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RWANDA BANKERS' ASSOCIATION

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The 23-6 Paradox:

Rethinking Agricultural Finance and Structural Transformation in Rwanda

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RBA Research Note

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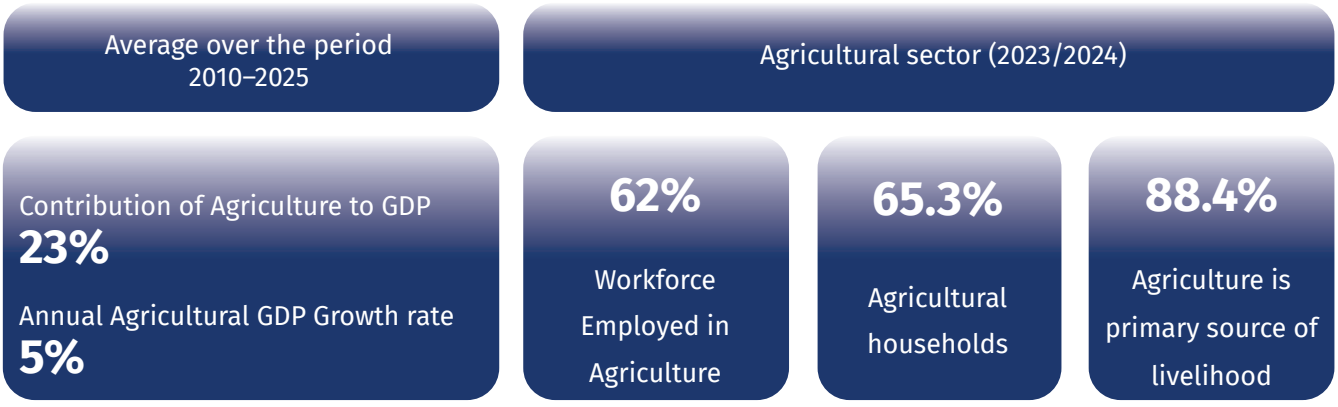
1. Background

Agriculture remains central to Rwanda's economy, contributing approximately 23% of GDP and employing over 62% of the workforce. The sector, however, receives only about 6% of total banking industry credit. This paper examines the structural, institutional, and financial factors underlying this imbalance. It argues that the agricultural credit gap reflects both rational risk pricing by financial institutions and systemic constraints limiting bankable demand. The paper proposes a shift from traditional lending models toward integrated value-chain finance, digital risk assessment, blended finance structures, and regulatory innovations. Addressing the "23-6 paradox" is essential for inclusive growth, rural income transformation, and long-term structural transformation.

The 23–6 paradox is the mismatch where agriculture contributes about 23% of GDP but receives only 6% of formal credit.

2. Framing the Paradox

Rwanda's economy continues to evolve through structural transformation. While services and industry have expanded rapidly, agriculture remains foundational to employment, livelihoods, and export performance. According to the Seventh Integrated Household Living Conditions Survey (EICV7, 2023-24), agriculture contributes approximately 23% of GDP and employs around 62% of the workforce. An estimated 2.2 million households – representing 65.3% of all households – depend on agriculture, with 88.4% relying on it as their primary livelihood (AHS, 2024). These households have an average size of 4.4 persons, accounting for an estimated 9.6 million people (2.2 million * 4.4), which underscores the high level of population dependence on agricultural activities.



Despite this economic weight, agriculture receives only about 6% of total banking sector credit (2024 data). If credit allocation were aligned with agriculture's GDP contribution, the sector would receive nearly four times its current share. This 23-6 divergence raises a critical policy question: does the limited credit allocation reflect rational risk pricing by financial institutions, or a structural under-allocation of capital to a sector central to inclusive growth? This gap suggests either (i) a systemic financing constraint limiting capital absorption, or (ii) deep structural risk factors that justify banks' cautious exposure. Understanding which of these dominates is essential for designing effective policy interventions.

