



Rwanda Food Innovation Ecosystem Strategy 2026 – 2035

ACKNOWLEDGEMENTS

The Rwanda Food Innovation Ecosystem Strategy (2026-2035) is the result of an extensive and collaborative consultative process involving a wide range of stakeholders, led by the Government of Rwanda and supported by national and international partners.

The strategy was prepared by a consortium of AGRA, and under the leadership of a Steering Committee of the Ministry of Agriculture and Animal Resources (MINAGRI), the Ministry of ICT and Innovation (MINICT), the Rwanda Development Board (RDB), and the Office of the President (OTP).

The strategy received helpful inputs and ideas from the project High Level Advisory Group, African Century Group as a technical advisor, and many partners in the ecosystem. This commitment ensures the agenda is grounded in national priorities, including Vision 2050, the Second National Strategy for Transformation (NST2), the Fifth Strategic Plan for Agriculture Transformation (PSTA5), and complements delivery plans without duplicating current mandates.

We invite all stakeholders to engage with this document, noting that the strategy is intended to be an adaptable and evolving guide. It reflects the current state of Rwanda's the food innovation ecosystem and is subject to continuous review as the ecosystem evolves to ensure it remains relevant and responsive to shifts in socioeconomic conditions, national priorities, and available funding. As such, the strategy may be periodically updated to encompass new legislation, capitalize on emerging trends, and integrate initiatives that are aimed at catalysing finance, knowledge, and expertise to drive Rwanda's food innovation system.

As Rwanda begins this ten-year journey, we invite all stakeholders to sustain the spirit of collaboration required to deliver the strategy, and to help position Rwanda as 'Africa's leading proof-of-concept platform and destination for food systems innovation', where innovators can test, validate, adapt, and scale food innovations for Rwanda and the region.

EXECUTIVE SUMMARY

Rwanda's food system is central to its long-term economic agenda and represents one of the greatest opportunities for productive investment and export growth. But the system is not yet performing at the level Rwanda's vision requires, and the gap cannot be closed through gradual improvement alone.

This strategy responds to that and sets out a ten-year national framework (2026-2035) for catalysing capital, knowledge, and expertise to drive the food innovation ecosystem. The goal is to position Rwanda as Africa's leading proof-of-concept platform and destination for food systems innovation by 2035, while catalysing innovations that improve food security and nutrition, create dignified jobs, and support sustainability outcomes. It is grounded in national priorities under Vision 2050, the Second National Strategy for Transformation (NST2) and the fifth Strategic Plan for Agriculture Transformation (PSTA5), and shifts from fragmented sector-specific effort towards a deliberate, system-wide approach.

Rwanda has already made meaningful progress in building policy intent, institutional capacity, and dedicated innovation promotion activities. However, promising innovations often face delays and stall as they move across regulatory processes, testing and validation, early commercialisation finance, skills alignment, and market entry. The cause is mainly gaps in coordination, sequencing, and shared delivery pathways across the system. The strategy therefore focuses on building the missing "spine" that connects regulation, research, finance, skills, and delivery channels into one navigable pathway, and introduces a set of practical tools that make this pathway work in real time.

To deliver this, the strategy pursues three strategic objectives: strengthening the business environment, regulatory architecture, and institutional coordination; enabling private sector growth and entrepreneurship; and strengthening applied R&D and human capital. Delivery is concentrated on four priority innovation domains selected for their alignment with national nutrition needs, investment potential, and Rwanda's comparative advantage: Modern Production Technologies, Value Chain Strengthening, Protein Diversification, and Nutrition, Health, and Biotech Innovation.

Rather than creating new institutions, the strategy introduces practical instruments to make the end-to-end innovation pathway work: a Food Innovation Regulatory Sandbox providing a single, coordinated entry point for approvals; an Investment Accelerator (targeting established international companies, frontier scaleups, and growth-stage Rwandan SMEs); a Venture & SME Accelerator (targeting early-stage Rwandan startups from ideation through prototype to first commercial product and early-stage international ventures seeking to test, launch, and scale their solutions); an applied R&D translation toolkit to turn research into adoptable solutions; a structured financing ladder to close the missing middle for food innovators; and the Rwanda Food Innovation Partnership (RFIP) as a lean coordination body managing the programme portfolio and tracking results in line with delivery on the strategic vision and key performance indicators.

Total programme investment is structured around the three strategic objectives and is estimated at USD 41.5 million over ten years. RFIP will act as the coordinating entity, mobilising public and philanthropic capital in the early years while building towards greater financial sustainability. The total for the RFIP is estimated at 15.1 million over ten years.

The strategy is delivered across three phases: Foundation (2026-2027), Acceleration (2028-2030), and Maturity (2031-2035). The first two years are anchored by two flagships: a Food Innovation Regulatory Sandbox to pilot coordinated approval pathways, and an Innovation Investment Accelerator to support high-potential businesses ready to scale. Two other programmes will also be co-designed in the first two years and will advance as soon as resources are available: a Venture Accelerator to support enterprise growth and innovation in priority domains under the Strategy, and a Human Capital Accelerator to strengthen skills, applied research, and talent development across the ecosystem.

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ABBREVIATIONS

ACES	Africa Centre of Excellence for Sustainable Cooling and Cold-chain
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AMIS	Agricultural Market Information System
API	Application Programming Interface
BDF	Business Development Fund (Rwanda)- now integrated in the Development Bank of Rwanda (BRD)
BRD	Development Bank of Rwanda
CAPEX	Capital Expenditure
C4IR	Centre for the Fourth Industrial Revolution (Rwanda)
CMU	Carnegie Mellon University
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
ESC	Ecosystem Steering Council
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FDA	Rwanda Food and Drugs Authority
FDI	Foreign Direct Investment
FIH	Food Innovation Hub
FOBASI	Food Basket Sites (MINAGRI delivery sites)
GoR	Government of Rwanda
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
IP	Intellectual Property
ISO	International Organisation for Standardisation
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
KIC	Kigali Innovation City
KIFC	Kigali International Financial Centre
KOICA	Korea International Cooperation Agency
MICE	Meetings, Incentives, Conferences and Exhibitions
MINAGRI	Ministry of Agriculture and Animal Resources
MINICT	Ministry of ICT and Innovation
MINEDUC	Ministry of Education
MINICOM	Ministry of Trade and Industry
REMA	Rwanda Environment Management Authority
NAEB	National Agricultural Export Development Board (Rwanda)
NCST	National Council for Science and Technology
NIRDA	National Industrial Research and Development Agency
NRIF	National Research and Innovation Fund
NST2	National Strategy for Transformation 2
OPEX	Operating Expenditure
PSF	Private Sector Federation (Rwanda)
PSTA5	Strategic Plan for Agriculture Transformation 5
RAB	Rwanda Agriculture and Animal Resources Development Board
RDB	Rwanda Development Board
RICA	Rwanda Institute for Conservation Agriculture
RICA-gov	Rwanda Inspectorate, Competition and Consumer Protection Authority
RFIP	Rwanda Food Innovation Partnership
RSB	Rwanda Standards Board
SME	Small and Medium Enterprise(s)
SNS	Smart Nkunganire System
SSP	Sector Strategic Plan
TAC	Technical Advisory Committee
TVET	Technical and Vocational Education and Training
UN	United Nations
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organisation
UR	University of Rwanda
WFP	World Food Programme

1 INTRODUCTION

Rwanda is at an inflection point in the transformation of its food systems. The sector has made real progress over the past decade, but improvements in conventional agricultural inputs and practices alone will not deliver the scale of productivity, competitiveness, nutrition, and climate resilience required to sustain Rwanda's transition to middle income status by 2035 and high-income status by 2050. Agriculture continues to play a central role in the economy and in livelihoods, but the sector is now growing more slowly than the economy as a whole; for instance, agriculture grew at 7% in 2025 against overall GDP growth of 9.4% (NISR, 2025).

During the PSTA4 period (2018-2023), annual growth in food crop output slowed to 2%, compared with 4.5% over the two preceding decades (PSTA5). Critically, that growth was driven largely by expanding the area under cultivation rather than improving yields. With average landholdings of just 0.4 hectares and limited scope to expand further, that route is largely exhausted. Post-harvest losses compound the problem: Rwanda loses an estimated 13-14% of grain output at farm level, rising to around 40% across perishable value chains (MINAGRI, 2024). In terms of nutrition outcomes, 27% of children under five remain stunted (NISR, Demographic and Health Survey, 2025). These gaps require innovations in production, processing, and distribution that are proven, adapted to Rwandan conditions, and accessible at scale.

This challenge extends beyond Rwanda's borders. East Africa currently has no established food systems innovation hub. Agri-tech venture capital is concentrated in South Africa, Egypt, Algeria, and Nigeria, leaving the region underserved. Africa's agri-food market could reach USD 1 trillion by 2030 (World Bank, 2013), and Rwanda's current share is small. Rwanda's agile regulatory environment, track record of executing nationally coordinated programmes, and geographic position in one of the continent's fastest-growing food markets make it well placed to fill the gap and anchor regional innovation activity.

