



# Bunachain

Farm To Cup



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White Paper

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# Executive Summary



Bunachain is poised to fundamentally transform the global trade in coffee. By leveraging high-performance decentralized ledger technology (DLT), Bunachain delivers immutable transparency and efficiency across the entire "Farm to cup" supply chain, creating a more sustainable and equitable market for the world's most valuable soft commodity.

Bunachain will revolutionize the coffee value chain through the following core functionalities:

- **Instantaneous Payments:** Settlement times are reduced from days or weeks to seconds using digital stablecoin transactions. Funds, released instantly by buyers, can be received by farmers either in stablecoins or directly into their local bank accounts.
- **Reduced Friction Costs:** The high costs associated with transacting, often ranging from 4% to 10% in complex jurisdictions due to foreign exchange (FX) spread and remittance fees, are reduced to under 0.5%.
- **Unified Supply Chain:** The platform creates a unified, digital marketplace connecting all stakeholders, from smallholder farmers and processing centers to global importers, roasters, and trade finance providers.
- **Regulatory Support and Compliance:** Bunachain is engineered to support the verification and disclosure of complex, multiple regulatory standards, ethical sourcing certifications, and environmental impact data through immutable ledger technology.

This infrastructural transformation yields decisive benefits across the ecosystem:

- **Transparency and Trust:** All transaction parties operate on a level playing field, utilizing the same verified and immutable data set regarding quality, origin, and pricing.
- **Fraud Reduction and Quality Assurance:** Visibility throughout the supply chain allows for the swift identification of bad actors and

practices, drastically reducing coffee fraud, such as origin washing, and providing tamper-proof documentation at every stage.

- **Economic Efficiency:** By streamlining documentation, payment, and verification processes, the platform enables efficiencies of up to 40% in capital requirements and processing time when compared to opaque, paper-based systems.
- **RWA Enablement Layer:** The platform creates the necessary, verified data layer for Real-World Asset (RWA) tokenization, setting the stage for future coffee commodity contracts to become transparent, liquid, and tradeable digital assets.

The immediate benefits of platform adoption include improved access to global markets for suppliers, reduced risk for consumers, and increased revenue realization for producers through verifiable sustainability premiums



# INTRODUCTION

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## Global Significance of Coffee Trade

The global coffee industry represents a multi hundred billion dollar value chain, touching nearly every nation as a producer or consumer. Despite the enormous consumer appetite for specialty and ethically sourced coffee, the industry remains plagued by complex, opaque, and outdated trading practices. The systemic inefficiencies present in the agricultural sector generally are acutely magnified in the coffee trade, which is characterized by fragmented smallholder production networks and long, complex international shipping routes.

The current system fosters a fundamental paradox: coffee is a high-value consumer product, yet the friction and inefficiency inherent in its journey disproportionately harm the origin countries and the smallholder farmers who cultivate the commodity. The necessity for transformational change is driven not only by economic opportunity but by profound issues of environmental sustainability and social equity.

## Bunachain's Genesis

Bunachain is a revolutionary Web3-powered traceability platform specifically designed to address these deeply entrenched complexities within the global coffee supply chain. The platform's true genesis is rooted in a profound realization of the global coffee paradox: a valuable commodity that often fails to uplift the hands that harvest it.

The idea for Bunachain crystallized when one of the founders heard the story of a foreigner visiting the famed coffee lands of Yirgachefe in Ethiopia. This visitor, accustomed to paying hundreds or thousands of dollars for Ethiopian coffee back home, expected to find a thriving, prosperous village. Instead, he found farmers walking barefoot, their families living in poverty. Shocked, he asked his local friend, "Where are the dollars we are sending?" The stark reply: "Your dollar never reaches here."

This painful admission that wealth was perpetually captured by intermediaries, leaving the producers behind sparked a critical conversation among a group of friends. Following extensive brainstorming and questioning about how to eliminate this systemic friction, Bunachain was born. Its core mission is to leverage decentralized ledger technology (DLT) to provide a fully transparent, integrated marketplace, driven by a stablecoin settlement system on the Solana blockchain. This system is designed to strip out the significant costs and friction inherent in international commodity trade, all within a secure and fully accountable environment.