3. Structure of Rwanda's Agricultural Economy

Rwanda's agricultural sector is characterized by a diversified production base that supports both domestic consumption and export earnings. The country produces a wide range of food crops for local markets, including beans, maize, soybeans, rice, cassava, potatoes, bananas, sweet potatoes, vegetables, and fruits, which play a central role in ensuring food security and household income. In addition, Rwanda's economy benefits from the export of traditional cash crops such as tea, coffee, and pyrethrum, which remain key sources of foreign exchange. Livestock farming also constitutes an important pillar of agricultural activity, with households rearing cattle, goats, sheep, pigs, poultry, and rabbits, providing food, income diversification, and sustained support to rural livelihoods.

Agriculture remains a key driver of Rwanda's export performance, accounting for approximately 37% of total export revenues. In fiscal year 2024/25, agricultural exports reached a volume of 969,326 metric tonnes, generating export earnings of USD 893.2 million. Export performance was largely driven by diversified agricultural products, including grains, cereals, fish, and animal and livestock products, which contributed USD 572.5 million, representing 64% of total agricultural export revenues. Traditional export crops accounted for USD 234.6 million, equivalent to 26% of agricultural export earnings, with coffee contributing 13%, tea 12%, and pyrethrum 1%. Horticultural exports, comprising fruits, vegetables, and flowers, generated USD 86.1 million, accounting for 10% of total agricultural export revenues (MINAGRI, Annual report 2024/2025). This export composition underscores the strategic importance of agriculture not only in foreign exchange generation but also in export diversification and value chain development.

The importance of agriculture is further reflected in land use patterns. According to the Seasonal Agricultural Survey (SAS, 2025), Rwanda's total land area remained at 2.376 million hectares during the 2025 agricultural year. In Season A, approximately 1.399 million hectares (59%) were utilized for agricultural purposes, including 1.019 million hectares for seasonal crops, 0.492 million hectares for permanent crops, and 0.096 million hectares for permanent pasture. In Season B, agricultural land use increased slightly to 1.423 million hectares (60%), of which 1.022 million hectares were devoted to seasonal crops, 0.524 million hectares to permanent crops, and 0.1 million hectares to permanent pasture. These structural characteristics underscore the central role of agriculture in Rwanda's economic landscape and highlight the importance of effective agricultural financing in supporting productivity, resilience, and inclusive economic growth. Over 70% of agricultural households operate on plots smaller than 0.5 hectares.

Fragmented landholding limits economies of scale, mechanization, and commercialization from banking perspective, small and dispersed plots increase transaction costs per loan, reduce collateral value, and weaken the commercial viability of credit appraisal.

As Rwanda undergoes structural transformation, the relative decline in agriculture's GDP share may partly explain financial institutions' portfolio reallocation toward lower-risk sectors such as services and trade. However, given agriculture's high employment intensity, insufficient financial deepening risks widening rural-urban income disparities and slowing inclusive growth.

4. Agricultural Credit Landscape

Credit to agriculture remains limited, accounting for about 6% of total banking sector lending in 2024 (MINAGRI, 2024/2025). This financing is predominantly provided by microfinance institutions, which allocate approximately 13% of their loan portfolios to agriculture, while commercial banks' exposure to the sector remains below 3% (BNR, MPFSS Report, March 2025). This skewed credit structure reflects lenders' risk aversion, driven by historically elevated non-performing loan ratios and income volatility in agricultural activities. In addition, the segmentation suggests that agricultural lending is concentrated in smaller, short-term, higher-cost loan products, while medium-and longterm investment finance remains limited. As a result, borrowing costs remain high and credit availability constrained, reinforcing persistent underinvestment and subdued productivity growth.