Throughout this strategy, **innovation** refers to transformative ecosystem innovation that creates deep, system-wide shifts across economic, social, and environmental dimensions, fundamentally changing how the food system functions and delivers impact. These are innovations that create measurable shifts in how Rwanda's food system performs, spanning productivity, affordability, nutrition quality, and competitiveness. This definition spans three distinct tiers, each with different policy, investment, and partnership implications:

- **Research & Origination:** Creating new innovations locally, whether homegrown or by attracting novel ideas to Rwanda. This will result in novel IP, prototypes, and proof-of-concept research.
- **Testing & Contextualisation:** Attracting innovators with existing IP seeking a conducive environment to pilot or adapt their solutions to Rwandan and East African conditions — analogous to what Zipline demonstrated in Rwanda for medical delivery.
- **Scale & Expansion:** Attracting established innovations, validated elsewhere, looking to expand into Africa using Rwanda as a gateway.

Each tier is relevant and this strategy prioritises interventions across all three in proportion to Rwanda's current ecosystem stage. For examples, tiers 2 and 3 would build credibility and demonstrate results, while tier 1 will support the development of a growing pipeline of home-grown innovations.

This strategy sets out a ten-year national framework (2026-2035) to build the ecosystem that moves food innovations reliably from development to market. It is grounded in national development priorities: Vision 2050, the Second National Strategy for Transformation (NST2), and the Fifth Strategic Plan for Agricultural Transformation (PSTA5) and shifts from fragmented sector-specific efforts towards a deliberate, system-wide approach. It defines the strategic direction, institutional arrangements, and implementation logic required to position Rwanda as **Africa's leading proof-of-concept platform and**

destination for food systems innovation by 2035, while catalysing innovations that improve food security and nutrition, create dignified jobs, and support sustainability outcomes.

This strategy was developed through stakeholder engagement with public and private actors, a structured analysis of Rwanda's food innovation landscape, benchmarking against comparable global ecosystems, and technical deep dives into priority domains for food innovations.

The scope of the strategy is to provide a national framework for systems-level actors to build Rwanda's food innovation ecosystem. The scope therefore is not technology transfer for routine agricultural development or non-innovation related activities. It complements the existing sectoral strategies of line ministries, including the Ministry of ICT and Innovation's Sector Strategic Plan (MINICT SSP) and PSTA5.

2 ECOSYSTEM OVERVIEW

This section assesses Rwanda's current food innovation landscape, what exists, where gaps are, and where practical opportunities lie, and the implication of those findings on the strategy. It then draws on selected global experience to identify what consistently drives results in high-performing food innovation ecosystems. The final part sets out the selected four priority domains where effort would lead to higher impact for Rwanda.

2.1 Rwanda Landscape Analysis

2.1.1 Productivity & Adoption

What exists

Agriculture is Rwanda's economic foundation. It accounts for approximately 25% of GDP and employs roughly 70% of the population (RDB, 2024) and is the primary livelihood of more than 2.2 million households, over 65% of all households in the country (AHS, 2024). The sector already has several delivery platforms that, while not necessarily innovations themselves, are critical enablers for innovation uptake and scaling. For example, the Customized Agriculture Extension System (CAES), which is part of Rwanda's public agricultural extension platform, provides field-level extension support across all districts and services as a last-mile channel for advisory support and technology diffusion through a mixed-approach method, including provisions for the involvement of the private sector; 13,379 Food Basket Sites (FoBaSi) cover 495,155 hectares have been identified to address critical land fragmentation challenges; the Smart Nkunganire System (SNS) has 1.5 million registered farmers; and more than 8,000 cooperatives provide an organised base for collective action. Moreover, the Rwanda Agriculture Board (RAB) has invested extensively in the development and piloting of improved crop varieties suited for Rwanda's diverse agri-ecological context.

For this strategy, these assets matter because they provide practical routes through which inputs, advisory tools, market information, and new business model can reach farmers at scale.

Where the gaps are

Agriculture grew by 5% in 2024 compared with overall GDP growth of 8.9%, and at 2% in Q1 2025 against 7.8% overall (NISR, 2024; NISR, 2025). The structural cause is the low adoption of proven technologies. According to the AHS 2024, Improved seed use stands at 37.3% in Season A and falls to just 18% in Seasons B and C, reflecting a seed system where 95% of the supply moves through informal channels. Irrigation also remains limited, with only 14.1% of agricultural households practicing it. For mechanisation, it is near-absent: 98.5% of agricultural land is tilled by hand, with fewer than 240 tractors in the country. Post-harvest losses consume 11-15% of grain output at farm level and up to 25% across the full value chain. In dairy, local breeds yield an average daily milk of 1.5 litres per cow per day against 20-30 litres for improved breeds, a gap that reflects accumulated under-investment in genetics, feed, and veterinary services.

The gap is not only technical. Of Rwanda's 8,000-plus cooperatives, only 32% of maize cooperatives had active buyer contracts in a recent assessment¹, meaning that even organised farmers often have no reliable route to sell. SNS registers 1.5 million farmers, but most engage with it only to get access to subsidies; its potential as an advisory and market platform is largely untapped. These are system failures as much as technology gaps, and the two reinforce each other: without reliable markets and advisory support, farmers have little reason to adopt better technologies even they are available. Table

¹ <https://www.atai-research.org/project/the-value-of-value-chains-an-experiment-linking-farmers-cooperatives-with-a-maize-processor-in-rwanda/>

1 illustrates the yield data to show the scale of what this combination costs Rwanda across crops and aquaculture.

Table 1: Illustrative yield gaps and improvement potential.

Product	Rwanda Current Yield	East Africa Best	Global Leaders	Improvement Gap (%)	Sources
MAIZE	2.0 t/ha	3.0 t/ha (Tanzania)	5.88 t/ha (Global average)	50-194%	NISR (2024), World Grain (2016), SSRN (2024)
RICE	4.1 t/ha	Limited data	6-8 t/ha	46-95%	NISR (2024)
BEANS	0.7 t/ha	1.34 t/ha (Tanzania)	2.67 t/ha (optimal)	89-277%	NISR (2024), Kilimo Kwanza (2024)
TILAPIA	1.5 t/ha/year	Limited data	3-3.5 t/ha/year	100-133%	FAO (2024)

What the opportunity is

Rwanda's production base presents two distinct categories of innovation opportunity:

1. **Already identified gaps:** this includes issues where problems are already identified and proven technologies exist but have not yet been adopted at scale, representing the opportunity for 'quick wins.'
2. **New problem discovery:** requiring extensive research and local adaptation before solutions can be deployed at scale. This will most likely require piloting.

Innovation stacking: International evidence demonstrates that bundling complementary technologies generates higher returns. A 2019 IFPRI study across Sub-Saharan Africa found that farmers adopting improved seeds alone achieved 23% yield gains; when combined with improved soil management, gains rose to 38%; when further combined with market linkages, income gains reached 55–70% above baseline. Stacked solution designs, where each technology removes a binding constraint that would otherwise cap returns from the others, are highly encouraged by this strategy.

2.1.2 Policy & Strategic Alignment

What exists

Rwanda's policy architecture sets a clear direction for food systems transformations. NST2 commits to "climate-resilient, productive, and modernised food systems", with a target annual agricultural growth rate exceeding 6% (NST2, p.13). PSTA5 translates this into sector priorities across productivity on priority food crops, animal resources, post-harvest management, and investment attraction for modernisation, with approximately 17% of the total five-year budget dedicated to innovation through research, technology transfer, and digitalisation. The government has committed to mobilising at least USD 3 billion in climate and nature finance, with significant allocations for climate-smart agriculture (NST2, p.23).

Rwanda's governance record gives this architecture real credibility. The country ranks first in Africa on the Corruption Perception Index (CPI) (2024) and first in the World Bank B-READY regulatory framework rankings (2024). These ranking signals to international companies and investors that Rwanda's regulatory commitments translate into predictable operating conditions, which is the foundation for positioning Rwanda as a regional testbed where innovations can be validated quickly and replicated across the east African region.

Several instruments extend this foundation directly into food innovation. The Rwanda Innovation Strategy (RIS) proposes a Rwanda Innovation Authority (RIA) with Innovation Brokers embedded within key ministries including MINAGRI. The National Research and Innovation Fund (NRIF) provide a co-financing mechanism for applied research and development, and the Rwanda Green Growth and Climate Resilience Strategy (RGGCRS) adds further alignment through the envisaged Cleaner Production and Climate Innovation Centre (CPCIC), relevant to agri-food processing, cold chains, and climate-resilient production.

Table 2 summarises Rwanda's comparative ecosystem readiness, showing the consistent pattern of strong governance and digital performance alongside relative gaps in research and development depth and venture capital. The *FIH Readiness Tier* is a composite assessment synthesising indicators across governance, innovation, and agriculture connectivity to indicate country's overall readiness to host or scale food innovation hub activities.

Table 2: Comparative ecosystem readiness snapshot.