The design of the platform deliberately addresses historical technological barriers. Earlier enterprise blockchain attempts struggled with the high costs, low throughput, and lack of privacy associated with public permissionless blockchains. Bunachain's architecture, leveraging Solana, circumvents these issues, ensuring that the technology not only works but is economically sustainable for all participants, especially those in developing markets. This whitepaper demonstrates how Bunachain's unique platform will remove friction, reduce cost, and become an indispensable service, generating multiple diversified revenue streams.

## **THE PROBLEM**

Friction, inefficiency, and lack of verified data create systemic problems that hinder the equitable and sustainable growth of the global coffee market. The challenges facing the coffee sector precisely mirror and, in many cases, exceed the systemic friction found across the general agricultural trade, as detailed in the following sections.

### **A. The Anatomy of Supply Chain Friction in Coffee**

#### **1. Payment Facilitation Delays and Costs**

The reliance on conventional banking and remittance systems for international coffee transactions is a significant burden. Remittance on transactions can routinely take 3 to 7 days to settle, forcing capital to be tied up at unnecessary cost. Furthermore, the fees average approximately 6% and can reach up to 10% of each trade when factoring in FX spreads and conversion charges. This volatility and delay severely restrict cash flow management, particularly for small-scale producers in emerging markets who require rapid, reliable access to funds for seasonal investments and planning.

## 2. Coffee Fraud and Misrepresentation

Coffee fraud, which often manifests as the practice of “origin washing” blending high-quality, traceable lots with cheaper, untraceable beans erodes trust and costs the industry billions annually. The lack of comprehensive, verified, and immutable records enables mislabeling and fraud to occur easily as the commodity crosses multiple jurisdictions. The difficulty in detecting such fraud is compounded by a complex web of wet contracts and poor visibility of origin, making prosecution of bad actors challenging.

## 3. Poor Traceability and Certificate Verification

The opaqueness of the supply chain is a direct result of reliance on paper-based systems and siloed data solutions. Without a unified digital ledger, the process of verifying quality, origin, and adherence to specific standards (such as specialty grading or organic certification) becomes laborious and expensive. Dozens of differing standards and certifications complicate the assurance process. This systemic failure to provide autonomous verification allows fraudulent actors to operate, as the critical lot metadata such as coffee variety, harvest date, and region is not securely and immutably stored on-chain in current systems.

## 4. Sustainability Not Verifiable and Visible

The increasing global focus on climate action means access to high-value European and US markets is becoming critically dependent on the ability to verify environmental and social impact. Regulations like the EU’s Sustainable Finance Disclosure Requirements (SFDR) impose considerable disclosure burdens. The existing supply chain opacity makes it nearly impossible for roasters or consumers to reliably verify claims regarding deforestation practices, labor standards, or overall carbon footprint tied to a specific lot. Consequently, farmers who adopt superior, sustainable practices struggle to prove their credentials and realize the financial premium their investment warrants.

## 5. Fair Access and Margin Erosion

The current ecosystem is structurally designed to skew profit away from primary producers and channel risk towards them. Smallholder coffee farmers frequently receive only a minute fraction of the final retail price, echoing the finding that agricultural producers generally bear a disproportionate share of the risk

Geographic isolation, language barriers, and highly complex compliance requirements act as insurmountable restrictions on market access for small producers. This model is unsustainable for promoting high-quality food systems and high-value commodity production.

## B. Typical Coffee Trade Flow

The conventional trade flow for a coffee lot originating in a developing nation involves an excessively long cycle of documentation, negotiation, and financial clearing. The estimation below, adapted from typical agricultural trade analysis, details the significant cost and time frictions inherent in the legacy system.

This long cycle creates opportunity for opacity, waste, and fraud, emphasizing the urgent need for revolutionary improvement in the foundational system.