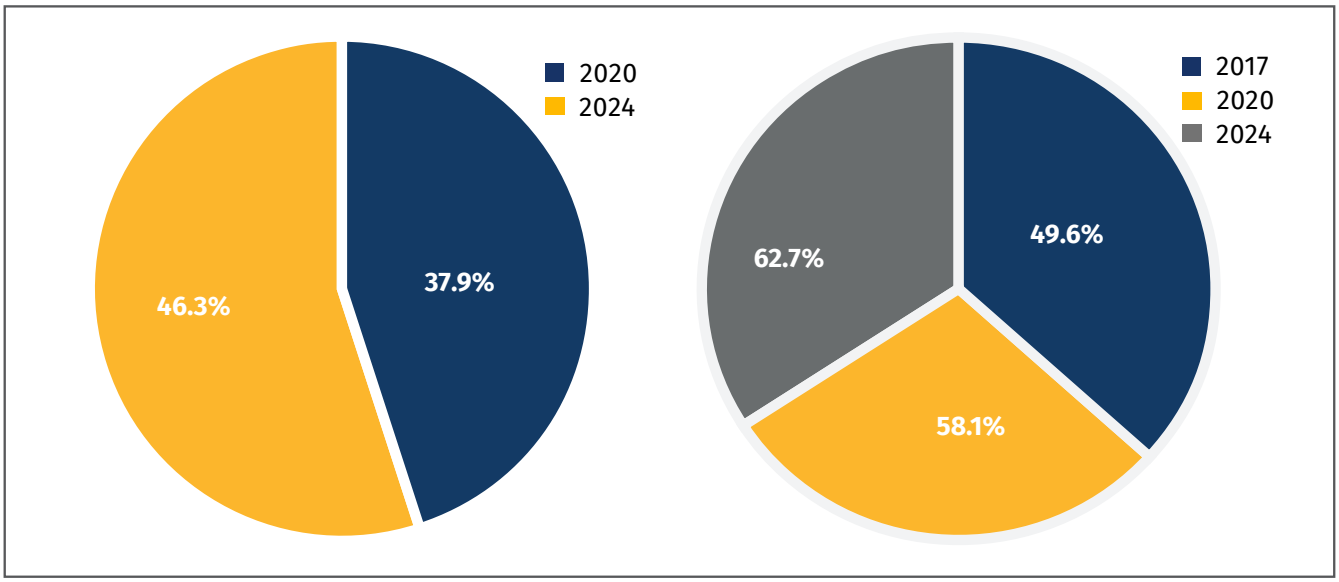
Credit to Agriculture as % of Total Loans	Share of MFI Loan Portfolio Allocated to Agriculture	Share of Bank Loan Portfolio Allocated to Agriculture
6%	13%	2.7%

At the household level, access to financial services remains uneven and largely informal, limiting farmers' capacity to invest in productivity-enhancing inputs. Although financial inclusion indicators are relatively strong, with about 62.7% of agricultural households holding a bank account and 72.9% are members of savings and credit cooperatives, access to formal credit remains limited. During the 2023/24 agricultural year, 71.1% of agricultural households sought loans, yet the majority relied on informal financing channels, particularly tontines, which accounted for 58.1% of loan requests. Other sources included relatives and friends (25.1%), commercial banks (6.4%), savings and credit cooperatives (6.0%), and public financial schemes such as VUP (2.8%) (AHS, 2024).

This pattern suggests that financial inclusion in agriculture is largely transactional rather than transformational. Account ownership has not translated into meaningful capital formation or investment finance. The reliance on informal finance reflects both limited availability and stringent lending conditions in the formal financial system.

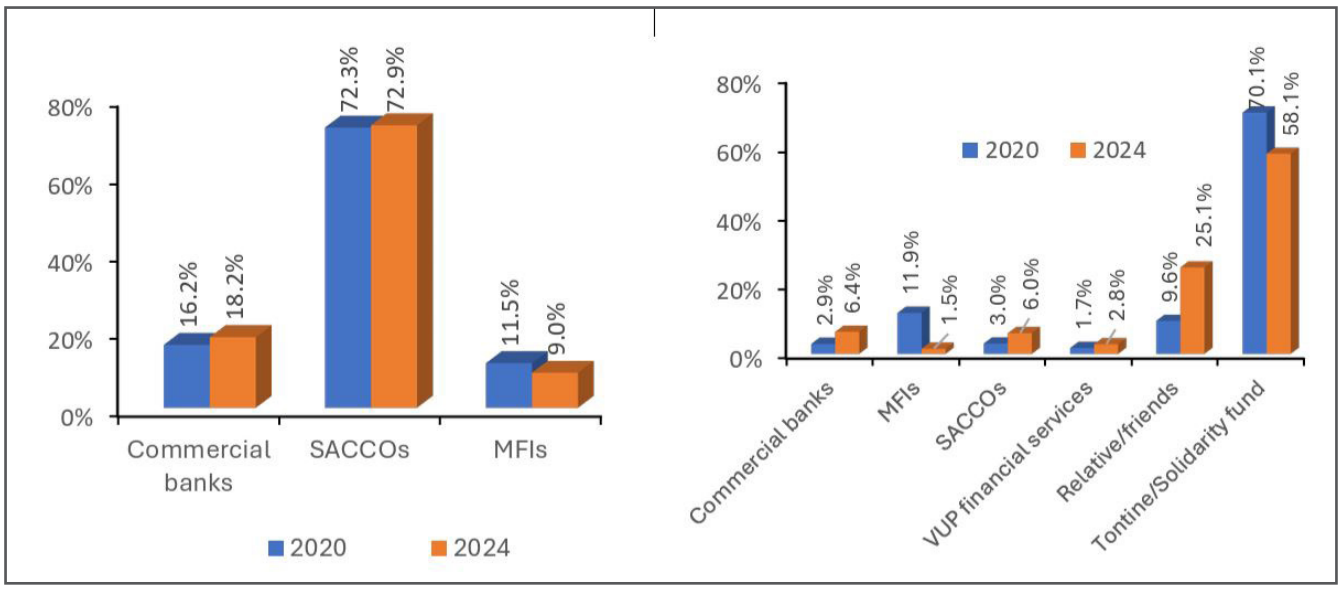
The stagnation of agriculture's credit share over time suggests that existing de-risking mechanisms have not significantly shifted bank risk appetite. Regional benchmarking would further clarify whether Rwanda's agricultural credit allocation reflects structural characteristics common to East African economies or a relatively deeper financing gap.

