing in setting up their own effluent treatment plants (ETPs) at significant cost to achieve the conformations to standards needed to attract new buyers (Apparel Resources, 2023).



Bangladesh produces several hundred million square feet of raw hides and skins annually, which generates a revenue close to 8 billion Euros (Razzaque et al., 2020), with peak hide collection (circa 35% as reported in one study) occurring during the religious period of Qurbani - also known as the festival of sacrifice or Eid-ul-Azha (Strasser et al., 2013).



This creates distinctive supply chain dynamics, including large seasonal surpluses, challenges in collection and preservation, stretching the typical capacity of related stakeholders (Strasser, 2015). Such dynamics influence both quality control and the ability to implement traceability systems effectively across the supply chains.

In parallel, the global prospects are changing rapidly, and the pertinent traceability and due diligence rules are tightening. Multistakeholder groups and fora emphasise the need for the Global South's leather supply chains to prepare for the EU requirement of end-to-end mapping and the application of due diligence rules (UNCTAD, 2025), for example, those associated with farm/slaughterhouse origin of hides, deforestation risks, chemicals, etc. In Bangladesh, the UK Foreign and Commonwealth Development Office (FCDO) programme on Sustainable Manufacturing and Environmental Pollution (SMEP) is responding with digital traceability pilots (Leathertrace, 2025; SMEP, 2025).



With the leather sector being a key industry in the Bangladeshi export landscape, without concerted policy-level support for digital traceability, data governance, and environmental performance, the country risks increased due diligence costs, elevated buyer risk perceptions, unavoidable export constraints and persistent price discounts in a highly competitive market. Key pieces of related legislation within this context include the Bangladesh Environment Conservation Act, 1995 (the first Act of 1995 in the country), which aims to “conserve the environment, improve standards, and mitigate pertinent pollution” (Ministry of Environment and Forest, 1995), as well as the Environment Conservation Rules, 1997, which support the Act (Ministry of Environment and Forest (MoEF), 1997).

The Act was amended in 2010 (Government of Bangladesh, 2010), to further tighten provisions on industrial compliance and environmental clearance requirements, with a view to strengthening the compliance landscape relevant to tannery operations. The amendments list “Production of shoes and leather goods (capital up to 500,000 Taka)” in the (b) ORANGE-A Category, and “Production of shoes and leather goods, above 500,000 Taka capital” in the (c) ORANGE-B Category (Schedule 1). That said, tannery operations themselves are classed in the (d) RED Category. The (a) GREEN to (d) RED classification system is used to issue environmental clearance certification. Accordingly, for categories (b) to (d), “firstly a Location Clearance Certificate and thereafter an Environmental Clearance Certificate shall be issued”. Although traceability is not explicitly required in either the Act or the Rules, several documents are needed for the issuance of certificates in categories (b) to (d), including effluent standards (for ORANGE-B and RED), process flow diagrams, and other necessary information (Ministry of Environment and Forest, 1995; Ministry of Environment and Forest (MoEF), 1997).



The Bangladeshi Leather and Leather Goods Development Policy (Ministry of Industries, 2019) positions the country’s leather industry as a strategic export sector, and highlights the need for environmental compliance, appropriate planning for industrial estates, and adoption of innovation, with specific references to CETP. It also emphasises the need for higher female representation, in addition to calling for further financial investment in the sector. Although the policy does not explicitly mention traceability systems, it provides a fine roadmap for the assessment of traceability requirements as part of the need for compliance with international standards, in any upcoming revisions, and as part of the work of the proposed Strategic Implementation Task Force, as well as the revision and monitoring of the action plans.

The Guide for Assessment of Effluent Treatment Plants in EMP/EIA Reports for Textile Industries (Department of Environment, 2008) is being used by the Bangladesh Department of Environment (DoE). It stipulates the need for ETP/CETP performance and proper handling of chromium-containing wastes. Despite this, challenges and shortcomings at the CET plant at Savar industrial estate have been well documented and attracted the attention of national and global media in recent years. These challenges are making it harder for firms to provide traceable, verifiable compliance data. In addition, the Bangladesh Labour Act (2006, amended in 2013 and 2018) provides environmental and occupational safety and worker rights provisions that are increasingly linked with traceability requirements where social compliance data overlaps with supply chain due diligence obligations, despite cited criticisms (Grantham Research Institute and Science, 2023).