METRIC	LEGACY SYSTEM (ESTIMATE: ETHIOPIA TO HAMBURG)	BUNACHAIN PLATFORM (ESTIMATE)	EFFICIENCY GAIN
AVERAGE TRADE DURATION (FARM TO IMPORTER)	60 - 75 Days	10 - 14 Days	<i>\$\approx\$80% Reduction in financial hold time</i>
PAYMENT SETTLEMENT TIME (FX CLEARING)	3 - 7 Days	<i>Instant (Seconds via Stablecoin)</i>	<i>Near-instantaneous</i>
DOCUMENTATION COST (LEGAL/COURIER/PAPER)	<i>2.5% - 4.5% of Trade Value</i>	<i>&lt; 0.5% (Ricardian Contracts/Digital)</i>	<i>Significant Reduction</i>
FARMER PROFIT VISIBILITY	<i>Zero/Partial</i>	<i>Complete, Immutable</i>	<i>Total Transparency</i>

Table I: Typical Coffee Trade Flow Comparison (Legacy vs. Bunachain)

# THE SOLUTION: BUNACHAIN



Bunachain provides an integrated, inclusive marketplace for all participants in the coffee supply chain. It is driven by the immutable ledger of the Solana blockchain, which delivers transparency, trust, and accountability from the farm gate to the consumer's cup. Bunachain's focus is on solving critical issues with commodity trading, including inefficiency, fraud, and access to trade finance and insurance.

## A. Bunachain's Integrated Marketplace

Bunachain is not merely a tracking system; it is a financial and logistical infrastructure that lowers the effective cost of traded coffee, increases market choice, and reduces fraud by providing verified quality and origin data

### 1. Payment Facilitation

Legacy remittance processes, which take 3–7 days and incur average fees of 6%, are eliminated. Bunachain provides instant settlement through stablecoin choices, primarily USDC, leveraging the fast time-to-finality of Solana. When a buyer abroad releases stablecoins or dollars, farmers can choose to receive these funds instantly into their digital wallets or convert them directly for deposit into their local, verified bank accounts. Stablecoins serve as the crucial bridge for programmable, accelerated money movement. This instant settlement reduces trade finance borrowing costs and optimizes working capital flow for all businesses. Furthermore, using stablecoins eliminates international remittance fees and shields small producers in volatile jurisdictions from severe foreign exchange charges.

### 2. Transaction Cost Optimization

Legal and administrative fees traditionally account for 1% to 1.5% of the cost of an international agricultural trade. Bunachain reduces this dramatically through several mechanisms:

- **Ricardian Contracts:** The platform implements legally binding, digital Ricardian contracts for coffee trade. This mechanism aggregates dynamic on-chain activity into a static, enforceable legal contract, drastically reducing the reliance on costly, slow wet signatures and courier bills of lading.

- **Audit Streamlining:** The immutable record of tax and excise data simplifies audits, reducing legal risk and administrative overhead.
- **Interoperability:** The use of standard data formats and protocols ensures seamless interoperability between different systems used by logistics, insurance, and trade finance partners

### 3. Traceability and Certificate Verification

The current difficulty in assuring quality, origin, and sustainability credentials due to multiple standards is addressed directly. Bunachain provides:

- **Online Documentation:** The reliance on physical documents is removed, eliminating the risk and cost associated with couriers and physical wet contracts.
- **Autonomous Verification:** The platform will use its on-chain log structure to instantly verify certificates of origin, quality grading (e.g., SCA scores), and sustainability status. The core traceability infrastructure connects Solana on-chain logs directly to a public QR viewer.
- **Tamper-Proof Metadata:** Critical lot metadata, including coffee variety, harvest date, and region, is stored securely and immutably on-chain. This foundational data links real coffee lots with specific wallet addresses, ensuring secure ownership tracking

### 4. Food Fraud Reduction

Bunachain provides the required infrastructure for significant fraud reduction. The platform creates an immutable record from the farmer to the final roaster, making it substantially easier to identify, prove, and reduce fraudulent activities like origin washing. Total transparency increases the risk of prosecution for bad actors, acting as a powerful deterrent throughout the supply chain

## 5. Sustainability and Ethical Transparency

The global market trend demands verifiable environmental impact data. Bunachain provides traders and investors with clear visibility of the environmental and social impact associated with traded coffee lots. This streamlines disclosure to regulators, institutions, and consumers. By making these metrics visible, the platform creates a market mechanism where goods with high ESG standards naturally attract a premium, driving up standards across the industry. The efficiency gains (up to 40% time and capital savings) can be reinvested by producers into better, more sustainable farming practices.