Figure 1: (A) Farmers having a bank account, (B) Agricultural HHs with at least one member has a bank account



Source: NISR (Agricultural Household Survey, 2017, 2020, 2024)

Figure 2: (A) Agricultural HHs by type of FIs in which they have a bank account, (B) Agricultural HHs and source loan



Source: NISR (Agricultural Household Survey, 2020, 2024)

To mitigate these risks, the Government of Rwanda has implemented several de-risking mechanisms, including the National Agricultural Insurance Scheme (NAIS) and partial credit guarantee arrangements. The National Agricultural Insurance Scheme, launched in 2019 and subsidized at 40% by the Government, has expanded coverage in recent years.

For the 2024/2025 period, the number of insured livestock increased significantly to 440,798, up from 274,183 in 2023/2024, representing a 61% increase. This total comprises 53,125 cattle (12.1%), 372,012 poultry (84.4%), and 15,661 pigs (3.6%). At the same time, crop insurance coverage expanded to 37,034 hectares, compared to 33,269 hectares in 2023/2024. The insured crop area is dominated by rice with 25,799 hectares (69.7%), followed by maize with 7,706 hectares (20.8%), while smaller shares include 1,573 hectares of Irish potatoes (4.2%), 1,007 hectares of soybeans (2.7%), 502 hectares of beans (1.4%), 207 hectares of chili (0.6%), 130 hectares of French beans (0.4%), and 110 hectares of cassava (0.3%).

Despite this progress, farmer participation remains low, with fewer than 4% of farmers holding active crop insurance policies, limiting the effectiveness of insurance in reducing credit risk and encouraging broader lending to the sector (Rwanda Economic Update, April 2025). These challenges are further compounded by low investment in innovation, as expenditure on agricultural research and development remains at around 0.06% of agricultural GDP, well below global benchmarks for both low and middle-income countries (Rwanda Economic Update, April 2025). Strengthening agricultural finance, expanding risk-sharing mechanisms, and scaling up investment in research and extension land services will be critical to enhancing productivity, resilience, and sustainable growth in the sector.

5. Structural Constraints: The Four Risk Pillars

Agricultural credit penetration in Rwanda is constrained by interlinked structural risks, which can be categorized into four pillars.

Source: RBA Research Center

5.1. Climate and Production Risks

Agriculture remains highly exposed to weather variability, pests, diseases, and soil difference. Yield volatility increases income uncertainty and raises expected default probabilities. Although the national Agricultural Insurance Scheme (NAIS) has expanded since its launch in 2019, coverage remains limited, with few than 4% of farmers holding active crop insurance policies.

