Agricultural RWA (Real World Assets) 2025 Annual Development Report

Issuing Institution: BLUEPINE TECH FOUNDATION Strategic Research Institute

Report Date: November 2025

Core Summary: This report systematically reviews the global development trends of agricultural Real World Asset tokenization in 2025. Currently, the overall RWA market is experiencing high-speed growth, yet the agricultural sector accounts for less than 3%, creating a significant disparity with the approximately $2.7 trillion global agricultural asset scale, indicating substantial potential and opportunity. The report provides an in-depth analysis of the core challenges facing agricultural RWA—valuation, compliance, and liquidity—and, through typical cases, reveals its revolutionary path in reshaping the agricultural asset landscape, empowering smallholder farmers, and connecting to global capital.

Market Overview: Structural Imbalance Amid High-Speed Growth

1. Explosive Growth of the Overall Market

The RWA market achieved approximately 130% growth over the past three years, with its scale surging from $10 billion in 2023 to $23.39 billion in 2025.

2. Huge Potential but Minimal Share for Agricultural RWA

The current growth in the RWA market is primarily concentrated in credit and government bond tokenization, which together occupy about 90% of the market share. In contrast, global agricultural assets, valued at approximately $2.7 trillion, account for less than 3% of the RWA market. This structural imbalance precisely indicates that agricultural RWA possesses extremely broad potential for incremental growth.

Core Challenges: Four Major Dilemmas for On-Chaining Agricultural Assets

1. Valuation Black Box

Non-standardized assets like farmland and crops lack credible data anchors, leading to significant challenges in on-chain valuation, which has caused tolerance for price volatility to plummet by 40%.

2. Compliance Maze

Cross-border transactions of agricultural assets face issues of overlapping multi-jurisdictional regulations, with resulting compliance friction consuming an average of 23% of project profits.

3. Liquidity Gap

Inefficient conversion between off-chain assets and on-chain value results in the average daily turnover rate of agricultural RWA tokens being less than 1/10th of that of traditional security RWAs.

4. Backlash from Traditional Interest Chains

The existing intermediary system resists on-chain transparency, leading to a staggering 71% of agricultural RWA projects facing boycotts from offline channels.

Solutions: Technological Innovation and Model Practices

Facing the above challenges, industry pioneers have explored effective solutions, focusing on building a credible, compliant, and efficient agricultural RWA infrastructure through a combination of technologies.

1. IoT + Blockchain Dual Anchoring to Solve the Valuation Black Box

Case Study: An agricultural product on-chain platform deployed soil sensors on cocoa farms in Ghana, transmitting data such as rainfall and pest indices in real-time, and generating "Yield NFTs" as on-chain certificates.

Outcome: Buyers inspect goods before payment, reducing transaction price dispute rates by 52%.

2. Ricardian Contracts to Navigate the Multi-Jurisdictional Compliance Maze

Case Study: Based on the UK's Electronic Trade Documents Act 2023, 13 types of documents, including certificates of origin, were embedded into smart contracts.

Outcome: When goods enter different markets (e.g., EU, Southeast Asia), the contract automatically invokes local compliance clauses, reducing compliance costs from the original 12% to 3% (taking cocoa beans as an example, saving approximately $465 per ton).

3. Dynamic Clearing Engine + Stable Pool to Unblock Liquidity Deadlocks

Approach: Platforms established US dollar stablecoin pools coupled with dynamic clearing mechanisms, significantly improving the transaction and settlement speed of agricultural product tokens on the chain.

Outcome: The adoption of such models doubled the average daily token turnover rate compared to the industry average.

Case Studies: From Local Specialties to Global Carbon Sinks

1. Cross-Border Collaboration between Dimitra and MANTRA

Asset Classes: Focused on cocoa production in the Brazilian Amazon and forest carbon sink projects in Mexico.

Model & Vision: By tokenizing green agricultural assets, they provide innovative financing for farmers and allow global investors to participate in sustainable value creation. The project in Mexico covers over 20,000 hectares and is expected to generate nearly 1 million traceable carbon credits over the next decade.

2. RWA Practice of "Malu Grapes" in an Asian Region

Asset Digitization: Collected soil, light, and other data via IoT devices, achieved full traceability on the regional digital agriculture cloud platform, and finally issued the grape assets as NFTs via blockchain technology.

Win-Win for Brand and Benefits: RWA transformation built a brand barrier in the digital era for "Malu Grapes," helping it maintain stable sales volume and price in 2025, becoming a "lone brave" in the market and attracting study tours from various locations.

3. Industry Trends: Giant Layouts and Ecosystem Building

Yimutian Group and Hong Kong BC Technology Group formed a strategic partnership, planning to purchase no less than $12 million worth of stablecoins to optimize global agricultural trade and jointly develop rare agricultural product RWAs.

The Hong Kong-Shenzhen Agricultural RWA Innovation Forum was successfully held, discussing the assetization paths of high-value specialty agricultural products like agarwood, dried tangerine peel, and star anise, aiming to build a digital pilot for agricultural assets in the Greater Bay Area.

Future Outlook: Trends and Recommendations

"IoT + Blockchain" Builds Credible Data Anchors: Privacy computing technologies like Zero-Knowledge Proofs and Federated Learning will be more widely applied in data collection and usage, balancing privacy protection and value extraction.

Specialty Agricultural Products as Breakthroughs: High-value, easily standardized specialty agricultural products like "Malu Grapes," agarwood, and dried tangerine peel will continue to serve as pioneering models for agricultural RWA practice, with their successful experiences gradually permeating into the bulk agricultural product sector.

Recommendations for Participants:

For Farmers/Cooperatives: Actively embrace agricultural digitalization, record and upload farming data through compliant channels to lay a credible data foundation for potential assetization.

For Investors: Focus on whether the project's technical architecture effectively addresses the three major pain points—valuation, compliance, and liquidity—as well as the authenticity and profitability of the underlying assets.

For Industry Builders: Dedicate efforts to building open technical standards and collaborative ecosystems, promoting agricultural RWA's transition from "case-specific innovation" to "large-scale application."

Conclusion

Agricultural RWA is no longer a distant concept but has become a practice in progress. It is quietly driving a profound transformation: enabling the value of every acre of farmland and every plant to flow freely along the chain of trust, ultimately converging into the ocean of global capital and giving back to the land that nourishes us. Although challenges remain ahead, the direction is clear.

[Friendly Reminder]

The content of this report is based on public information and research analysis, is for reference only, and does not constitute any investment advice. The market carries risks, and decisions should be made cautiously.