## 6. Fair Access

Language, geographic, and cultural isolation are primary inhibitors of market access for small producers. Bunachain provides the lowest possible barrier to entry, requiring only basic online literacy and connectivity. The platform architecture is designed to integrate the role of local development agents and model farmers, who can utilize the platform's tools to help aggregate lots, onboard producers, and facilitate trade for unbanked smallholders. This approach enables information symmetry, countering the information advantage traditionally held by large multinational traders. Critically, by establishing a verifiable on-chain transaction history, Bunachain facilitates access to credit and trade finance for smallholder producers who are otherwise unbanked.

## **B. Strategic Validation: The Ethiopia Pilot**

The upcoming pilot rollout in Ethiopia represents critical validation of Bunachain's operational capability in a key origin market. The team plans to onboard local coffee processors and exporters, testing real-world lot submission and flow tracking. Ethiopia, being a complex, highly regulated, and crucial global coffee source, will demonstrate the platform's ability to reduce friction and operate reliably in demanding environments. This pilot will provide essential credibility with global partners interested in verified, high-quality sourcing, addressing the challenges of operating across complex jurisdictions.

# MARKET ANALYSIS



## A. Size and Demand

While the global agricultural product trade was cited at \$2.32 Trillion in 2022, the coffee market itself constitutes a critical and highly financialized segment of this economy, with the value chain exceeding \$400 Billion annually. The market segment targeted by Bunachain specialty coffee requiring verifiable traceability is experiencing accelerated growth compared to the bulk commodity market. Inflation in agricultural product prices is predicted to grow at a compound annual growth rate of over 6% through 2030, further emphasizing the urgency of efficiency improvements.

## B. Accelerating Factors

### 1. Consumer and Regulatory Pressure

Consumers in developed nations are increasingly concerned about the provenance and ethical impact of the products they consume. Nearly two-thirds of US consumers would willingly pay up to a third more for food they know is sustainably sourced. Bunachain provides the necessary visibility and accountability for producers to realize this boosted value, aligning market incentives with sustainable practices.

### 2. Decentralized Finance and RWA Convergence

A significant market tailwind is the accelerating trend of Real-World Asset (RWA) tokenization. Global enterprises are beginning to transform commodity assets including coffee into on-chain assets that capture value from liquid staking and DeFi protocols. For example, the tokenization of a coffee plantation's growth data and future revenue streams demonstrates the scale of this opportunity. While Bunachain's initial focus is on traceability and settlement, its technical foundation provides the immutable lot metadata that will be required by financial protocols (like Treehouse Protocol) to reliably securitize physical assets and create liquid, compliant RWA tokens in the future. Bunachain is positioned to enable the crucial intersection of agricultural trade and decentralized finance (DeFi) as the market matures and the platform expands its offerings.

## C. Adoption Strategy

Bunachain is designed to overcome the historical resistance to AgriTech adoption, which often reports slower adoption rates due to high capital costs and delayed ROI for farmers.<sup>1</sup> By contrast, Bunachain offers a zero-capital-cost solution that delivers immediate efficiencies and cost savings.<sup>1</sup> The successful Ethiopian pilot <sup>2</sup> provides a proven, real-world case study for accelerating adoption in origin countries by demonstrating direct economic benefit.

## D. Regulation

Bunachain is architected to embrace regulation and increase accountability. The platform's ability to track and verify data supports evolving global regulations, including complex EU standards. Furthermore, the platform's Ricardian contract system aligns with legislative milestones, such as the UK's Electronic Trade Documents Act 2023, which recognizes digitized trade documents, thereby providing the necessary legal framework for global digital trade.

## E. Competition

The competitive landscape for agricultural traceability includes dedicated blockchain solutions and corporate initiatives. Notable competitors include TraceX Technologies, TE-Food, Decapolis, Ecotrace, and Farmer Connect. Large corporations, such as Nestlé, also utilize QR codes and blockchain for coffee traceability.

Bunachain achieves a competitive edge by differentiating itself significantly from both existing centralized solutions (like the IBM Food Trust mentioned in the broader market analysis ) and commodity-specific platforms:

- **Vertical Focus and Integration:** By focusing exclusively on the complex coffee value chain, Bunachain can deliver deeper, more tailored functionality.
- **Infrastructure Advantage:** The use of Solana provides a decisive advantage in scalability, low transaction costs, and rapid finality, which is essential for handling the high volume of micro-transactions required to track thousands of small farmer lots.
- **Integrated Settlement:** Unlike many competitors that focus solely on data tracking, Bunachain integrates instant stablecoin settlement, removing a core point of friction in international trade.