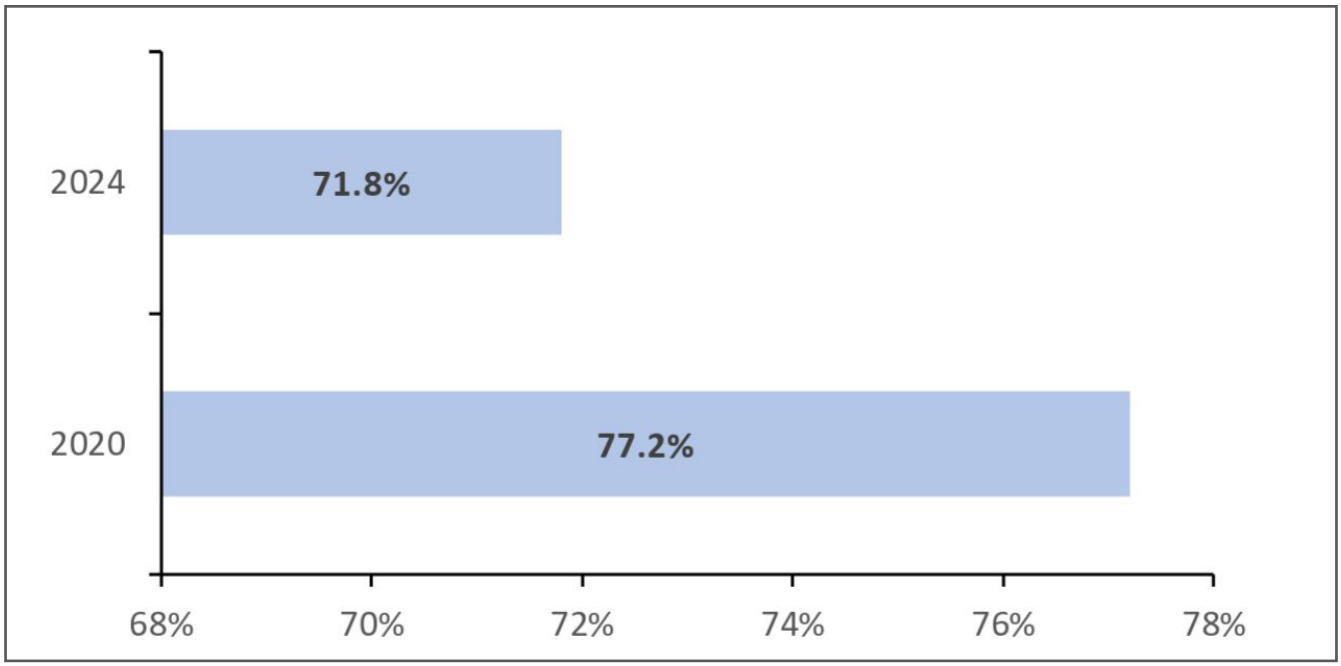
5.2. Market and Price Risk

Agricultural production cycles are long, particularly for perennial crops such as coffee and tea. Price volatility, transport constraints, inadequate storage, and post-harvest losses reduce income stability. These factors heighten financial uncertainty and justify higher risk premiums in agricultural lending.

5.3. Collateral and Institutional constraints

Smallholder farmers often lack formal collateral. Over 90% cultivate farms of one hectare or less. Traditional lending models relying on titled land as security are poorly suited to fragmented, subsistence-oriented production structures.

Figure 3: Percentage of agricultural households below 0.5ha



Source: NISR(AHS,2024)

Revenue in agriculture is not continuous – it is realized only after the harvest. However, standard loan products typically require fixed, frequent repayments that begin shortly after disbursement. Stringent loan requirements lead to delays in appraisals and fund disbursement, posing significant challenges for agricultural lending in Rwanda. Such delays disrupt time-sensitive planting and harvesting cycles, increase repayment risks, and reduce the effectiveness of credit support to farmers.

5.4. Information and Capacity Gaps

Limited financial literacy and weak record-keeping practices increase information asymmetry. Approximately 75% of agricultural household heads have attained at most primary education. This constrains banks' ability to assess cash flows and increases monitoring costs. Together, these four risk pillars create a high-risk equilibrium in which lenders limit exposure and farmers under-invest, perpetuating low productivity and shallow financial deepening.