Country	R&D % GDP*	Agri % GDP (2024)	Agri Employment % (2023)	LPI 2023	GII 2025 Rank	GDP per Capita (USD)	Mobile Connectivity Index	Corruption Perception Index	B-Ready Regulatory Framework	FIH Readiness Tier
Rwanda	0.6	24.6	55	2.8	104	999.7	52.2	43	70.35	Med-Low
Kenya	0.81	21.3	32	2.81 (2018)	102	2,206	56.8	121	-	High
Tanzania	0.51	23.4	65	2.99 (2016)	121	1,185	46.8	82	65	Med-Low
Uganda	0.31	24.7	66	2.58 (2018)	124	1,072	45.5	140	-	Low
Ethiopia	0.27 (2017)	35	62	2.38 (2016)	134	1,011	41.6	99	-	Low
South Africa	0.62 (2022)	3	19	3.38	61	6,253	71.7	82	-	High
Nigeria	0.28 (2019)	20.4	34	2.53	105	806.9	53.3	140	-	Medium
Ghana	0.38 (2010)	20.7	35	2.5	101	2,406	56.9	80	66.91	Med-High
Morocco	0.66 (2010)	10.1	30	2.54	57	3,993	65.3	99	68.92	High

Source: WDI (2023) R&D Expenditure (% of GDP) Agriculture % of GDP (2024), Employment in agriculture (% of total employment); WIPO 2025 GI; WDI, GDP Per Capita Current (2024); World Bank LPI (2023); Global Corruption Perception Index global rank; and GSMA intelligence/reports and operator filings – GSMA Mobile Connectivity Index.

Where the gaps are

While Rwanda governance indicators match or exceed middle-income economies and mobile connectivity is high, Table 2 shows the distance still to travel. Rwanda's GII rank of 104 trails Morocco at 57 and South Africa at 61, R&D spend at 0.6% of GDP is among the lowest in the comparison group, and a GDP per capita of USD 999 limits the domestic market pull that typically attracts private food innovation investment. Kenya and Ghana, both ranked higher on the GII with deeper venture capital activity, show what more deliberate ecosystem investment achieves at a comparable stage of development. Rwanda's comparative advantage is narrow and concentrated in governance and connectivity while the innovation infrastructure needed to attract and retain food technology investment remain underdeveloped.

The food safety and innovation regulatory system operates across three institutions with differing mandates. For instance, Rwanda Standards Board (RSB) sets national standards, testing protocols, certification, and accreditation; Rwanda Food and Drugs Authority (FDA) regulates processed foods and controls imports and exports; and Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA) handles agricultural input inspection, market compliance, and consumer protection

(RSB, FDA, RICA websites). No coordinated pathway exists across them. A company developing a fortified food product, a novel ingredient, or a new agricultural input must navigate each institution independently, with no clear timeline, no single point of contact, and no shared approval process. Stakeholder consultations also shared that this unpredictability, compounded by inconsistent standards enforcement and delays in administrative processes such as VAT refunds, is a direct deterrent to private sector investment in product upgrading.

In terms of biotechnology, Rwanda currently restricts the importation of genetically modified organisms, with legal updates targeted under PSTA5 for FY 2025/26, a prerequisite for innovation in several priority domains. IP generation remains low at approximately 0.9 patents per million people compared with a global average of 319 per million (GII, 2025), reflecting limited commercial R&D, weak incentives for product development, and low Intellectual Properties (IP) generation. Together these conditions reduce the returns to innovations investment and limit the range of technologies companies are willing to bring into the country.

The nutrition data shows what these gaps costs at population level. Food insecurity affects 17% of Rwandan households, 27% of children under five are stunted, and anaemia affects 37% of children aged 6 to 59 months and 13% of women of reproductive age (NISR, DHS 2025; WFP, 2025). Only 22% of children aged 6 to 23 months receive a minimum acceptable diet (NISR, DHS 2025). These outcomes are not primarily a production failure as Rwanda has achieved food calorie sufficiency. The persistent gap is in dietary quality, the availability and affordability of nutritious, diverse, and safe foods, which depends directly on private sector investment in fortification, processing, and value-added products. The Ministry of Health's National Food and Nutrition Policy and MIGEPROF's National Family and Nutrition Policy (2024) both identify the first 1,000 days as the critical window for intervention, with stunting largely irreversible beyond this point. Rwanda's national target is to bring stunting below 15% by 2029 (WFP CSP, 2026-2029). Reaching it requires the food system to deliver more nutritious and affordable products at scale, which in turn requires companies to invest in developing them, and companies will not do that without a predictable regulatory environment.

Food safety is both a public health imperative and an innovation driver for change. PSTA5 notes that Rwanda's predominantly informal food systems "generally lack proper post-harvest handling," raising concerns about safety and nutrition (PSTA5). Preventable food-related diseases remain a leading cause of morbidity and child mortality, with aflatoxins of particular concern in maize, groundnuts, chilli, cassava, and dairy products (PSTA5). Inconsistent standards enforcement, where quality differentiation is not reliably recognised, limits incentives for investment in fortification, food safety, and higher-value processing.

What the opportunity is

A more predictable, risk-based, and coordinated regulatory environment would directly reduce the compliance uncertainty that currently deters innovation entry and investment. Stronger laboratory capacity, clearer traceability systems, and defined rules for private sector engagement would reinforce Rwanda's proof-of-concept positioning. Where quality differentiation is reliably recognised and enforced, companies have a direct incentive to invest in fortification, improved processing, and higher-value product development. A regulatory sandbox, providing a defined, time-bound, cross-agency approval pathway could be a practical near-term instrument to demonstrate that Rwanda can deliver on this promise.

2.1.3 Human Capital

What exists

Rwanda has a set of institutions that together cover the core capabilities food innovation depends on applied research, technical training, digital skills, and on-farm testing. The University of Rwanda's (UR)

College of Agriculture, Animal Science and Veterinary Medicine trains graduates in agronomy, food science, and data science, while its African Centre of Excellence for Sustainable Cooling and Cold-Chain (ACES) conducts applied work on cold chain and post-harvest management, two of the most critical bottlenecks in Rwanda's food value chain. Rwanda Institute for Conservation Agriculture (RICA) combines hands-on agripreneur training with ISO/IEC 17025-accredited laboratories, giving it both the human capital and the testing infrastructure that food innovators need to validate products against international standards. Carnegie Mellon University Africa (CMU-Africa) adds advanced digital and AI capabilities that are directly relevant to precision agriculture, traceability systems, and digital market. Rwanda Polytechnic (IPRS) produce technicians for food-processing, mechanical, and electrical operations, the operational layer without which processing equipment, cold chains, and irrigation systems cannot function at scale. Rwanda Agriculture and Animal Resources Development Board's (RAB) 13 research stations distributed across agroecological zones provides field infrastructure for on-farm trials and technology demonstrations, reducing the time and cost of validating innovations under real production conditions.

Two further features strengthen the case for Rwanda as a food innovation testing environment. Labour market efficiency ranked 8th globally (Global Competitiveness Index, 2017-18) means that once trained, skilled workers can be deployed quickly, an important consideration for companies evaluating Rwanda as a proof-of-concept location. Youth aged 16 to 30 represent 30.7% of farmers (AHS, 2024), making them the primary adoption pathway for new technologies, and reported digital literacy at around 75% (GIZ Digital Transformation) gives that cohort the baseline needed to engage with digital agriculture tools and platforms. These assets define the talent base and adoption pipeline that the strategy's innovation programmes will work through.

Where the gap is

Despite this base, human capital remains a binding challenge, with four gaps standing out:

1. **Education mismatch within agricultural households.** 61.7% of agricultural household members have primary education, 23.9% secondary, and only 1.9% university education (Agriculture Household Survey, 2024). While the base workforce is literate, it is underprepared for technical and compliance tasks, limiting the ability to support food processing operations, equipment calibration, or data handling at scale.
2. **Digital operations gap.** Reported digital literacy is high at around 75% (GIZ Digital Transformation), suggesting a foundation on which to build. However, operational digital engagement remains low: only 17% of registered users actively engage with the digitised input subsidy system (Agriculture Household Survey, 2024). Infrastructure investment alone has not translated into effective platform use.
3. **TVET-industry misalignment.** Technical and vocational training is not aligned with industry skill needs, with missing competencies in mechanical, electrical, irrigation, and utilities. The consequence shows directly in adoption data: mechanisation is near zero at 0.1%, and irrigation adoption stands at 14.1% (Agriculture Household Survey, 2024). Without job-ready technical talent, the ability to maintain and operate processing equipment and cold chains is severely constrained.
4. **Limited R&D and technical depth.** Rwanda has only 133 researchers per million people, ranks 83rd in human capital and 106th in knowledge output globally, and its STEM competitiveness is ranked 113 out of 137 economies (GII, 2025). Closing the gap with regional peers would require two to three times more STEM graduates. The challenge is weak applied R&D and limited capacity to translate research into market outcomes. Additionally, this strategy will enable intentional academia linkages, supporting students with access to proper infrastructure

for innovation, laboratories, incubation rooms, and prototyping facilities, and structured IP ownership pathways.

What the opportunity is

Closing the human capital gap in the near term requires deliberate effort to bring targeted expertise into Rwanda's institutions through partnerships, secondments, and talent mobility programmes, rather than waiting for domestic training pipelines to catch up. Rwanda has a history of structuring exactly these kinds of arrangements in other sectors, using external expertise as a catalyst to build domestic capability rather than as a substitute for it. The food innovation ecosystem needs the same approach applied here. The institutions mapped above are real and operational. Connecting them to global food science networks, applied R&D expertise, and commercial knowledge through structured partnerships and embedded placements is the fastest way to raise their capacity to levels the strategy requires.