Bunachain is structurally positioned as a collaborative entity at its heart and welcomes integration with other solutions, providing insulation from being perceived as competition by existing trade partners.

# TECHNOLOGY



Bunachain's technology stack is engineered for enterprise-grade performance, transparency, and cost-effectiveness, built upon the strategic foundation of the Solana blockchain.

## A. Platform Foundation: The Solana Advantage

Bunachain utilizes the Solana blockchain, which was selected specifically for its best-in-class performance metrics, low cost, and developer ecosystem.

- **Performance Metrics:** Solana delivers high throughput (up to 65,000 transactions per second) and extremely low transaction fees (typically less than \$0.001 per transaction). This high capacity is crucial for the platform's mission. Recording every small step from harvesting to drying to export requires high-frequency data logging. Without ultra-low fees, the traceability system would become economically prohibitive for small producers and would contradict the platform's goal of "Fair Access".
- **Time to Finality:** Solana's exceptionally fast time to finality (under one second) is critical for the financial settlement system, ensuring instantaneous confirmation of payments and trade contracts.
- **Scalability:** The architecture, utilizing innovations like compressed NFTs and parallel processing, ensures the platform is future-proof and can scale alongside exponential growth in trade volume.

## B. Technical Architecture And Deployment

### 1. Immutable Records and On-chain Transactions

Bunachain's core function is creating an immutable, transparent record of every coffee lot's journey. Every action such as the creation of a coffee lot, uploading a processing record, or executing an export document is logged securely on the Solana blockchain. This reliance on on-chain logs ensures that the data cannot be falsified or compromised, linking real coffee lots with specific wallet addresses for secure ownership transfer tracking.

## 2. Smart Contract Deployment

The development approach prioritizes security and robustness. Bunachain will confirm the deployment of its smart contract using the Anchor framework to Devnet as a foundational Phase 1 milestone. Anchor is the standard framework for Solana development, indicating a commitment to secure and scalable decentralized system engineering.

## 3. Data Connection and Access

The comprehensive traceability infrastructure will connect the Solana on-chain logs directly to a user-facing QR viewer. This will allow consumers, regulators, and trade partners to access instant, verified proof of origin simply by scanning a QR code linked to the physical coffee lot.

A key future strategic step is the release of the Traceability API Access. This API will allow external marketplaces, certifiers, logistics tools, and most critically, DeFi protocols, to integrate Bunachain's verified trace data seamlessly. This transition from a closed marketplace to an essential data utility layer is crucial for achieving ecosystem dominance and maximizing network effects by embedding Bunachain's verified data across the entire global trade infrastructure.

## **C. Underpinning Trust: Data Protection and Compliance**

Bunachain recognizes that institutional adoption hinges on trust, security, and compliance

### 1. Tamper-Proof Lot Metadata

The platform ensures verified quality assurance by storing critical, tamper-proof lot metadata such as coffee variety, harvest date, and region immutably on-chain. This data is the foundation for all financial and logistical assurance.

### 2. Fraud Reduction

Bunachain implements robust screening and monitoring processes, leveraging transparency as a primary deterrent against fraudulent practices. In the early stages, enhanced due diligence and strategic partnerships with global regulatory bodies (mirroring the plan for partnerships with agencies like the Food Standards Agency in the UK and the Food and Drug Administration in the United States ) will be utilized to insulate the platform from reputational damage.

### 3. KYC/AML Verifications

All participants must successfully complete robust Know Your Business (KYB) screening tailored to their jurisdiction and the specific nature of their trade. It is not possible to transact or integrate financial services on the platform without this foundational verification, ensuring a secure and accountable environment.

#### **D. Associated Markets for Future Entry**

Bunachain's immutable traceability system serves as the foundational data layer necessary to expand into advanced financial markets. The platform's current mandate is to establish a liquid spot market for physical coffee settlement. In the future, the platform will leverage this data layer to support the tokenization of coffee Real-World Assets (RWA). Future offerings will include decentralized exchanges aggregating opportunities for coffee futures, forwards, options, and fractionalized ownership of high-value coffee lots. The legally assured ownership of the physical asset will be the core component enabling these future financial instruments.