To facilitate trade and customs digitisation, the Bangladesh Single Window (BSW) project was initiated under the National Board of Revenue (NBR) (NBR, 2025) as an integrated digital platform for certificates, licences, and permits (CLPs) and customs procedures (NBR, 2024). Since the BSW project's inception and development, it has scaled rapidly, with over 85% of CLPs processed in under an hour (BSS News, 2025). The Bangladeshi NBR has implemented customs modernisation plans to align with the Trade Facilitation Agreement (TFA) of the World Trade Organisation (WTO); the plans focus on aligning automation in the country with the TFA (NBR, 2018) – thus providing an opportunity for potentially embedding traceability metadata standards, such as batch, lot, and process identifiers, in any export documentation.

The Customs Act (1969, with subsequent amendments) provides the legal foundation for customs modernisation. While it does not directly reference traceability, its provisions on documentation and goods declarations can form a key to enabling a legal framework for integrating traceability metadata into customs processes (Government of Bangladesh, 1969). Similarly, the Bangladesh Personal Data Protection Act (PDPA) - proposed in 2023 but yet to be enacted into Law - together with the 2025 Data Protection Ordinance (ARTICLE 19 Bangladesh, 2025), have the potential to strengthen privacy, accountability, and democratic participation. Notwithstanding, there are calls to align it with international human rights standards, and in particular protecting consent, independent oversight, limiting exemptions, and embedding strong protections for privacy and freedom of expression.

While these legislative instruments do not directly reference traceability, they provide the legal foundations for ensuring robust governance of the processing of personal or commercially sensitive data (for example, data

related to tannery workers, suppliers, hut agents, etc.) by a traceability system (Ti-Bangladesh, 2023a).

Traceability systems are increasingly becoming digital as traditional, paper-based, or manual methods are not capable of keeping up with today's business, regulatory, and consumer demands. Accordingly, cyber and cyber-enabled crimes should be taken seriously when implementing any digital system that involves information sharing over the Internet (Forouzan et al., 2023). Since an e-traceability system often relies on cloud/Internet of Things (IoT) data, having a clear, rights-respecting security regime is important for brand confidence amongst buyers and supplier adoption. The Bangladesh Cyber Security Act, 2023 (CSA), replaced the 2018 Digital Security Act (DSA) (Ti-Bangladesh, 2023b) and together with its subsequent reforms, sets some of the baselines for digital security, albeit that it does not reference traceability systems directly.



Another piece of related regulation is Bangladesh's Digital Commerce Policy (2018) (Bangladesh Government, 2018), alongside its related e-commerce rules. Although the Policy and the rules are consumer-facing, they push for transparency and data practices in digital transactions and can be leveraged as a precedent for supplier transparency and complaint redress mechanisms in B2B traceability networks (Siddiqui, 2022). Moreover, the ICT Policy 2018 (Government of Bangladesh, 2018a), aligned with Digital Bangladesh Vision 2021 (Centre for Policy Dialogue (CPD), 2007) and now Smart Bangladesh Vision 2041 (Karnaphuli Gas Distribution Company, 2024), has the potential to



provide the strategic digitalisation umbrella under which e-traceability initiatives could be nested. Its emphasis on data-driven innovation and smart industry practices reinforces opportunities for digital traceability platforms in the leather sector.

In addition to the policies and legislative instruments hitherto discussed, there are several other regulations related to livestock which could indirectly support the adoption of traceability technologies within Bangladesh's leather sector. The Bangladesh Standards and Testing Institution (BSTI) Act (2018) provides for standards certification, which can be extended to cover product and process traceability criteria (Government of Bangladesh, 2018b).

The Animal Disease Act (2005) and related veterinary and livestock regulations form the foundation for upstream traceability of hides, and link farm and slaughterhouse practices to supply chain documentation (Government of Bangladesh, 2005). Similarly, the Bangladesh Food Safety Act (2013), though primarily consumer-facing, offers governance mechanisms for safety and hygiene standards that are conceptually transferable to traceability of leather-related products, particularly where animal-origin inputs are concerned (Government of Bangladesh, 2013).





3.1 THE KEY POLICY GAP

The review of the policy landscape related to the traceability of leather, as undertaken in this report, indicates that although there are policies, action plans, and decisions that may directly or indirectly be relevant to traceability of leather, there is not yet a national, joined-up and comprehensive policy framework for enhancing the adoption of traceability technologies within Bangladesh's leather sector. This should be understood not only as a policy gap, but also as a strategic opportunity, especially in the face of Bangladesh's increased political stability.



In this context, a dedicated national policy blueprint for the systematic adoption of traceability technologies offers a practical and forward-looking reform pathway. It can serve as a unifying architecture for scaling digital traceability across the leather value chain, while also strengthening the sector's compliance infrastructure, supporting export resilience in the context of LDC graduation, and positioning Bangladeshi leather producers to compete in markets where transparency and verifiable sustainability performance are increasingly central to buyer decisions.