2.1.4 Applied Research & Development

What exists

Rwanda has credible applied R&D institutions that form a practical foundation for food innovation. The African Centre of Excellence for Sustainable Cooling and Cold-Chain (ACES) at the University of Rwanda conducts applied work on cold chain, food safety, and post-harvest management. RAB maintains research stations across agroecological zones, providing the geographic spread needed to test and validate innovation under diverse production conditions. The National Industrial Research and Development Agency (NIRDA) provides technology upgrading support and shared laboratory facilities for food processors, giving small and medium enterprises (SMEs) access to infrastructure they could not sustain independently. Each institution is active in areas the strategy prioritises and represents a real asset the ecosystem can build on.

Table 3 places this base in comparative perspective, measuring Rwanda against benchmark food innovation ecosystems across key applied research and development dimensions, and Rwanda's policy foundations and digital infrastructure hold up well against comparators.

Table 3: Applied R&D readiness against ecosystems benchmark

Dimension	Rwanda Current / Proxy Data	Benchmark / Successful Hub Level	Gap & Implication for Readiness
Innovation Ecosystem Strength	Ranked 104 th (GII 2025); ~52 startups; ~USD 15M ecosystem funding (StartupBlink 2025).	Top 30-50 GII rank; 500-2,000 startups; >USD 500M funding annually.	Early-stage ecosystem needs stronger startup pipeline and global visibility.
Policy / Strategy Anchors	Strong High-Level Sentiment (NST2, PSTA5, STI 2024, Kigali Innovation City). Lacking at the applied policy level	Mature ecosystems (NL, SG, DE) had embedded R&I frameworks and long-term PPP programs.	Solid foundation; needs operational policy mechanisms and dedicated funding streams.
Private Sector & Startup Capacity	~130 agritech SMEs; <10% access risk capital; 2 local VC funds active.	Hundreds of agrifood startups; strong VC/corporate networks.	Scale startup pipeline; attract corporate anchors and blended VC finance.
Research Capacity & Infrastructure	R&D = 0.6% GDP; ~1,100 ag researchers (ASTI 2023); led by RAB, UR, NIRDA.	2-3% GDP R&D spend; strong universities & applied research institutes.	Low applied research intensity; need translational R&D labs and PPPs.
Production / Agricultural Base	Agriculture = 24% GDP, 61% jobs; yields 30-40% below regional frontier.	High-yield clusters and mechanized systems (e.g., NL Greenports).	Prioritise productivity, quality, and mechanization in ecosystem design.

Market / Consumption & Export Orientation	13M domestic; regional market (EAC 300M, AfCFTA 1.3B).	Large export/affluent domestic markets (EU, ASEAN).	Position the ecosystem as a regional testbed and export accelerator.
Financial / Investment Ecosystem	Limited local VC base; ~USD 15M startup funding; KIFC emerging.	>USD 500M-USD 1B venture & PPP funds in mature ecosystems.	Build blended finance, matching grants, and de-risking mechanisms.
Digital / Enabling Infrastructure	High mobile penetration; digital agriculture adoption is rising.	Advanced data platforms and digital innovation layers.	Strong potential; need for national data infrastructure integration.

Where the gaps are

Table 3 also show where research and development trail, R&D spend at 0.6% of GDP, a startup pipeline of around 52 ventures, limited venture capital, and low private sector engagement in innovation, point directly to where the strategy's applied R&D instruments need to focus. The four gaps below explain why Rwanda's R&D institutions, despite their individual capability, have not yet generated a consistent pipeline of commercially adopted food innovations.

- **Technology transfer capacity** is emerging within Rwanda's higher education system, primarily at UR, but remains limited in scope. Few institutions have dedicated units for commercialising research, supporting Intellectual Property (IP) registration, or structuring licensing arrangements, meaning research outputs stay in academic settings rather than reaching firms.
- **Laboratory and quality infrastructure are under pressure.** Public testing institutions are overstretched, and private sector participation in expanding lab capacity remains limited. This creates a bottleneck for the testing, certification, and standards compliance that innovations must pass through before reaching the market.
- **Industry absorption is weak.** Even where research outputs exist, firm-level capability to absorb them is constrained by limited technical skills and the investment adoption requires in compliance systems, trained operators, and equipment. With around 88% of enterprises operating informally (IBES, 2023), most firms cannot participate in formal research partnerships or access financing programmes designed for registered entities.
- **The grant financing mechanism also lacks the pipeline to deploy.** The National Research and Innovation Fund (NRIF) exist as a financing mechanism, but disbursements are lagging. Only around 9% of agribusiness sector firms engage in innovation (World Bank Enterprise Survey, 2019, cited in NIRDA Strategic Plan, 2023 – 2028), meaning the pipeline of proposals that competitive grant instruments can fund is thin. Innovation vouchers, small, flexible instruments that allow firms to purchase R&D services from suppliers, could lower the barrier to entry, and broaden participation, but no such instrument is currently operational in Rwanda's food sector.

What the opportunity is

Rwanda's applied R&D institutions already cover the core functions a food innovation ecosystem need: field testing, laboratory infrastructure, technology upgrading, and agricultural research across production zones. The opportunity is to convert these from parallel, under-connected assets into a coordinated translation pipeline that moves innovations from research into commercial application at speed and scale. Where that pipeline functions, private sector firms gain reliable access to testing, certification, and applied knowledge without bearing the full cost individually, and research institutions generate outputs that reach markets rather than remaining in academic settings.

2.1.5 Finance & Investment

Rwanda has mobilised substantial financing commitments to the agri-food sector, spanning equity, grants, recoverable grants, and loans across different stages and sub-sectors. The scale of commitment is significant. However, the gap between what has been committed and what is actually reaching food innovators is the more relevant measure for this strategy. Table 4 captures that gap directly, showing total commitments against actual annual disbursements for both agri-food and for innovation.

Table 4: Summary of financing commitments and disbursements (Various, AFR Agriculture finance yearbook)

Agri-food		Innovation	
Total committed	USD 1.6B	Funds available	USD 90M
Annual disbursement	USD 180M/year	Funds disbursed	<USD 8M/year
Overall annual disbursement rate	9-14%	Funds disbursement gap	91%

The disbursement figures are the more telling numbers. Against USD 1.6 billion committed to agri-food, only USD 180 million reaches the sector annually. On the innovation side, less than USD 8 million of the USD 90 million available is disbursed each year, a gap of 91%. Capital is both scarce and poorly deployed, and the two problems reinforce each other. Three financing vehicles are most relevant to food innovation. Table 5 compares how each one works in practice.

Table 5: Comparative overview of key financing vehicles supporting food innovation.

Criteria	Rwanda (RIF)	Innovation Fund	Ireme Invest	BRD Agricultural Portfolio
1. Fund Establishment Year	2018 (first disbursement 2021)		2022 (first disbursement 2024)	1967 (BRD); 2022 (CDAT program)
2. First Disbursement	2021		2024	1974 onwards (BRD); 2022 (CDAT agri-facility operational)
3. Sub-sector Focus	Tech-enabled SMEs (not agri-specific)		Climate-smart agriculture, clean energy, smart mobility, sustainable cities, waste & circular economy	All agriculture value chains: production, postharvest, livestock
4. Type of Funding	Equity		Grants, recoverable grants, equity, concessional loans	Loans (short, medium, long-term)
5. Ticket Size	USD 250,000 – USD 2,000,000		Grants: up to 125M RWF (USD 100K) Recoverable grants/equity: up to 300M RWF (USD 240K) Loans: Varies	Maximum 540M RWF
6. Entity Stage Focus	Growth-stage (seed to B-round); revenue USD 50K-USD 5M annually		All stages: early, growth, mature	No stage limitation (farmers to MSMEs)
7. Funding Terms	5-7-year hold; equity exit via acquisition/IPO		Grants: Non-repayable Recoverable grants: Repayable terms TBD Loans: Concessional rates	13% interest; 6mo grace; 1-7-year tenor

This gap reflects structural constraints in how finance is packaged, assessed, and deployed, including:

- A gap in ticket sizes, with limited finance available between small grants and larger investment rounds.
- A limited pipeline of investment-ready agri-tech ventures, linked to weak business capacity and support systems.
- Conservative banking approaches and due diligence processes that are not well aligned with the operating realities of early-stage firms.

- Short time horizons and expectations of rapid results, which reduce willingness to fund innovation and scale-up that require longer runways.

The economy remains informal; an estimated 88% of enterprises operate informally (IBES, 2023), directly constraining access to formal finance. Informal firms often lack the documentation, collateral, and financial histories needed to meet standard lending and investment requirements, and most are not positioned to absorb financial products designed for formal SMEs. Table 6 shows that formalisation is recent and shallow, and the structure of registered firms is overwhelmingly micro- sized and low in capitalisation.

Table 6: Formalisation and firm structure indicators (Rwanda, Establishment Census 2023).

