

Track and Trace with Blockchain: Following every sip to its roots

An advanced solution for supply chains that leverages the Cardano blockchain to enhance authenticity and transparency in Georgian wines.

Challenge

A Cultural Legacy at Risk

Wine has long been a symbol of culture and tradition throughout the world, and no other place exemplifies it better than the country of Georgia. A former Soviet republic, **Georgia has a rich winemaking history dating back thousands of years.** With archeological findings unearthing millenary grape seeds that link Georgia to the very roots of winemaking, many even consider it **the birthplace of wine.** And traditional methods, such as fermenting grapes in large clay vessels called qvevris, create **wines with distinctive flavors and characteristics.**

Yet the **majority of the buying public remains unaware of this uniqueness,** as well as the excellent quality of Georgian wines. Despite the digital revolution of recent decades, wine bottles and their **labels remain the consumers' major source of information about wines,** adding an extra layer of complexity for Georgia to showcase the value of its wines and their vibrant heritage.

Moreover, the **lack of reliable track and trace systems** hinders the country's ability to leverage its reputation fully. **Counterfeit products threaten market integrity,** and producers struggle to showcase the authenticity and provenance of their wines to discerning consumers. This limits the nation's ability to command premium prices and **hampers the growth of the Georgian wine industry.**



სსიპ
ღვინის ეროვნული
სააგენტო
LEPL
NATIONAL
WINE AGENCY

Company

Georgian National Wine Agency

Industry

Wine

Size

€36 billion global export value¹

\$260 million export value for Georgian wines

The challenge

- Lack of awareness of Georgian wines' quality and history
- Bottle labels as primary source of information for consumers
- Counterfeit products damage the wines' reputation
- Difficult to command premium prices and grow sales



The solution

- Flexible blockchain-based track and trace solution
- Low-cost program for efficient management
- Immutable records add extra transparency
- Digital signatures safeguard authenticity
- Provenance and appellation protection
- Optimal visibility for wines' differentiating qualities

"Partnering with the Cardano Foundation has allowed us to effectively and efficiently digitize Georgian wines. Because all certification procedures are stored on the Cardano blockchain, we can trace the entire supply chain of each bottle. We certify not only that the wines comply with their labels, but that they have the highest possible quality. It's proving a game changer in showcasing our products and getting them to new markets."

Levan Mekhuzla
Chairman at Georgian National Wine Agency

"The partnership with the Cardano Foundation has given us a truly effective and innovative solution to counterfeit problems that threaten our market reputation. It also makes it much easier to communicate with consumers. Now, anyone can see the rich history and verify the unique Georgian grape varieties behind our wines. And since then, our sales have expanded internationally to Canada, UK, and South Korea."

Baia Abuladze
CEO of Baia's Wine

Solution

Transforming the wine industry with enterprise-grade blockchain



As a decentralized, immutable ledger, **Cardano** helps to address this challenge and **adds an extra layer of transparency and certification** to the process. In a groundbreaking initiative, the Cardano Foundation launched an innovative pilot project in partnership with [Baia's Wine](#) and [Scantrust](#). The project aimed to safeguard the authenticity and provenance of Georgian wine through the use of digital signatures—a novel approach that presented the wine's origin and quality on the blockchain.

Building on this success and as **part of a variety of state programs** to strengthen and increase the competitiveness of the country's wine industry, the [National Wine Agency](#) (NWA) of Georgia partnered with the Foundation to evolve the Baia's Wine case into a **national solution**. It selected Bolnisi as the pilot program market, aiming to showcase Georgian wine heritage in the region alongside **appellation protection**. Today, the **Georgian Wine Traceability Program** represents a broader collaborative effort between the [Cardano Foundation](#), [Georgia's NWA](#), the Bolnisi Winemakers Association, and [Scantrust](#).





This **pioneering blockchain-based initiative** leverages the Cardano blockchain to **enhance transparency, authenticity, certification, and traceability in Georgia's wine industry**. It develops a **low-cost, self-sustaining system** that helps individual wineries prove the authenticity of their products and **boost performance**. The pilot encompasses over 30 wineries with already thousands of wine bottles produced, **tackles counterfeiting**, and **provides greater visibility**, storing on the Cardano blockchain comprehensive supply chain data confirmed by the respective wineries as well as **certificates of conformity** issued by the NWA. These confirm **compliance with both domestic and export sales regulations**, with the supply chain data further **following the commercial industry standard implemented by the International Organisation of Vine and Wine (OIV)**—an intergovernmental body with 50 member states that account for 87% of the global wine production.

The solution's mechanism is enabled by Scantrust, using **Cardano's unique advantages for storing and distributing product information**. By leveraging Cardano's **interoperability and developer-friendly features**, Scantrust QR codes now allow consumers to trace the journey of each wine bottle from vineyard to glass, along with easy-to-verify product information. In fact, the system is **customizable to meet specific industry needs** and has **predictable business operating costs** that facilitate scaling.

The collaboration has already empowered Georgian winemakers to share their rich culture and production processes, further **solidifying Georgia's global reputation as a premier wine producer**. In fact, the NWA's rollout strategy **plans to extend this solution** to multiple regions across the country, plus have their **vast wine production widely registered and certified on the Cardano blockchain**.

Replacing paper-based exports processes with digital equivalents
Putting a supply chain's steps on a trusted, public blockchain alongside digital signatures facilitates the validation of every entry, even if participants access on-chain information via different applications.

Solution Walkthrough

01.  **Information storage** Cardano's unique advantages accommodate all relevant data, from certificates of conformity to comprehensive info about the grapes or supply chain process.
02.  **Signature creation** Associating a digital identity to the products provides easy-to-access attribution information about the supply chain actors.
03.  **Validation** Signing the metadata confirms the authenticity of on-chain records, while the immutability of Cardano's blockchain ensures they cannot be tampered with.
04.  **International compliance** Readily available and machine-readable data makes it effortless to verify provenance data and compliance with standards set by industry bodies.



- 30+ wineries
- Increase in sales
- Expansion to new markets
- Elevated brand awareness

Results



Traceability

Implementing a blockchain-based solution established immutable supply chain records, validating wine uniqueness, and providing a consumer-friendly way to access the information.



Transparency

Leveraging the Cardano technology, Georgian wineries are establishing an immutable, verifiable record of provenance, ensuring complete transparency of their wines' journey from grape to glass for consumers.



Trust

The Georgian wine solution ensures accuracy and trust in asset tracking, providing a tamper-proof, public record of each bottle's journey throughout the supply chain.



Brand Elevation

In protecting the authenticity of Georgian wine, the Scantrust and Cardano integration helps build brand reputation and recognition among new and existing consumers.



Increased Sales

After implementing the Cardano and Scantrust solution, Georgian wines saw remarkable increases in sales and brand engagement across different international markets.



CARDANO

Advantages



Competitive capabilities

Low requirements to implement an advanced traceability solution with predictable costs proportional to the resources used.



Advanced storage efficiency

Metadata records can include multiple information of different types and a single transaction holds a significant amount of data.



Interactive information

Easy for machines to read on-chain data and simple for both industry bodies and consumers to interact with the records.

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.

www.cardanofoundation.org