Building on this diagnosis, the next section sets out a comprehensive policy blueprint designed to close this structural gap by outlining a coherent set of policy pillars, policy goals and policy actions which together form a practical roadmap for accelerating traceability adoption across Bangladesh's leather value chain and aligning the sector with emerging international sustainability regulations.

Viewed in this light, the present fragmentation of laws, standards, and initiatives highlights the need for integration. A nationally aligned traceability policy framework would provide the institutional bridge between existing sustainability, industrial, trade, and compliance measures, enabling Bangladesh's leather sector to generate more credible evidence of environmental and legal compliance, thus responding more effectively to evolving due diligence expectations (including the EUDR), and improve access to high-value export markets.





3.2 THE LEATHERTRACE POLICY BLUEPRINT

The Leathertrace Bangladesh Policy Blueprint was developed from a multi-stage methodological process that combined primary qualitative evidence from stakeholder consultations with a structured synthesis of existing policy documents, academic research, international regulatory frameworks, and global best practices. The objective was to ensure that the final recommendations reflect both the immediate needs of Bangladesh's leather and footwear industry and the longer-term regulatory, technological, and market requirements of global value chains.

The methodological process started with the collation of qualitative perspectives from a policy workshop held in Dhaka on 31 July 2025, which brought together more than fifty representatives from across government ministries, regulatory bodies, non-governmental organisations, tanneries, footwear manufacturers, academia, and industry associations. The participants were asked to identify (drawing on their deep stakeholder expertise and experience of the Bangladeshi leather sector) the key policy measures required to enhance and accelerate the adoption of traceability technologies in Bangladesh's leather sector.

This workshop produced a wide-ranging set of recommendations covering governance, legal frameworks, financing, training, rural infrastructure, smallholder farmer integration, data accuracy and security, and export incentives. These perspectives were recorded, anonymised, and treated as the core qualitative dataset for the development of the policy blueprint shown in the table below. The value of such a participatory methodology lies in its ability to capture context-specific insights from those directly engaged in leather production and regulation (Chambers, 2017; Creswell, 2014).



The next stage involved a systematic content analysis of the stakeholder policy recommendations. Each policy recommendation was coded and clustered into thematic categories, corresponding broadly to the pillars of governance, law, finance, capacity building, digital infrastructure, implementation mechanisms, monitoring, and evaluation. This form of thematic synthesis draws on established qualitative research traditions where researcher interpretation is guided by iterative comparison across sources (Braun & Clarke, 2006).

The synthesis process also sought to validate and contextualise these workshop-derived themes against existing national and international policy frameworks. Key sources included the Leather and Leather Goods Development Policy 2019 and its subsequent reviews by the Ministry of Commerce (SANEM, 2021), sectoral analyses of leather export prospects and constraints (Razzaque et al., 2020), and country profiles produced by industry bodies such as the Leather Working Group (LWG, 2023).



These documents provided critical insights into institutional bottlenecks, compliance challenges, and the export competitiveness of Bangladesh relative to peer economies such as Vietnam and India. Cross-referencing ensured that the stakeholder-derived recommendations were not only reflective of local priorities but also aligned with existing government strategies and international market expectations.

Crucially, the blueprint design was anchored in global regulatory developments that are now shaping access to high-value markets. The European Union's Regulation (EU) 2023/1115 on deforestation-free supply chains (commonly referred to as the EUDR) explicitly requires companies placing leather and leather products^[1] on the EU market to demonstrate that these goods are deforestation-free and legally produced, supported by geolocation and traceability data (European Commission, 2023).

Similarly, the OECD Due Diligence Guidance for Responsible Supply Chains provides a framework for risk-based supply chain due diligence, encouraging businesses and governments to establish traceability systems that identify, prevent, and mitigate adverse environmental and social impacts (OECD, 2018). These international frameworks informed the coding of stakeholder recommendations into enforceable policy pillars, ensuring that the resulting blueprint is responsive to the compliance demands of Bangladesh's largest export markets.

International benchmarking was incorporated at the design stage to ensure the blueprint was both globally credible and locally applicable.

Literature on the diffusion of traceability technologies in agrifood and manufacturing supply chains, including RFID, blockchain, and digital product passports, informed the structuring of policy actions (Kshetri, 2018; Galvez et al., 2018). Furthermore, reference to policy studies of India's Indian Footwear, Leather and Accessories Development Programme (IFLADP) and Vietnam's use of free trade agreements and foreign direct investment to modernise its leather sector further guided the adaptation of best practices to the Bangladeshi context (SANEM, 2021).