Indicator	Value
Registered businesses started after 2018	80%
Businesses starting after 2021	54%
Establishments in Agriculture, Forestry and Fishing	0.3%
Workforce in registered establishments (approx.)	2.5% (~23k employees)
Establishments that are micro (≤3 employees)	92%
Establishments with capital < USD 238	59%
Establishments with capital > USD 780k (RWF 1B)	0.1%

The three financing vehicles are not yet functioning as a coherent ladder. The RIF is a venture-style equity vehicle oriented toward growth-stage firms; its contribution to food innovation depends on whether it consistently prioritises commercially viable, technology-enabled food innovation. Ireme Invest provides a pathway for climate-smart investments but is broader than innovation and commercialisation, and its impact depends on operational readiness. BRD is the most established agricultural finance channel but is primarily designed around traditional lending and is not tailored to early-stage or higher-risk innovation ventures.

Rwanda's food innovation space is constrained by both the amount of funding available and how it is deployed. The priority is to strengthen the delivery architecture, align existing instruments into a predictable pathway from early-stage grant to growth equity to commercial debt, and increase the proportion of committed capital that reaches beneficiaries through transparent, timely, and fit-for-purpose mechanisms, rather than focusing only on raising additional commitments.

2.1.6 Entrepreneurship & Innovation

What exists

Rwanda has an active early-stage entrepreneurship support landscape. Based on ecosystem reports and publicly available programme information, approximately USD 1.5 million has been verifiably deployed through entrepreneurship support initiatives over 2020-2025, with a further USD 3-5 million in announced or pipeline funding. Programmes have supported an estimated 40-50 ventures, and around 7-10 accelerators are operational or announced.² Delivery actors with demonstrated operational capacity include Impact Hub Kigali and the Rwanda Green Fund's AgriTech4Rwanda programme. Spaces such as kLab and Norrsken House provide infrastructure, mentoring, and convening, though they do not on their own provide sustained growth finance. The Hanga Agritech Challenge signals growing momentum, especially if announced resources translate into predictable deployment (which is not currently the case).

² Sources: Impact Hub Kigali, Rwanda Green Fund, NCST, Tech in Africa (2024-2025)

Where the gaps are

The innovation engine remains commercially shallow, reflecting systemic constraints in progressing pilots or proof of concept projects to higher Technology Readiness Levels (TRLs) and commercial deployment. Only around 9% of food and agriculture businesses engage in innovation, and Rwanda's patenting rate stands at approximately 0.9 per million people compared with a global average of roughly 319 per million (GII, 2025), signalling limited commercial R&D, weak incentives for product development, and low IP generation. These headline indicators reflect a system that produces early-stage activity but does not yet consistently convert it into commercially viable, scalable outcomes.

The ecosystem remains heavily grant-driven and donor-shaped, which unintentionally encourages businesses to optimise for grant cycles rather than commercial sustainability. Three structural patterns emerge from stakeholder consultations, consistent with wider evidence on early-stage ecosystem constraints in sub-Saharan Africa. First, blended, and patient finance remains limited, including equity suited to the longer time horizons of food ventures. Second, grant programme requirements are at times misaligned with business needs, with reporting milestones outweighing commercial traction and product-market fit. Third, accelerator support is typically delivered in short windows, three to six months, which supports early validation but frequently ends before ventures are investment-ready or able to secure follow-on finance. These conditions produce two recurring outcomes: entrepreneurs focus on securing the next grant rather than building for long term; and pathways to follow-on support remain unclear, leading repeated cycles of grant-hopping without commercial progress.

What the opportunity is

Rwanda's early-stage entrepreneurship infrastructure, the actors, the programmes, and the demonstrated willingness of both public and private players to invest in food innovation, provides a base the strategy can build on rather than replace. There is an opportunity for the strategy to enable from short-cycle grant support that ends before ventures are commercially viable, to sustained pathways that take entrepreneurs from early validation through to market. Rwanda's positioning as a regional proof-of-concept destination, already recognised in other sectors, gives food innovation ventures a credible case to make to investors looking for a testing ground with a clear route to the broader East African market.

2.1.7 Actors In the Ecosystem

The preceding sections have mapped Rwanda's food innovation landscape across productivity, policy, human capital, applied R&D, finance, and entrepreneurship. A consistent finding runs throughout the landscape analysis: Rwanda has credible institutional assets, but no institution is currently mandated or resourced to perform **three catalytic functions** that would make them work as a system: (1) mobilise financing specifically for food innovation, (2) generate and share actionable market and technology intelligence, and (3) actively broker the specialised expertise that connects research, firms, and investors around shared priorities. Each institution fulfils a defined role within Rwanda's governance architecture. And what the analysis reveals is that these three catalytic functions, essential to a functioning food innovation ecosystem, are not currently mandated, resourced, or assigned to any existing institution. A detailed mapping of the principal actors and each institution's mandate and the specific functions that fall outside is provided in Annex 7.

2.2 Global Landscape Analysis

This section draws on lessons from comparable ecosystems to examine what consistently drives food innovation at scale and what Rwanda can apply given its current position.

2.2.1 Comparative Insights: What Makes Global Food Innovation Ecosystems Work

International experience shows that food innovation ecosystems succeed when they function as long-term institutions, with three structural conditions that consistently distinguish high performers from those that plateau after early activity.

1. **Governance:** Effective ecosystems are anchored in coordinated public and private governance. Successful ecosystems institutionalise decision-making through clear mandates, defined roles across institutions, and a governance model that aligns policy priorities with private sector demand and delivery capacity. This reduces fragmentation, supports policy stability over time, and enables the ecosystem to act as a trusted coordination platform across government, research, industry, and investors.
2. **Research and Development:** Applied R&D drives scale when it is industry-linked and designed for translation into practice. Leading ecosystems are characterised by problem-driven applied R&D, shared facilities for piloting and testing, and practical technology transfer mechanisms. Where applied R&D is not connected to firm demand, standards, testing, and adoption pathways, innovation remains upstream and does not generate productivity gains, new enterprises, or export competitiveness.
3. **Financing:** Financing must be sustained, blended, and matched to innovation time horizons. Successful ecosystems combine public resources, private sector contributions, and catalytic capital in ways that support continuity beyond donor cycles and provide predictable pathways from early-stage development to scale. Where funding is short-term or fragmented, ecosystems become grant-driven and struggle to build investment-ready pipelines.

A further consistent insight is that ecosystems generate impact when they maintain strategic focus. Concentrating on a defined set of thematic areas or value chains improves coordination, strengthens the business case for shared infrastructure, and enables measurable outcomes.

2.2.2 Evidence and Takeaways

Table 7 illustrates how these three conditions play out across seven food innovation ecosystems spanning Europe, Asia, and Africa. Across all cases, the governance model, financing structure, and R&D approach differ in form but converge on the same underlying logic: coordinated institutions, sustained investment, and industry-linked research. Rwanda shares some of the foundational characteristics visible in these cases, strong government commitment, a clear national vision, and an emerging digital infrastructure. Where Rwanda sits at an earlier stage, on R&D intensity, private sector depth, and financing maturity, the cases show that this is not unusual for a country at this point in ecosystem development. What distinguishes the high performers is not that they started with more resources, but that they built coordinated institutional systems early and maintained strategic focus over time.

Table 7: Three main pillars of every global ecosystem

Innovation Ecosystem	Key Players in R&D	Governance Model	Financing Model	Overall Model & Features	Impact on Innovation Ecosystem	Impact on Economy / Jobs / Productivity
Foodvalley NL	WUR, Foodvalley NL, DSM-Firmenich, Unilever, Rabobank,	Multi-stakeholder public-private partnership	Public funding, corporate fees, and EU innovation grants	Hybrid: Wageningen campus + virtual platform; includes labs, venture	>400 agrifood startups; €650-750M raised; >3,000 jobs; 450+ firms mapped in	Strengthened NL's global innovation leadership; strong SME