# THE PLATFORM AND USER EXPERIENCE



The Bunachain platform is a decentralized and democratized marketplace accessible to all participants in the coffee trade. It enables buyers and sellers to define and negotiate their desired deal structure, from product specification to payment terms, within a single integrated environment.

## A. Bunachain's Complete Product Offering

The platform addresses trade friction and inefficiencies by providing: an inclusive marketplace, fully transparent and publicly verifiable transactions, streamlined KYB/AML, direct stablecoin settlement, support for all International Commercial Terms (Incoterms), and improved access for trade financiers and insurers.

### 1. Ricardian Contracts

The secure on-chain transaction record serves as a dynamic Ricardian contract, which is a legally binding, static legal document that sets the real contractual terms of the smart contract. This provides digital assurance of ownership and rights for the physical commodity transaction, making the contract enforceable in law and optimizing efficiencies by replacing costly physical document management.

## B. The User Experience

### 1. Dashboards

Intuitive dashboards are designed for all stakeholder groups (farmer, processor, roaster) to provide easy-to-understand, actionable insights. These dashboards track live transactions, outstanding and upcoming payments, outstanding requirements (such as missing documents), and provide live tracking of shipping and logistic information.

## 2. Seller Listings

Sellers (farmers, cooperatives, and processors) can list specific coffee lots with comprehensive grading and classification information. All listings require supporting documentation and certification (e.g., phytosanitary certificates, SCA grading certificates) which are subject to verification by the system. Sellers can customize their price, quantity, minimum order size, and specific payment terms

## C. Supporting Functions

### 1. Onboarding Customers

Bunachain provides a dedicated onboarding service, recognizing the complexity of reaching the first mile in fragmented supply chains like Ethiopia. Since adoption of new technology by agricultural sectors can be slow, especially in origin markets, this investment is critical. The service actively employs or partners with local agents and model farmers to conduct first-mile traceability, ensuring that producers who may lack IT literacy or connectivity can still participate in the digital marketplace. The service assists sellers in listing products and negotiating deals, and assists buyers in ensuring products meet their specifications, thereby building conviction and trust in the platform among a loyal customer base

### 2. Dispute Resolution

A formalized structure for dispute resolution is crucial for reducing deal friction. This mechanism will employ external legal expertise specializing in international trade law to act as a third-party umpire for disputes arising from a transaction.

### 3. Fulfilment and Tracking

Bunachain tracks each shipment end-to-end. This involves integrating with logistics providers and utilizing technologies like IoT devices and freight forwarder data to track land and sea shipments. The future vision includes incorporating real-time updates on critical conditions such as temperature and humidity, which may adversely impact food quality, to help stakeholders respond immediately and eliminate food waste

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## **D. Revenue Model**

Bunachain employs a diversified revenue model to ensure sustainable growth and incentivize high-volume usage through low friction charges.

### **1. Transaction Charges**

Bunachain's primary revenue stream is derived from small transaction fees to encourage high-volume usage and adoption. The fee is set at 0.3% on the buyer side for trade execution. This low-friction charge structure ensures profitability is directly tied to platform activity and market share growth, making it economically attractive compared to traditional high-fee trade channels.

### **2. Subscriptions to the Platform**

Tiered subscription plans (Basic, Advanced, Enterprise) will be offered to large institutional users, including importers, roasters, trade finance houses, and insurers. These plans provide access to premium services, Traceability API Access, advanced data analytics, and dedicated customer support required for complex supply chain and reporting management.

### **3. Lead Generation**

Revenue will also be generated by integrating a wide variety of essential service suppliers (e.g., trade finance, logistics, insurance) directly onto the platform. Bunachain will charge commissions or fees to these providers for connecting them to high-quality trading opportunities (leads) generated through executed deals, thus diversifying the platform's income stream.

# STRUCTURE AND TEAM



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## A. Bunachain Entity Structure

To support the decentralized nature of the project while maintaining legal compliance, a formalized structure is necessary, mirroring the structure required for institutional confidence in the broader agricultural trade.

- Bunachain International (Proposed Ltd. Entity): This legal entity will receive platform revenues, pay costs, and retain control over the platform's core development, maintenance, and operation.
- Bunachain Foundation: A non-profit entity that will receive a mandated allocation of platform profits to fund sustainable coffee farming education and community impact projects in origin countries.