The resulting translation of stakeholder recommendations into a structured blueprint involved aligning each thematic cluster with three analytical dimensions: the overarching policy pillar, the corresponding policy goal, and the concrete policy actions required for implementation. This matrix approach enabled the articulation of a coherent framework that is both strategic and operational. It also ensured that high-level aspirations - such as integrating small cattle farmers into traceability systems - are directly linked to actionable measures such as the establishment of farmer identification schemes, mobile reporting tools, and incentive pricing for verified hides.

In sum, the methodology for developing the Leathertrace Bangladesh Policy Blueprint shown in the table below, is one that incorporates participatory qualitative evidence, thematic

⁵ Regulation (EU) 2023/1115 Annex I, Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1115>



synthesis, documentary analysis, international benchmarking, and global regulatory alignment to produce a policy blueprint that is steeped in the local Bangladeshi context while meeting international compliance obligations. This rigorous approach ensures that the recommendations derived from the broad base of Bangladeshi stakeholders are not merely descriptive but form a coherent, evidence-based pathway for accelerating traceability adoption in Bangladesh's leather sector.

Table 1: Policy Pillar, Policy Goals & Policy Actions

Policy Pillar	Policy Goals	Policy Actions
1. Governance & Institutions	Establish strong institutional leadership and coordination	• Create a Ministry of Leather and Leather Goods (MLLG) • Form an inter-ministerial traceability council (IMTC) to align the Ministries of Commerce, Industries, Livestock, ICT, Finance, Environment, and the Ministry of Local Government, Rural and Developmental Cooperatives. • Allocate dedicated budgetary resources to relevant regulatory bodies to support leather traceability rollout including staffing, digital tools, and monitoring capacity linked to clearly defined implementation performance indicators.
2. Legal & Regulatory Framework	Provide enforceable rules for mandatory and voluntary traceability	• Legislate and pass a Traceability Act with a comprehensive scope covering penalties, incentives, data, and governance. • Issue export rules and regulations mandating phased adoption of traceability technologies (large exporters first). • Publish regulations on traceability data protection and governance covering accuracy, security, and retention.
3. National Strategy & Standards	Align national vision with global requirements (EUDR, EUCSRD buyers)	• Develop and adopt a National Traceability Strategy with relevant KPIs. • Define open, interoperable technical standards (such as unique IDs and batch/lots) for a national traceability system. • Develop a national traceability accreditation scheme for leather exporters, aligning with the international standards.



Table 1 continuation

4. Upstream Integration	Bring small farmers and rural actors into the traceability chain	• Introduce farmer IDs and mobile reporting tools/ protocols. • Introduce a phased system for animal IDs/tags for achieving complete traceability. • Incentivise farmers who deliver traceability system verified hides with subsidy support and/or other financial incentives. • Invest in rural hide curing and storage (preservation), aggregation, and logistics infrastructure to improve supply chain efficiency across domestic export markets
5. Capacity & Skills	Ensure skills, awareness, and human resources for traceability	• Establish a National Traceability Training Institute (NTTI) at the University of Dhaka with regional satellite institutes across Bangladesh. • Deliver tiered training: farmers (digital basics), tannery staff (operations), IT staff (system integration). • Embed traceability into academic/TVET curricula within leather education. • Run mass educational and awareness campaigns on international regulations requirements (such as EUDR and EUCSRD) and global buyer expectations to better communicate the need for traceability to the Bangladeshi public.
6. Financing & Incentives	Reduce financial barriers to adoption	• Launch a traceability finance fund working with local banks to provide government-backed financial support and match-funded grants to farmers and leather exporters, with relevant training to enhance financial literacy. • Offer tax credits and import tariff exemptions for certified traceability equipment/software. • Provide rebates and tax cuts for exporters who deliver fully traceable leather.