	Ministry of LNV, Topsector AgriFood			accelerator (StartLife)	Protein Transition NL	scaling and export intensity
Greenports – Netherlands	Greenport West-Holland, Venlo, Boskoop, Aalsmeer; growers; municipalities; WUR	Triple-helix regional cluster	Regional/provincial funding, cluster fees, EU/TKI projects	Physical regional clusters with living labs, testbeds, logistics hubs, applied R&D centers	High-tech greenhouse cluster; leading edge in horticultural automation and climate-smart growing	>60,000 jobs; €9B+ exports; top productivity per m ² globally
Top Sectors & TKIs – Netherlands	Topsector Agri & Food, TKI Horticulture, Ministry of EZK, industry	National PPP framework for R&D coordination	Public-private co-financing (50/50)	Virtual/policy-based platform coordinating government, academia, and private R&D	Dozens of PPP R&D projects annually; €500M+ leveraged	Boosted R&D productivity and competitiveness
Seed Valley – Netherlands	30+ seed and breeding firms, vocational institutions	Private cluster association	Industry-financed, minor public co-funding	Physical cluster: concentrated R&D, shared infrastructure, talent pipeline programs	Global leader in vegetable seed breeding; 3,500 employees; exports to 80+ countries	€1.5B+ annual revenues; ~50% of global vegetable seed trade
Food Campus Berlin (Germany)	Private hub led by Artprojekt with partnerships from universities and local authorities.	Private innovation campus with public partners	Private real estate, tenant leases, partnerships	Physical campus model with co-working labs, pilot plants, digital membership platform	40,000 m ² campus; >30 startups; pilot kitchens, labs, events	Positioned Berlin as Germany's foodtech hub; >1,000 innovators
Food Innovation Hub – Singapore (FTIC)	Temasek, A*STAR, EDB, Innovate360, Big Idea Ventures, MNCs	Public-private innovation platform	Sovereign + public R&D + VC investment	Hybrid: physical pilot and R&D centre integrated with digital accelerator and investor networks	Anchor for alt-protein, fermentation; 40+ startups incubated	Accelerates Asia's alternative protein industry; supports SG's 30x30 goal
Food Innovation Hub – Kenya	Ministry of Agriculture, WEF, AGRA, FtMA, WFP Innovation Hub	Public-private coordination platform	Donor and catalytic funds (WEF, Gates, DFID)	Hybrid: national virtual coordination + distributed county pilots; planned physical secretariat	Agriculture data system; soil/yield pilots; traceability tools	Expected to benefit 1M+ smallholders; job creation in agri-SMEs

Cases such as Foodvalley NL, Topsector Agri and Food, and Singapore's Food Technology Innovation Centre show that innovation accelerates where public and private actors co-invest, research is aligned to industry demand, and strategic specialisation builds globally competitive niches. Singapore is particularly relevant: its governance system was built not around a dominant primary production base but as a national orchestration mechanism aligning regulation, finance, talent development, research, and global market access, a model directly applicable to Rwanda's context. A Netherlands delegation visit in November 2025 reinforced the same lesson: the Dutch system succeeds because of deliberate institutional design, the alignment of government, industry, academia, and civil society toward

targeted goals, not because of exceptional individual innovations. All four of Rwanda's priority domains have Dutch analogues, with digital transformation and applied research as the cross-cutting enablers.

The central implication for Rwanda is that innovation ecosystems do not require physical production clusters or advanced industrial bases to function. They require a governance architecture that consistently orchestrates actors across ministries, research institutions, financial systems, and private firms around shared priorities.

2.3 Implications for Rwanda's Ecosystem Design and Strategy

Rwanda has genuine assets, strong governance, policy commitment, digital infrastructure, a proof-of-concept track record, and institutional nodes across research, training, and extension. What it does not yet have is the coordinated system that connects these assets into a reliable pathway from innovation to market. Table 8 summarises Rwanda's current position against benchmarks associated with more mature ecosystems.

Table 8: Rwanda Implication Statement.

Dimension	Rwanda – Current / Proxy Data	Benchmark / Successful ecosystem Level	Gap & Implication for Readiness
Innovation Ecosystem Strength	Ranked 104 th (GII 2025); ~52 startups; ~USD 15M ecosystem funding (StartupBlink 2025).	Top 30-50 GI rank; 500-2,000 startups; >USD 500M funding annually.	Early-stage ecosystem; needs stronger startup pipeline and global visibility.
Policy / Strategy Anchors	Strong High-Level Sentiment (NST2, PSTA5, STI 2024, Kigali Innovation City). Lacking at the applied policy level	Mature ecosystem (NL, SG, DE) had embedded R&I frameworks and long-term PPP programs.	Solid foundation; needs operational policy mechanisms and dedicated funding streams.
Private Sector & Startup Capacity	~130 agritech SMEs; <10% access risk capital; 2 local VC funds active.	Hundreds of agrifood startups; strong VC/corporate networks .	Scale startup pipeline; attract corporate anchors and blended VC finance.
Research Capacity & Infrastructure	R&D = 0.6% GDP; ~1,100 ag researchers (ASTI 2023); led by RAB, UR, NIRDA.	2-3% GDP R&D spend ; strong universities & applied research institutes.	Low applied research intensity; need translational R&D labs and PPPs.
Production / Agricultural Base	Agriculture = 24% GDP, 61% jobs; yields 30-40% below regional frontier.	High-yield clusters and mechanized systems (e.g., NL Greenports).	Prioritise productivity, quality, and mechanization in ecosystem design.
Market / Consumption & Export Orientation	13M domestic; regional market (EAC 300M, AfCFTA 1.3B).	Large export/affluent domestic markets (EU, ASEAN).	Position ecosystem as regional testbed and export accelerator.
Financial / Investment Ecosystem	Limited local VC base; ~USD 15M startup funding; KIFC emerging.	>USD 500M-USD 1B venture & PPP funds in mature ecosystems.	Build blended finance, matching grants, de-risking mechanisms.
Digital / Enabling Infrastructure	High mobile penetration; digital agriculture adoption rising.	Advanced data platforms and digital innovation layers.	Strong potential; need national data infrastructure integration.

Rwanda's competitive position rests on a combination few other African countries can match. It performs well on governance and digital readiness, but trails on R&D investment, startup pipeline depth, venture capital, and private sector engagement in innovation. These gaps are the specific entry points for this strategy. Table 9 maps these against their direct relevance to food innovation and explains why Rwanda is a credible starting point for the system this strategy builds.

Table 9: Summary – What Makes Rwanda Unique: A Comparative Analysis.

Dimension	Rwanda's Position	Why It Matters for Food Innovation
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Governance and rule of law	Top 3 in Africa (World Bank B-Ready, GII, WGI)	International companies require a predictable regulatory and legal environment; Rwanda offers this at a fraction of OECD market cost
Technology infrastructure	High mobile connectivity, digital payments, drone regulation.	Enables rapid deployment and testing of digital agri-tech and precision agriculture tools
Proof-of-concept track record	Known PoC country: drone delivery (Zipline), digital ID, mobile money	Companies already understand the 'test in Rwanda, scale across Africa' model; food tech is the next frontier
National political commitment	Vision 2050, NST2, PSTA5 all explicitly call for food innovation	Government as credible partner; policies already in place; not starting from scratch
Geographic and ecological variety	Range of agro-ecological zones within small country	Can test multiple production systems, highland horticulture, lowland rice, arid east, within a manageable geographic scope
Regional gateway	EAC, AfCFTA.	Innovations validated in Rwanda have a natural pathway to 200M+ people; not just a small market play
Existing institutional anchors	UR, RICA, CMU Africa, RAB, ACES	Ready-to-use research and testing capacity; international partnerships already in place

2.3.1 Implications For the Strategy

The landscape and benchmarking analysis point to five functions that Rwanda's food innovation ecosystem currently lacks and that the strategy must put in place. These are coordination, regulatory, research translation, and financing functions that need to be mandated, resourced, and connected to what already exists.

- 1. Shared governance and coordination to reduce fragmentation:** Rwanda has strong institutions but no mechanism that consistently aligns them around food innovation priorities. The strategy requires a neutral body with a clear mandate to convene government, research, finance, and private sector actors, set shared priorities, track progress, and resolve bottlenecks. Without this, the other three functions cannot be sustained.
- 2. Regulatory pathways that are consistently operationalised:** Rwanda's governance reputation is one of its strongest assets for attracting food innovation investment. But that reputation only holds if the approval process for new products is navigable in practice. A single, time-bound, cross-agency pathway for innovations that fall outside existing categories is the most direct way to make Rwanda's regulatory credibility real for food innovators.
- 3. Applied R&D connected to commercial use:** Rwanda's research institutions have real capability, but the missing link is the mechanism that takes research outputs and moves them through firm-level adoption into commercial application. This requires technology transfer functions, shared testing facilities accessible to small firms, and grant instruments that introduce private sector demand into the research prioritisation process.
- 4. Financing calibrated to innovation timelines:** Capital is committed but is not reaching food innovators at the right stage or in the right form. Existing instruments need to be sequenced into a coherent ladder from early-stage grants to growth equity, with disbursement processes and eligibility criteria designed for how food innovation businesses actually operate.
- 5. Focus and specialisation through priority domains:** Focus and specialisation through priority domains: to avoid spreading scarce resources too thinly, Rwanda's ecosystem concentrates on four priority domains that address the most binding constraints and the largest economic and nutritional opportunities.

These five functions define what the strategy must deliver to move Rwanda's food innovation ecosystem from a collection of unconnected assets to a system that reliably produces results. Rwanda's governance foundations, institutional base, and regional positioning are genuine comparative advantages. Activating them for food innovation requires deliberate design, not incremental adjustment.

2.4 Strategic focus: Food Innovation Priority Domains

The four priority domains were identified through a structured process combining Rwanda landscape evidence, global benchmarking, stakeholder consultation, and deeper technical assessment. Two evidence signals anchored the selection: where global food innovation investment is concentrating, and where Rwanda's food system and nutritional needs create the most compelling case for action.

