

The Palmyra Ecosystem: Sustainable supply chain digitization

Building transparent global trade on the Cardano blockchain

Challenge

Global supply chains lack trust and inclusion

Modern commodity supply chains remain deeply fragmented. Despite globalization, **the underlying systems that connect producers, cooperatives, exporters, and buyers are still opaque, manual, and siloed**. Each transaction depends on intermediaries—brokers, aggregators, inspectors—who add cost but not always value. This complexity makes it almost impossible for smallholder producers to prove product origin or sustainability claims, while global buyers lack tools to validate authenticity.

Small producers face multiple compounding barriers: **limited digital access, poor price transparency, and exclusion from formal markets due to the absence of verifiable certification frameworks**. The impact is economic and systemic. Producers lose bargaining power, markets lose traceability, and consumers lose confidence.

At the same time, governments are tightening compliance requirements. The **EU Deforestation Regulation (EUDR)**² now mandates full traceability of commodities linked to forest-risk products, while the **FDA's Food Traceability Final Rule**³ expands transparency mandates across U.S. imports. For many regions, meeting these standards without digital infrastructure is impossible.

The result is a global trade paradox: demand for sustainable, verified goods has never been higher, yet the producers best positioned to supply them are locked out of the system. According to the FAO, **more than 500 million smallholder farmers still operate without access to digital traceability or financial inclusion tools**.⁴

Palmyra was designed to address this gap, replacing opacity with proof and exclusion with participation.



Industry

- Blockchain Supply Chain

Size

- USD 2.26 billion (2023)¹
- USD 192.93 billion (2030)
- CAGR 88.8% (2024-2030)

The challenge

- Lack of proof
- High intermediation
- Compliance burden
- Data silos
- Unequal access

The solution

- Cardano infrastructure
- End-to-end traceability
- Regulatory alignment
- Inclusive design

“Blockchain isn’t a buzzword—it’s the backbone of a fair, transparent, and efficient commodity trade.”

Solution

A blockchain-powered ecosystem for ethical and efficient trade



Palmyra introduces a comprehensive digital framework that connects every actor in the commodity value chain through verifiable data. Their flagship product, Palmyra Pro, is a trace, comply, and trade solution that establishes a single source of truth for producers, cooperatives, exporters, and regulators.

Using blockchain's immutable data layer, every stage of production — **from registration and harvest to export documentation** — is recorded with full transparency. Producers can log information on mobile devices, cooperatives can certify quality and compliance, and buyers can verify product journeys in real time.

The Cardano blockchain provides the foundation with energy-efficient consensus, formal verification, and interoperability that support scalability and regulatory alignment. These capabilities allow Palmyra to operate across borders and commodities, **turning isolated supply-chain data into a trusted digital asset with legal and commercial value**.

Palmyra's impact reaches beyond traceability. It promotes economic inclusion by linking smallholders to fair markets, strengthens institutional trust through verified data exchange, and reduces operational friction for enterprises and regulators. Its design reflects a broader mission: **to make global trade transparent, equitable, and resilient**.

Solution Walkthrough

PALMYRA

01. 

Palmyra partners with cooperatives and local institutions to verify producers, digitize assets, and register data on the blockchain via Palmyra Pro.

02. 

Producers input origin, harvest, and logistics data through mobile interfaces; each transaction is recorded immutably on Cardano for cross-party verification.

03. 

Through Palmyra Pro's trade module, buyers can confirm origin and ESG compliance, while regulators can access verifiable audit trails for EUDR and FDA reporting.

04. 

Once verified, commodities can be traded globally with blockchain-backed certificates, improving trust, efficiency, and access to finance for small producers.

Results

Measurable impact through blockchain-enabled inclusion



Producer empowerment

3,000+ Zambian farmers onboarded from Nature's Nectar beekeeping network, improving income transparency and direct buyer access.



Verified ESG compliance

Partnership with the University of Amsterdam delivers blockchain-based deforestation monitoring and sustainability reporting for honey supply chains.



Institutional collaboration

Selected by UNDP's SDG Blockchain Accelerator to co-develop decentralized data infrastructure for agricultural transparency (Cohort 1, 2024).



Global scalability

Framework adaptable to multiple commodities—extending traceability solutions to cocoa, coffee, and other high-value agri-exports.



Proof-of-concept

Validated the use of Cardano's blockchain as a low-cost, high-integrity ledger for real-world traceability, setting a precedent for enterprise-grade RWA adoption.



CARDANO

Advantages



Proven resilience

Demonstrated security and reliability support continuous operation



Scalable network

Future-proof infrastructure supports platform growth without sacrificing performance



Secure data

Robust architecture protects sensitive data, minimizing the risk of breaches or fraud



Sustainable operations

Energy-efficient consensus and ethical governance align with sustainability efforts

Sources

¹Blockchain Supply Chain Market (2024 - 2030)

²European Commission (2023). EU Deforestation Regulation: Ensuring products are free from deforestation

³U.S. Food and Drug Administration (2022). Food Traceability Final Rule (FSMA 204)

⁴Food and Agriculture Organization of the United Nations (FAO, 2022). The State of Food and Agriculture 2022

Contact us



**Cardano
Foundation**

The Cardano Foundation is an independent, Swiss-based not-for-profit advancing Cardano as a public digital infrastructure across a wide range of industries.



cardanofoundation.org