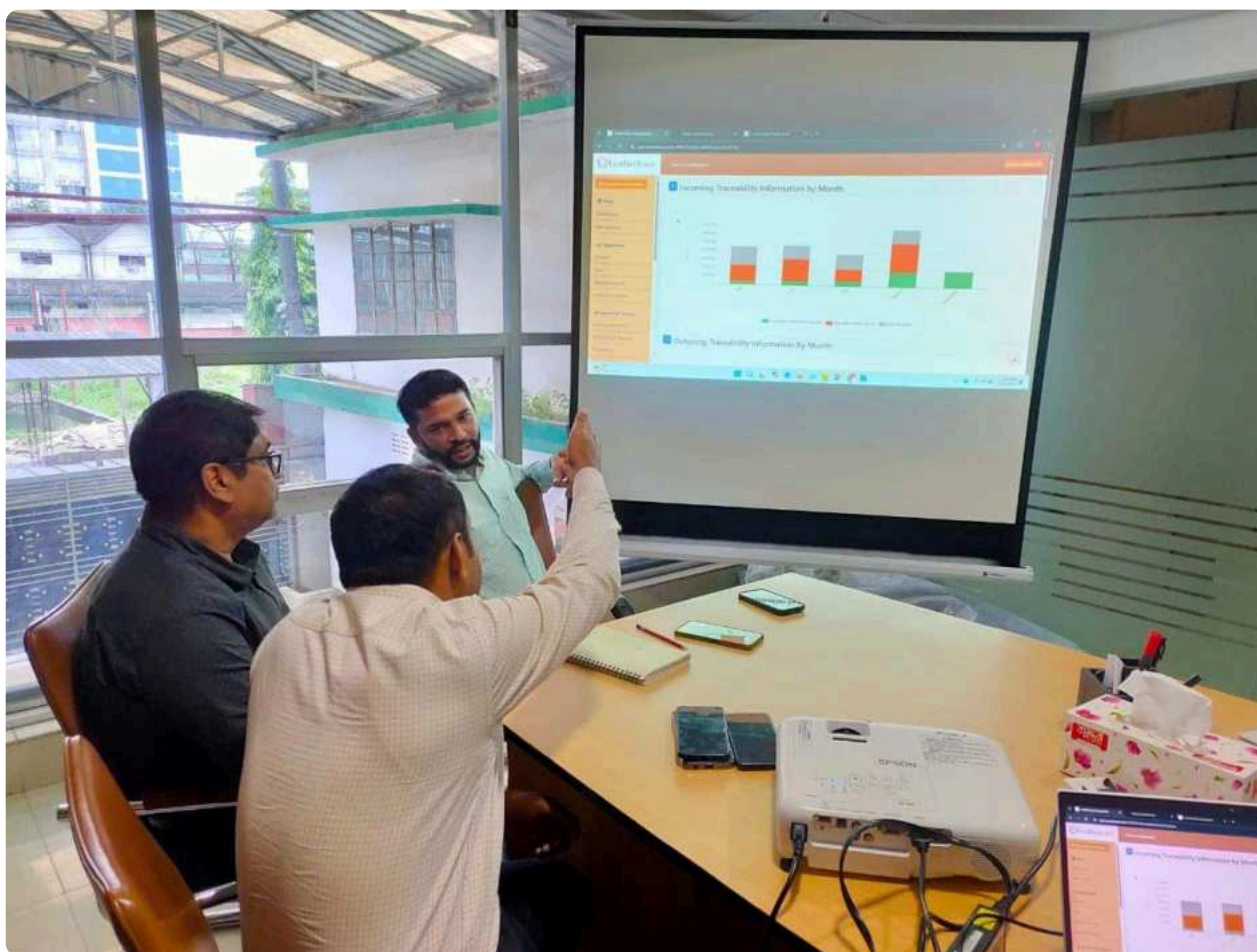
Table 1 continuation

7. Digital Infrastructure & Data Security	Create a trusted national data backbone	• Develop the Leathertrace e-traceability system into a National Traceability Platform (NTP). • Mandate data accuracy, validation rules, and timestamping. • Enforce tamper-proof logs, penetration tests, and independent audits. • Implement tiered data disclosure & grievance redressal mechanisms.
8. Implementation Model (Zoning & Phasing)	Enable an orderly, manageable rollout across Bangladesh	• Establish 4 administrative zones for rolling out the NTP (Dhaka–Savar, Chattogram, Khulna–Jessore, Rajshahi–Rangpur) with zonal offices which have inspectors & data helpdesks. • Undertake a phased rollout of the NTP (all dates referred to below are indicative): • Phase 1: Large exporters, • Phase 2: Medium-sized exporters, • Phase 3: All exporters, including SMEs.
9. Monitoring & Enforcement	Ensure compliance while supporting businesses	• Undertake licensing and inspections via Ministry of Commerce zonal offices. • Undertake staggered enforcement and provide an amnesty period during initial onboarding.
10. Partnerships & Stakeholder Engagement	Build trust and share responsibility	• Collaborate with Bangladeshi industry associations (such as BTA) to undertake hide supplier mapping & stakeholder awareness campaigns. • Engage research partners in academia to expand research on traceability systems through targeted collaborative mechanisms – including joint pilot studies, applied research grants, and university/industry collaborations. • Engage NGOs and external donors to secure funding and partnerships to advance the establishment of rural traceability infrastructure & undertake farmer training.