2.4.1 How Priority Domains Were Selected

To ensure focus and avoid spreading resources too thinly, the four priority domains were selected through a structured assessment using four criteria:

- 1 **Innovation:** The innovative character of the topic in the context of global developments. More innovative is not always better: very long-term developments are inherently higher risk (*Qualitative expert assessment*).
- 2 **Nutrition:** The potential of the topic to address nutritional needs, considering both macro- and micro-nutrient needs. It is important to consider what the cost-competitive alternative is when assessing this topic (*Data-based: nutrition gaps priorities*).
- 3 **Advantage:** The degree to which the topic is aligned with strategic advantages present in Rwanda, including an estimate of whether there is still potential to claim a global position in the domain (*Qualitative based on stakeholder interviews*).
- 4 **Investment:** An estimate of how easy it is to attract capital for this topic, with a particular focus on the private sector. Where public or philanthropic funding is available and growing, this is added as a consideration (*Data-based: global investment figures*).

2.4.2 The Four Selected Priority Domains

Based on national priorities, evidence signals, and feasibility for Rwanda's context, four priority domains are recommended. Global agri-food technology investment is concentrating in upstream and midstream categories where technologies improve production, processing, and value chain efficiency, areas that align directly with Rwanda's structural constraints and competitive positioning.

Rwanda's nutrition evidence reinforces this focus: the most acute gaps in dietary quality point to protein, dairy, biofortified staples, and fortified processed foods, all of which sit within or adjacent to the four domains. Together, the investment signals and nutrition priorities define where Rwanda can generate the fastest returns and build the most credible regional position.

Domain 1: Modern Production Technologies (MPT)

Modern production systems support national productivity, resilience, and climate goals by improving on-farm performance and enabling more efficient use of water, energy, and inputs. The ecosystem could prioritise adapting proven technologies and deploying them through scalable service and business models that work for Rwanda's farm structures and agro-ecological zones. However, progress will depend on strengthening enabling conditions that can reduce cost and complexity for farmers. The ambition is for Rwanda to become a lighthouse country for pioneering in production technologies (Figure 1).

Focus on:

- Precision production systems for high-growth value chains, including fit-for-context controlled-environment agriculture.
- Precision agriculture technologies including Sensor-Driven Irrigation, Fertilization (green fertilizers), Biostimulants & Resource Optimization
- High-Tech Agricultural Services (including AI services)
- Food-Water-Energy Nexus Technologies
- Regenerative and climate-smart agriculture technologies, practices, and business models that improve soil health, water use, and resilience while maintaining or improving productivity.
- Soil health and land preparation technologies, including mechanised and precision tillage solutions, soil diagnostics, and input optimisation tools that reduce the time and labour burden of land preparation for smallholder farmers.
- Improved seeds and variety development, including high-yielding and climate-resilient seed systems.

Rwanda's network of RAB research stations across agroecological zones and RICA's quality and standards facilities provide a direct foundation for this domain. These existing assets reduce the lead time for testing, validation, and demonstration at field level.

Domain 2: Strengthen the Middle of the Value Chains

Strengthening the Middle of the Value Chains is prioritised because productivity gains at farm level will not translate into incomes, nutrition, or competitiveness unless food can be stored, preserved, processed, and moved to markets efficiently. The domain focuses on strengthening the "middle" of the value chain, the activities and services between the farm and the fork. Scaling midstream solutions requires stronger technical and managerial capabilities along value chains, as well as clear standards and quality assurance pathways. The ambition is to build short-loop value chains to make Rwanda first in the world to zero food loss by 2035.

Focus on:

- Strengthen the Value Chain: Storage, Cold Chain & Close-to-farm low-cost innovations in storage (food preservation infrastructure) and processing (prioritising low-energy consumption options)
- Sustainable packaging innovation, including bio-based and compostable packaging solutions aligned with Rwanda's ban on single-use plastics
- Digital Market Infrastructure, Traceability & Logistics Platforms
- SME-Oriented Automation & Value Addition Technologies
- Circular economy models using side-streams and waste-streams to reduce waste and improve efficiency across the value chain.

The goal is to transform how food is produced, processed, and moved through scalable, energy-efficient, and market-linked systems, improving productivity, reducing losses, and increasing the number of smallholders and SMEs connected to formal markets.

Domain 3: Protein Diversification

Protein diversification supports nutrition goals while strengthening food system resilience and reducing dependence on imported food and feed inputs. This domain prioritises near-to mid-term protein innovations that can reach the market and achieve cost competitiveness within the next five years, while building the regulatory and capability foundations for more advanced pathways. Given strong global investor interest, fermentative and alternative protein approaches are promising where feasible, but they require deliberate regulatory readiness and targeted knowledge investment. The

ambition is to develop a resilient portfolio of protein sources from plant, animal, and microbial sources that meets the country's nutritional needs.

Focus on:

- Feed-first strategy for animal and aquaculture value chains (circular feed inputs, fermentation-enabled feed, insect-based feed).
- Scalable production pathways through biomass fermentation and precision fermentation.

Given the nutrition priorities identified above, proteins become a practical entry point for innovation because they link directly to dietary quality, affordability, and scalable production pathways (Figure 2).

Focusing the protein landscape requires prioritising pathways that can improve nutrition and achieve scale within Rwanda's current infrastructure constraints. Given Rwanda's acute protein deficit, feed efficiency, fermentation, and protein crop systems offer the most practical near-term entry points.

The goal for this domain is to transform what proteins are produced and supplied in Rwanda — improving the nutritional quality and affordability of protein through scalable systems that can serve both domestic markets and regional export pathways.

Domain 4. Nutrition, Health, and Biotech Innovation

Biofortification delivers high public-value impact on micronutrient deficiencies through staple foods and widely consumed products. This domain focuses on building the enabling environment required to rapidly adopt and scale proven biofortification approaches, working with established regional and global initiatives and using co-financing where possible. This Domain can generate measurable improvements in micronutrient intake and offers a practical pathway for Rwanda to lead on implementation and scale, including through opportunities for SMEs and micro-entrepreneurs, especially women- and youth-led businesses. However, it is less “frontier” than other innovation areas and is typically harder to finance purely through large private capital, which means public and philanthropic partnership and strong delivery coordination are essential. The ambition is to implement a comprehensive biofortification strategy that results in measurable progress towards reducing micronutrient deficiencies.

Focus on:

- Reaching price parity and building seed distribution for biofortified varieties
- Address mid-chain bottlenecks and resistance to (bio)fortification.
- Creating market pull: micro-entrepreneurship, school feeding programs, etc.
- Nutritious food product development, including commercialisation of new foods derived from African indigenous crops.

2.4.3 Deep Dives: Two Priority Domains

The Government of Rwanda selected two domains for detailed deep dives: (1) Modern Production Technologies (MPT) and (2) Protein Diversification, chosen for strong investment momentum, clear national need, and feasibility within 3 to 5 years (with the MPT deep dive also integrating “Strengthening the Middle of the Value Chains”, recognising that production gains depend on storage, cold chain, processing, and logistics). Each deep dive set out the investment case and market need, mapped global and regional actors, and defined an implementation roadmap including national building blocks, policy and regulatory needs, and key risks and mitigation.

Modern Production Technologies (MPT)

Rwanda's MPT agenda addresses a structural imperative: agriculture contributes approximately 25% of GDP and employs over half the population, yet less than 15% of arable land is irrigated, post-harvest

losses run at 25-40% by value, and mechanisation coverage remains below 5%. The yield gap across maize, beans, rice, and aquaculture represent forgone income and nutrition at national scale.

The investment case is strong as global capital flows into MPT-aligned categories reached USD 4.1 billion in 2024, with midstream technologies alone attracting USD 1.7 billion. Rwanda's domestic fundamentals reinforce the opportunity: a food-processing sector projected at USD 340 million, cold chain investment needs estimated at USD 230 million, and fast-growing value chains in dairy (8.2% CAGR), poultry, and horticulture that create immediate demand for precision tools, sensing systems, and digital service platforms. Rwanda's predictable investment climate, strong incentives, and positioning as an innovation-friendly piloting environment further strengthen the case for MPT as a high-growth, high-impact domain capable of enabling Rwanda to leapfrog into more competitive, technology-enabled production and midstream systems.

Rwanda's MPT concentrates on seven priorities: precision production systems for high-growth value chains; sensor-driven irrigation, fertilization, and resource optimization; high-tech agricultural services delivered through SMEs; food-water-energy nexus technologies; smart midstream infrastructure including storage, cold chain, and short-loop processing; digital market infrastructure and traceability platforms; and SME-oriented automation and value addition, phased into the 2030-2035 period. These priorities are sequenced to deliver near-term gains in resilience and loss reduction while building the enabling environment for deeper technology adoption in later phases. Global and regional leaders, including companies already engaged in East Africa alongside established international technology providers in sensing, biologicals, precision agriculture, and modular processing, offer a combination of proven technologies and contextualised business models that Rwanda can draw on and adapt.

Rwanda's MPT work is grounded in its delivery architecture: RAB's network of research stations active across agroecological zones, NIRDA's technology upgrading capacity and the potential of the Academia to deploy knowledge transfer and human capital development. The coordination function connects these nodes to private sector demand, applied research priorities, and investment mobilisation.