6. Re-Imagining Agricultural Finance: From Risk Avoidance to Risk Management

Closing Rwanda's agricultural credit gap requires more than expanding loan volumes. It requires redesigning the financial architecture around agriculture's structural realities – seasonality, climate volatility, fragmented landholdings, and limited formal collateral. The goal is not to force banks to lend more, but to make agricultural lending commercially viable, risk-calibrated, and scalable. This transformation must occur on both the supply side (financial institutions) and the demand side (farmers and ecosystem actors).

6.1. Supply-Side Reforms: Making Agricultural Lending Bankable

6.1.1. Moving from physical Collateral to Cash-Flow-Based Lending

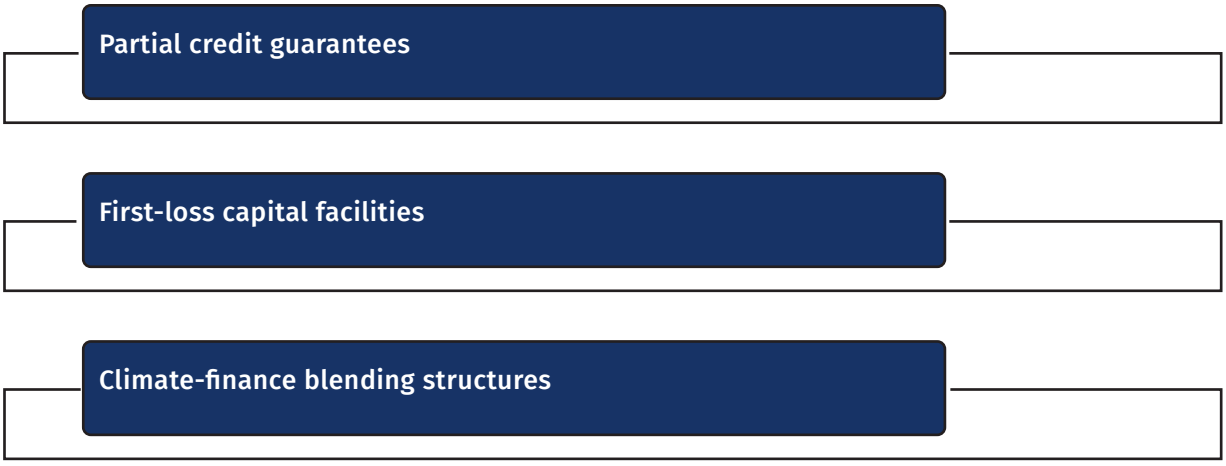
Traditional reliance on titled land as collateral is poorly suited to Rwanda's smallholder-dominated agricultural structure. Financial institutions should progressively shift toward cash-flow-based and contract-based lending models.

Value Chain Finance offers a practical pathway. Under structured tripartite agreements between banks, farmers, and off-takers, forward delivery contracts serve as quasi-collateral. Loan repayment is deducted directly at the point of sale, significantly reducing side-selling risk and improving repayment discipline. Similarly, warehouse receipt financing allows stored crops in certified facilities to serve as collateral. This reduces distress sales, stabilizes prices, and converts post-harvest output into bankable assets.

These models align lending decisions with expected revenue streams rather than fixed assets.

6.1.2. Integrate Risk-Sharing Mechanisms Instead of Lowering Interest Rates

Rather than administratively lowering interest rates – which risk distorting credit markets – policy efforts should focus on structured risk-sharing mechanisms. Blended finance instruments below can absorb part of the downside risk while preserving prudent credit discipline.



Where crop insurance exists – particularly under the National Agricultural Insurance Scheme (NAIS) – financial institutions should integrate insured production into risk-weighted credit models. However, empirical evaluation is needed to determine whether insured farmers demonstrate materially lower default rates. Without such evidence, insurance may not fully translate into reduced capital charges or expanded credit supply. The objective should be to convert risk into measurable, priced, and shared exposure – not to suppress it artificially.

6.1.3. Develop Specialized Agricultural Banking Capacity

Agricultural lending requires sector-specific expertise. Financial institutions should invest in dedicated agricultural credit teams capable of:

• Assessing crop cycles and yield variability

• Evaluating value-chain dynamics

• Structuring seasonal repayment schedules aligned with harvest periods

Repayment schedules should be synchronized with agricultural cash flows rather than standardized monthly structures designed for salaried borrowers. This shift from product standardization to sector adaptation can significantly reduce non-performing loans and strengthen client relationships.