Table 1 continuation

11. Roadmap & KPIs	Track progress in the immediate, short-term, medium-term and long-term	• Immediate term: Policy blueprint approved, NTTI launched, pilot shelters built, National Traceability Act legal text drafted • Short-term: National Traceability Act & Export Rules in force, NTP (beta version) goes live with high-volume exporting firms invited for . Onboarding. • Medium-term: SME onboarding reaches 50% of the baseline-identified target SME cohort, and the first implementation and data-quality audit report is published. • Long-term: At least 80 - 90% of baseline-identified export-oriented firms are onboarded to the national traceability system and meet the applicable traceability and reporting requirements
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4. DISCUSSION AND ANALYSIS

This section provides a synthetic discussion of the Leathertrace Bangladesh Policy Blueprint by analysing how the eleven policy pillars, taken together, respond to the structural, policy, regulatory, and political - economic constraints that limit the adoption of traceability within Bangladesh's leather sector. The analysis situates the blueprint as an integrated policy architecture designed to reposition traceability as a core component of Bangladesh's leather export competitiveness, LDC-graduation readiness and the inclusive and sustainable development of Bangladesh's leather value chain.

As set out in section 3 of this report, the Leathertrace Bangladesh Policy Blueprint for enhancing the adoption of digital traceability technology in Bangladesh is comprised of eleven policy pillars, each with its own corresponding set of policy actions and policy goals. The eleven policy pillars are designed to function as an interdependent policy framework. Its design logic is interdependent and broadly sequenced; with the governance policy actions enabling the regulatory/legal policy action; the regulatory/legal aspects enabling the financial policy actions; the financial policy actions enabling adoption, and adoption enabling market access.

4.1 INSTITUTIONAL FRAGMENTATION AND GOVERNANCE REFORM

At the heart of the blueprint lies the recognition that Bangladesh's traceability deficit is not primarily for technological reasons, but more so due to institutional policy reasons. Despite the presence of some fragmented traceability-related laws and standards, as discussed in section 2 of this report, the absence of a unified governance framework has constrained the coordinated upscaling of traceability within the leather sector.

Regulatory authority for Bangladesh's leather sector is divided across multiple ministries - incorporating production, livestock management, environmental compliance, ICT governance, and export control - leading to complexities in coordination and enforcement. In the light of this gap, the blueprint's proposed governance reforms under Pillar 1 (Governance & Institutions) - particularly the creation of a dedicated Ministry of Leather and Footwear and an inter-ministerial traceability council - will help provide suitable and enabling conditions

for the implementation and enforcement of policy actions related to traceability. Alternatively, these could be evolved from already existing institutional structures over time, as is often seen in Global South contexts. (SANEM, 2021; Razzaque et al., 2020).

4.2 LEGAL EMBEDDING, REGULATORY ALIGNMENT AND SEQUENCING

This institutional realignment is closely coupled with a second, equally consequential shift in what the policy blueprint proposes; the redefinition of traceability as a phased legal and regulatory obligation with differentiated responsibilities across the value chain. In practical terms, binding obligations would apply first to export-oriented firms and larger processors/manufacturers (e.g., tanneries and footwear exporters), with proportionate and progressively introduced requirements for upstream actors (such as slaughterhouses, traders, and farms) through registration, record-keeping, and data-reporting rules supported by incentives and transition measures.



The blueprint's proposed Traceability Act under Pillar 2 (Legal & Regulatory framework) should be best understood as a domestic market-enabling measure to strengthen the competitiveness, resilience, and compliance readiness of Bangladeshi leather exporters in an evolving global trade environment. In this context, the Act would provide a national legal basis for traceability, data governance, and verification systems that help exporters respond to rapidly tightening buyer expectations and regulatory due diligence requirements across key markets such as the EU (European Union, 2023).

Recent legal scholarship on due diligence regimes underscores that traceability systems are most credible in risk-based regulatory environments when they are supported by a clear legal and institutional framework for data governance, verification, and accountability. Without such a framework, traceability data may have limited evidentiary value for demonstrating compliance with legality and due diligence requirements. (Zbucka-Gargas & Rocha, 2023).

Crucially, the blueprint avoids the common policy pitfall of legal overreach by recommending the sequencing/phasing of mandatory adoption. The phased introduction of traceability obligations, beginning with large exporters and gradually extending to medium-sized firms and SMEs, reflects principles of proportionality and regulatory learning.

This approach mirrors best practices in responsive regulation, allowing institutions to build enforcement capacity while tanneries and footwear companies adapt incrementally to the new compliance requirements. Without such sequencing, mandatory traceability risks generating resistance, evasion, or informalisation, particularly among smaller actors.