To facilitate interaction with traditional financial and legal systems which is essential for handling commodity trade and RWA the project will require a compliant legal wrapper, such as a Cayman Islands foundation company. This grants the organization legal personality, allowing it to own intellectual property (IP), sign contracts, and manage assets, thereby mitigating a significant early operational risk

## B. Core Leadership and Expertise

The Bunachain team is built around a strong core of specialized Web3 and engineering talent, led by its four founders who are responsible for the platform's vision, architecture, and deployment. The founders are supported by a dedicated group of talented developers and designers driving the project forward.

The four founders and leaders driving the Bunachain vision are:



## Minase Tsegaab

### TEAM LEAD

*A visionary full stack engineer and blockchain innovator. Leads BunaChain's product direction and architecture.*



## Yeabsira Tessema

### PRODUCT DESIGNER

*Creative mind behind BunaChain's intuitive design system. Focused on user-first experiences and clean visual storytelling.*



## Minase Zerfu

### BLOCKCHAIN DEVELOPER

*Expert in decentralized systems. Ensures every transaction on BunaChain is secure, scalable, and transparent.*



## Aron Asfaw

### FRONT-END DEVELOPER

*Turns ideas into polished, fast-loading interfaces. Passionate about smooth user flows and responsive design.*

While the technical team demonstrates expertise in engineering and design, institutional credibility for commodity trading platforms requires deep expertise in trade finance, international commodity law, and multi-jurisdictional compliance roles that are critically emphasized by analogous projects. Therefore, the strategic mandate includes the immediate recruitment of advisors with expertise in African market development (to scale the Ethiopia pilot), global trade finance, and legal compliance (specifically related to Ricardian contracts and Incoterms) to fill these necessary structural gaps

# ROADMAP



The Bunachain roadmap is structured across four phases, integrating technical foundations with strategic market adoption and the eventual financialization of coffee as an RWA.

## **A. Phase I: Foundation and DevNet Deployment (Q1 2026)**

This phase focuses on establishing the core technical infrastructure. Key milestones include the determination of the core architectural design and the successful deployment of the smart contract using the robust Anchor framework to the Solana Devnet.

## **B. Phase II: Pilot Rollout and Real-World Testing (Q2 2026 – Q3 2026)**

Phase II will validate the platform's real-world functionality in a complex environment. The team will execute a Pilot Rollout in Ethiopia (starting Q2 2026), onboarding local coffee processors and exporters. This phase will achieve the testing of real-world lot submission and flow tracking, and successfully connect the full traceability infrastructure, linking Solana on-chain logs to the QR viewer.

## **C. Phase III: Core Platform Launch and Expansion (Q4 2026 – Q2 2027)**

This phase centers on the public launch and establishing foundational market operations:

- **MVP Launch:** Launching the Marketplace Minimum Viable Product (MVP), facilitating secure, integrated USDC settlement.
- **Compliance Integration:** Implementing full Know Your Business (KYB) and Anti-Money Laundering (AML) protocols, alongside the finalized legal framework for dispute resolution.
- **Market Onboarding:** Onboarding the first cohort of major international importers and roasters, leveraging data from the Ethiopia pilot for validation.

## D. Phase IV: Ecosystem Partnerships and RWA Integration (Q3 2027 - Q4 2028)

Phase IV scales the platform’s utility and integrates it into the global financial ecosystem:

- **API Release:** Launching the Traceability API Access to enable deep integration into external logistics systems, existing marketplaces, and certification platforms.
- **Global Expansion:** Initiating aggressive global outreach and formalizing partnerships with major international coffee cooperatives, platforms, and certifiers.
- **RWA Enablement:** Finalizing and piloting Real-World Asset enablement standards for coffee futures and inventory, transforming verifiable coffee lots into transparent, tradeable digital assets.
- **Impact Fund Launch:** Activating the Impact Farming Fund to provide grants and support to producers.