6.1.4. Reduce Information Asymmetry Through Digital and Community Channels

Limited financial literacy and weak record-keeping contribute to elevated perceived risk. Financial institutions should leverage existing:

• Digital transaction histories (mobile money data)

• Satellite-based crop monitoring

• Weather index data to strengthen credit assessment and monitoring.

At the same time, outreach through community platforms such as Umuganda and Inteko y'abaturage can bridge trust gaps and improve understanding of financial products. Communication strategies must be adapted to local contexts to convert formal financial access into effective financial usage.

6.2. Demand-Side Reforms: Building Bankable Farmers and Value Chains Bankable

Improving credit supply alone is insufficient. Agricultural households must become more bankable through structural improvements.

6.2.1. Strengthen Aggregation Through Cooperatives and Farmer Groups

Only 11.8% of agricultural households report membership in cooperatives or associations (AHS 2024). Expanding aggregation structures can:

• Reduce transaction costs per borrower

• Improve bargaining power

• Enable bulk input purchases

• Facilitate joint loan applications

Aggregation improves scale, predictability, and monitoring efficiency – directly enhancing creditworthiness.

6.2.2. Invest in Infrastructure That Reduces Credit Risk

Improved rural roads, storage facilities, and market access are not merely development investments – they are financial risk mitigation tools. Better infrastructure:

• Reduces post-harvest losses

• Stabilizes farm-gate prices

• Improves cash-flow predictability from a financial perspective, infrastructure reduces default risk by stabilizing income streams.

6.2.3. Promote Climate-Resilient and Productivity-Enhancing Technologies

Greenhouse farming, irrigation systems, and improved seed technologies increase yield stability and enable year-round production. Higher productivity improves farmers' repayment capacity and reduces volatility. Access to finance can be structured around productivity-enhancing investments, creating a virtuous cycle between technology adoption and credit expansion.

6.2.4. Expand Insurance with Measurable Impact

Scaling crop and livestock insurance coverage remains essential. However, expanding coverage alone is insufficient. Policymakers must rigorously evaluate whether insured farmers demonstrate lower default rates and improve loan performance. Without empirical linkage between insurance participation and credit performance, insurance risks becoming a parallel subsidy rather than a true risk-transfer instrument.

Conclusion

Rwanda's agricultural financing challenge is not simply a question of increasing credit volumes. It is a structural transformation challenge. While agriculture contributes roughly 23% of GDP and employs over 60% of the workforce, it receives only 6% of formal credit. This imbalance – the 23–6 paradox – reflects both legitimate risk concerns within the financial system and deep structural constraints within the agricultural sector itself. Expanding agricultural lending without reforming the underlying risk architecture would be unsustainable. Equally, maintaining the status quo risks entrenching low productivity, rural income disparities, and limited structural transformation. The solution therefore lies not in forcing credit expansion, but in redesigning the ecosystem that determines agricultural bankability. A coherent policy agenda should focus on five strategic priorities:

- Shift from collateral-based to cash-flow-based lending, leveraging value-chain contracts, warehouse receipts, and structured repayment aligned to harvest cycles.
- Strengthen risk-sharing frameworks, including insurance deepening, partial credit guarantees, and blended finance instruments that preserve market discipline while reducing systemic exposure.
- Invest in agricultural data infrastructure, digital credit scoring, and performance tracking to reduce information asymmetry and improve risk pricing.
- Promote farmer aggregation and productivity-enhancing technologies, transforming fragmented subsistence units into commercially viable production clusters.
- Align macro-financial and regulatory frameworks to support sustainable agricultural credit expansion without compromising financial stability.

Agricultural finance reform should be viewed as a pillar of Rwanda's broader structural transformation strategy. A modern, climate-resilient, and commercially integrated agricultural sector is not merely a rural development objective – it is essential for export diversification, food security, employment absorption, and inclusive growth.

Ultimately, resolving the 23–6 paradox will determine whether agriculture remains a subsistence safety net or evolves into a competitive, investable, and productivity-driven engine of national development. The opportunity is not simply to lend more – but to lend smarter, de-risk better, and build a financial architecture capable of supporting Rwanda's next phase of growth.

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