4.3 NATIONAL STANDARDS AND REGULATORY COHERENCE



The blueprint's emphasis on a national traceability strategy (Pillar 3) and interoperable technical standards further strengthens its policy coherence. Traceability systems that are fragmented, proprietary, or misaligned with international norms frequently fail to deliver regulatory value, even when they are technologically sophisticated. Research on digital product passports and blockchain-based traceability consistently highlights interoperability as a decisive factor in regulatory acceptance and cost efficiency (Galvez et al., 2018; Kshetri, 2018).

By proposing that a future national traceability strategy include well-defined open standards, unique identifiers, batch-level tracking, and a national accreditation scheme, the blueprint lays the foundations for future convergence of compliance for tanneries in Bangladesh where they are in readiness to comply with regulatory expectations across international markets.



4.4 UPSTREAM INTEGRATION AND INCLUSIVE VALUE CHAIN DEVELOPMENT

A critical strength of the blueprint lies in its inclusion of policy goals and action related to upstream integration (Pillar 4). Bangladesh's leather value chain is characterised by a large number of smallholder farmers, informal traders, and decentralised slaughter practices, particularly during peak periods such as Eid-ul-Azha (Modak, 2024). Treating traceability as a downstream factory-level issue, as many past initiatives have done, leaves exporters commercially vulnerable in markets where upstream land-use compliance is considered determinative.

The policy actions proposed in the blueprint related to the introduction of farmer identification systems, mobile reporting tools, and subsidised rural logistics reflect empirical evidence from agri-food supply chains showing that positive incentives are more effective than coercive enforcement in integrating informal actors into traceability systems (Gelderman et al., 2021).

This upstream focus also carries important distributive implications, helping to prevent traceability from becoming an exclusionary mechanism that marginalises small producers (Kadfak et al., 2025).



4.5 CAPACITY BUILDING AND ACCESS TO SUSTAINABLE FINANCING

The blueprint further recognises that the adoption of traceability is constrained not only by institutional and financial barriers but also by deficits in digital skills and capacity, as noted under Pillar 5 (Capacity & Skills). Studies on traceability adoption in Bangladesh's tanning sector have repeatedly identified limited digital literacy and skills as central obstacles hindering the widespread adoption of digital traceability systems within the country's leather sector (Sarker et al., 2023). This aligns with stakeholder views and perspectives collated at the policy workshop in Dhaka in July 2025. In proposing the establishment of a National Traceability Training Institute at the University of Dhaka, alongside tiered training programmes and integration into Technical and Vocational Education and Training (TVET) and academic curricula, the policy blueprint responds directly to the constraints associated with gaps in digital literacy and skills amongst farmers and the broader public.

The policy blueprint sets out policy goals and actions related to the financing of traceability systems (Pillar 6, Financing & Incentives) in Bangladesh by reframing traceability as a public-private investment rather than a private compliance cost. This shift in perspective is supported by evidence from Bangladesh's leather sector, where recent research has highlighted that upfront capital requirements for compliance systems such as digital traceability remain prohibitively expensive for many tanneries, even when the long-term market benefits are well established (Moazzem & Ahmed, 2023).

To overcome this barrier, the blueprint recommends the establishment of government-backed finance mechanisms, tax credits, and



export rebates for leather exporters. These tools help internalise the broader public benefits of traceability - including environmental protection, improved market access, and enhanced sector reputation - into individual tannery-level investment decisions. By making these wider societal gains visible and valuable to tanneries, the policy blueprint creates stronger incentives for adoption.

4.6 DATA INTEGRITY, TRANSPARENCY AND ACCOUNTABILITY



Equally significant is the blueprint's explicit attention to data integrity, cybersecurity, and trust as seen in Pillar 7 (Data Infrastructure and Security). Traceability systems that cannot guarantee data accuracy, tamper resistance, and auditability lack evidentiary value in enforcement and dispute resolution contexts. OECD guidance on responsible supply chains emphasises that traceability data must be capable of withstanding regulatory scrutiny and legal challenge (OECD, 2018). Recognising the legal and reputational risks posed by unreliable digital compliance systems - especially in high-stakes export markets such as leather - the blueprint recommends the mandating of several safeguards to protect data. These safeguards include validation rules, timestamping,

independent audits, and grievance mechanisms. These measures are intended to enhance the credibility of traceability data so that it meets the standards required by international buyers.

independent audits, and grievance mechanisms. These measures are intended to enhance the credibility of traceability data so that it meets the standards required by international buyers.