PHASE	TIMEFRAME	TECHNOLOGY MILESTONES	MARKET MILESTONES
PHASE I: FOUNDATION	Q1 2026	Smart contract deployment using Anchor to Devnet	Product architecture definition and core engineering team formation.
PHASE II: PILOT AND TESTING	Q2 2026 - Q3 2026	Full traceability infrastructure connecting Solana logs to QR viewer.	Pilot Rollout in Ethiopia (onboarding local partners).
PHASE III: PLATFORM LAUNCH	Q4 2026 - Q2 2027	Full KYC/KYB integrated marketplace MVP.	Onboarding first cohort of major international importers and roasters.
PHASE IV: RWA INTEGRATION & SCALE	Q3 2027 - Q4 2028	Traceability API Access release for marketplace integration RWA enablement standards finalized.	Launch of Impact Farming Fund; Global expansion beyond initial pilot market.

# RISK FACTORS

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A transparent and comprehensive assessment of risk factors is necessary for institutional engagement. Bunachain categorizes risks into market, operational, and financial dimensions, following industry best practices.

## A. Market and Industry Risks

### 1. Geopolitical Instability and Climate Change

The coffee trade is highly susceptible to external shocks such as geopolitical instability (e.g., conflict or trade route disruptions [1]) and climate change, which increases food insecurity. The need for the cost efficiencies and supply chain resilience that Bunachain provides is only amplified by these factors. By capturing value throughout the chain, the platform is better insulated from external market shocks than traditional opaque commodity traders.

### 2. Competition

The largest competitive risk is the entry of an established trading entity or multinational corporation creating a proprietary, centralized marketplace leveraging existing financial resources and networks. However, Bunachain is insulated by its decentralized nature; it is not owned or controlled by a major player and is therefore perceived as a neutral, collaborative entity. Furthermore, the low transaction fees and high level of integrated service make the creation of competing internal platforms less appealing for potential users

## B. Operational Risks

### 1. Fraud

A core value proposition is fraud reduction, but in the early stages when trade volume is low, the potential impact of a single fraudulent transaction is higher, creating significant reputational risk. Mitigation strategies include: employing enhanced due diligence on all new onboards, particularly those from the pilot market in Ethiopia, maintaining strategic partnerships with critical law enforcement and food standards agencies, and potentially insuring and underwriting early transactions until a comprehensive understanding of the threat landscape is achieved.

## 2. Cyber Security and Data Protection

Handling sensitive international trade data requires strict adherence to data privacy regulations. Bunachain is committed to achieving full GDPR compliance at launch and pursuing SOC 2 compliance certifications within the first year of operations. The security architecture includes access controls, change management procedures, and continuous monitoring to manage and protect sensitive multi-jurisdictional data.

## 3. Scalability and Performance

Failure to scale or maintain high performance during peak trading periods could lead to costly congestion and transaction failure. This risk is primarily mitigated by the strategic choice of Solana, which is designed for high throughput (65,000 TPS) and low latency. The technology is optimized and rigorously tested in autoscaling cloud environments to support tens of thousands of simultaneous users.

## **C. Financial Risks**

### 1. Funding and Cash Flow

Bunachain's ability to execute its ambitious roadmap is dependent on continued investment from shareholders and platform growth. The platform's growth is forecast to provide the necessary liquidity to fund aggressive technology development and expansion for the next three years, substantially reducing cash flow risk, especially as the platform targets profitability from transaction fees in its initial years of operation.

# CONCLUSION

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Bunachain stands as the essential decentralized infrastructure required to solve the long-standing problems of friction, opacity, and inequity in the global coffee supply chain. By integrating the high-performance capabilities of the Solana blockchain with a bespoke platform designed for the complex “Farm to cup” journey, Bunachain achieves instant stablecoin settlement, drastically reduces transaction costs, and delivers immutable, verified traceability for every lot.

The upcoming execution of the Ethiopia pilot in Q2 2026 will demonstrate operational readiness in complex origin markets. Furthermore, the platform is strategically positioned to capitalize on the convergence of commodity trade and decentralized finance. Bunachain’s immutable data layer enables the future creation of liquid Real-World Asset tokens, transforming coffee inventory and futures into transparent, tradeable digital assets.

This integrated approach provides a clear, defensible pathway to sustained revenue generation and market dominance, benefiting all participants making high-quality coffee more affordable and trusted for consumers, and unlocking billions of dollars of latent value and increased revenue for smallholder producers. Bunachain represents the future of transparent, equitable commodity trade.