4.7 IMPLEMENTATION, PLANNING AND COMPLIANCE SUPPORT

Zonal and phased implementation strategies have the potential to enable this gradual approach by allowing controlled experimentation and capacity-building in specific areas before a much wider national rollout of the Leathertrace e-traceability system. This would reduce systemic risk while generating practical insights that inform a broader rollout. The monitoring framework supports this gradualist strategy through a balanced enforcement model where inspections are paired with initial amnesty periods to allow tanneries and other stakeholders to adjust to the new system. This aligns with responsive regulation principles that view compliance as a long-term goal requiring support as well as accountability.

Taken together, the eleven policy pillars that make up the Leathertrace Bangladesh Policy Blueprint are intended to operate as an interdependent and adaptive policy framework. While the blueprint sets out a broad implementation logic - where governance reforms support legal and regulatory alignment, legal clarity helps unlock financing and incentives, and financing supports adoption and market readiness - these relationships are expected to evolve iteratively in practice.



Progress in one pillar generates information, institutional capacity, and implementation lessons that feed back into others. In this sense, the blueprint's milestones function as decision points for adjustment, recalibration, and coordination across pillars.

This feedback logic is especially important in Bangladesh's leather sector, where government institutional readiness, tannery capacity, and upstream integration may develop unevenly over time.





5. CONCLUSIONS

This report has set out an extensive national policy blueprint for supporting the adoption of digital traceability across Bangladesh's leather sector in response to tightening global expectations around sustainability, due diligence, and market access. With the need for traceability no longer in question - and with government, industry, and development partners increasingly recognising its relevance in enhancing export competitiveness - the report's original contribution lies in providing a practical policy architecture and roadmap to support traceability adoption in Bangladesh in a way that is realistic, nationally owned, and implementation-ready.

The analysis throughout the report demonstrates that Bangladesh's traceability gap is the result of the absence of a joined-up policy framework capable of aligning governance, law, finance, skills, digital infrastructure, and enforcement around a shared traceability objective. Existing policies relevant to leather production, environmental regulation, livestock management, trade facilitation, and digitalisation often operate in parallel rather than in concert, creating uneven capacity to produce credible evidence of legality and sustainability performance and increasing exposure to fast-evolving international requirements. The Leathertrace Bangladesh Policy Blueprint is designed to close this structural gap by consolidating relevant and evidence-based policy reforms into a coherent national roadmap.

The blueprint, articulated in Section 3 of this report, sets out eleven interdependent pillars that position traceability as a core component of Bangladesh's leather export competitiveness. Importantly, the blueprint must be understood as an adaptive reform pathway with an implementation logic that brings together coordination and sequencing with policy



learning: early pilots, audits, and onboarding milestones are intended to generate evidence that informs adjustments to standards, incentives, capacity-building, and enforcement approaches over time. This feedback-based approach is particularly relevant given Bangladesh's current policy context, including post-election reform momentum, institutional capacity constraints, and the need to strengthen trade resilience as the country approaches LDC graduation.

The blueprint, articulated in Section 3 of this report, provides a unified policy response through eleven interdependent pillars that together establish traceability as a national compliance infrastructure rather than a discretionary firm-level practice. Its design logic is sequential and mutually reinforcing, in that strong institutional leadership and coordination create the conditions for enforceable legal mandates, and legal mandates in turn underpin financial incentives and investment, which then enables widespread adoption - and widespread adoption when achieved, secures continued trade access to high-value export markets. This systemic approach distinguishes the blueprint from earlier sectoral strategies that addressed compliance, skills, or infrastructure in isolation and, in doing so, failed to overcome entrenched implementation barriers.



A defining strength of the blueprint is its explicit alignment with the current trajectories of global environmental and climate regulatory regimes. In proposing that traceability be mandated within Bangladesh's statutory law, prioritising the capture of upstream geolocation and chain-of-custody data, the blueprint directly responds to the evidentiary requirements of international sustainability and due diligence frameworks. Equally important is the blueprint's emphasis on inclusivity and feasibility. The phased implementation model, zonal rollout, and differentiated obligations for large firms, SMEs, and upstream actors that it proposes reflect a pragmatic understanding of Bangladesh's leather production realities.

The Leathertrace Bangladesh Policy Blueprint represents a serious opportunity to transform how Bangladesh's leather sector operates, in moving it towards a more responsible, more transparent, and more sustainable future. Its implementation would strengthen the ability of Bangladeshi exporters to generate and transmit verifiable traceability and legal compliance data that internationally-based operators require to meet their due diligence obligations - thereby supporting continued market access and competitiveness in international markets.





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