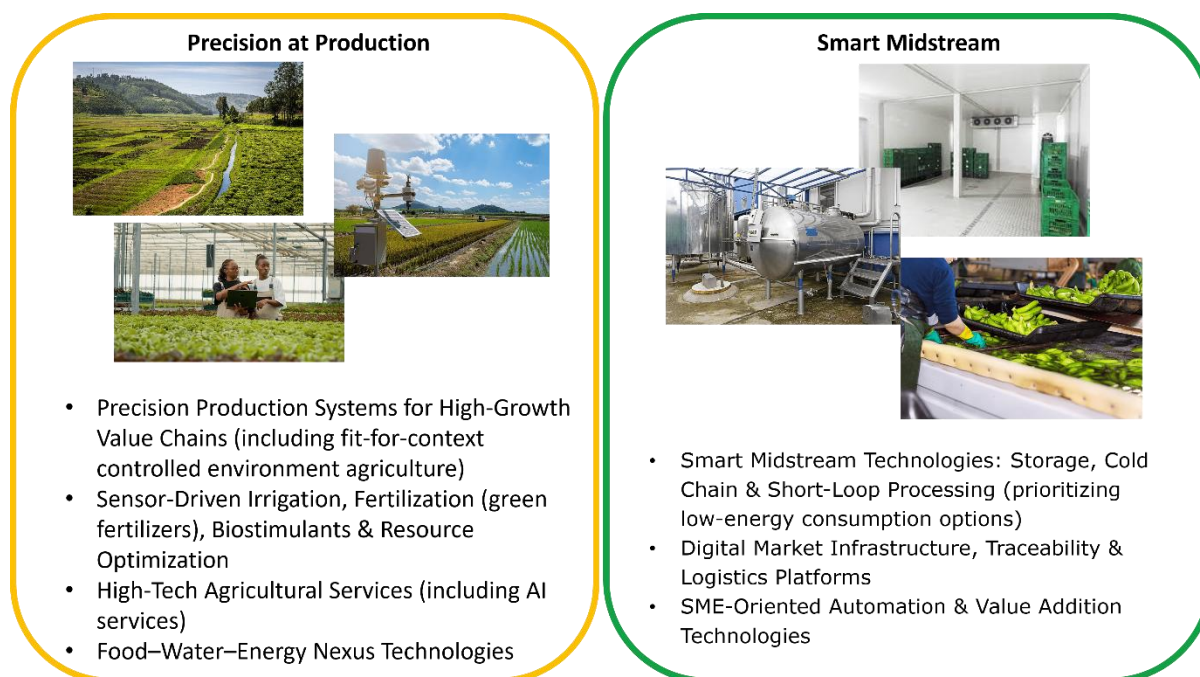


Figure 1: Modern Production & Smart Midstream Technologies innovation ecosystem.

Protein Diversification

Rwanda faces one of the most acute protein gaps globally: at just 6 kg of meat per capita per year and 0.3 kg of eggs, consumption sits well below low-income country averages, while micronutrient deficiencies in calcium, vitamin B12, iron, and zinc point directly to insufficient availability of animal-sourced foods. At the same time, increasing the number of animals without a deliberate feed strategy risk intensifying food-feed competition for scarce plant biomass, an outcome that the ecosystem should be designed to avoid. The protein innovation deep dive is therefore structured around a feed-first principle: prioritising efficient animal-sourced proteins and developing a diversified portfolio of circular, fermentative, and plant-based feed and food solutions that expand supply without creating new pressures on existing food systems.

The investment case for protein innovation is growing rapidly. Global investment in alternative proteins reached USD 1.4 billion in 2024, with fermentation attracting USD 651 million and plant-based USD 309 million. Africa attracted just USD 1 million in innovative food investment in the same period, representing a structural gap and a clear first-mover opportunity. Global innovators in precision fermentation, cultivated-plant hybrid proteins, insect meal, and plant-based processing are actively seeking production locations with supportive regulatory environments, access to agricultural streams, and lower operating costs: a profile Rwanda is well-positioned to meet.

Rwanda's protein roadmap is organised around four priorities. (1) A feed-first strategy to improve the productivity of high-conversion animal-sourced foods, eggs, dairy, and aquaculture, through circular feed models that valorise post-industrial and post-retail residues, complemented by new feed sources including insect meal, fermentative biomass, and microalgae. (2) Cellular agriculture: in the near term, attracting global companies in precision fermentation and cultivated-plant hybrid proteins to Rwanda as an innovation-friendly African gateway; in the longer term, building the ecosystem of strain providers, co-manufacturers, and service companies needed to sustain a regional hub. (3) Plant-based innovation, where consumer research already demonstrates strong demand for affordable, meaty-textured alternatives at competitive price points, a category suited to home-grown entrepreneurship and near-term commercialization. (4) Bioeconomy extension, recognising that plant-based and fermentation platforms open adjacent opportunities in biomaterials and packaging, complemented by the national single-use plastics ban, which creates a domestic pull for sustainable alternatives.



Figure 2: Protein in focus – protein innovation ecosystem.

The Modern Production Technologies (MPT) and Protein Diversification analyses address Rwanda's dual imperative: to modernise how food is produced and moved, through precision production and efficient value chain infrastructure; and to transform what proteins are produced and consumed, through feed efficiency, fermentation, and protein diversification. Both are grounded in existing Rwandan assets and aligned with global investment trends. Both can deliver measurable results within a five-year horizon.

3 STRATEGIC FRAMEWORK

3.1 Introduction

Rwanda's Food Innovation Ecosystem Strategy (2026-2035) sets out a framework for catalysing Rwanda's innovation that accelerates food systems transformation. It provides a practical framework for improving the enabling environment for food innovation, strengthening investments and entrepreneurship, and linking research and skills to real value-chain needs. The Strategy is designed to turn innovation, starting with the innovation domains identified, into measurable outcomes while positioning Rwanda as a credible testbed for solutions that can scale across the region.

3.2 Vision

A vibrant ecosystem where research, innovation, and entrepreneurship collaborate to transform Rwanda's food systems and those of the region.

3.3 Strategic Goal and Impact

The strategic goal is for Rwanda to be **"Africa's leading destination for food systems innovation by 2035,"** catalysing innovations that improve food security and nutrition, create dignified jobs, and advance sustainability across Rwanda and Africa more broadly.

3.4 Objectives and Sub-objectives

The section below provides details on each of the objectives, cascaded into 14 sub-objectives (interventions) that will be used to realise the strategic goal.

3.4.1 Objective 1: Strengthen Business Environment, Regulatory Architecture, and Institutional Coordination.

This objective creates enabling conditions for food innovation to emerge, be tested safely, and reach the market. It focuses on regulatory modernization, coordination, and digital public infrastructure.

- **Sub-objective 1.1: Agile, Innovation-Friendly Regulation** - Establish a Food Innovation Regulatory Sandbox* with clear, risk-based approval pathways for novel agri-food-tech products and services, with a defined regulatory front door, published service level agreements, and enhanced processing capacity. Phase 1 Priority activates Q4 2026, unblocks all private sector pipelines.
- **Sub-objective 1.2: Streamlined Registration and Certification** - Digitise the entire product registration and certification process for agri-food inputs and products, enhancing efficiency and transparency. This includes expanding the capacity of national testing laboratories to meet international standards. Phase 1 Parallel – begins Q4 2026 alongside Sandbox design.
- **Sub-objective 1.3: Policy Operationalization and Coordination** - Focus on translating existing national innovation policies related to agriculture, trade, environment, and innovation into actionable frameworks and ministerial instructions with legal basis. This involves improving cross-institutional coordination and collaboration to ensure effective implementation and avoid bottlenecks. For example, it should embed environmental and climate considerations into the food innovation policy environment by leveraging the Rwanda Environment Management Authority (REMA) regulatory frameworks, standards, and expertise in environmental management, climate resilience, and impact assessment to inform the design of regulations across all domains. Phase 1 Parallel begins with ESC constitution, Mar-Apr 2026.
- **Sub-objective 1.4: Regional Harmonization and Market Access** - Lead initiatives for the alignment of agri-food standards with regional bodies such as the East African Community (EAC), Common

Market for Eastern and Southern Africa (COMESA), and the African Continental Free Trade Area (AfCFTA). Establish clear mutual recognition frameworks and partnerships with other countries to adopt/enable some regulations and novel food products already approved. Phase 1 Parallel begins once Sandbox concept note published, Q4 2026.

- **Sub-objective 1.5: Agri-food Digital Public Infrastructure** - Develop and deploy digital infrastructure tailored for the agri-food sector. This includes platforms for data sharing, market information, supply chain management, and digital payments to enhance efficiency, transparency, and innovation across the value chain. It includes leveraging data across Ministries and agencies, such as the Rwanda Space Agency's space-based data. Phase 1 Parallel baseline data plan confirmed in Phase 1 and full platform activates Phase 2.

*"A regulatory sandbox is a virtual concept, a testing ground set up and administered by a regulatory authority, whereby participants can apply to test their innovative products and services in a controlled environment for a defined purpose and a predefined amount of time." (African Development Bank)

3.4.2 Strategic Objective 2: Enable Private Sector Growth and Entrepreneurship.

This objective addresses the market failures that limit food entrepreneurship: weak deal flow, limited early-stage finance, and fragmented support. It operates through two tracks: Track A attracts international companies with the innovations, resources, and capacity to test and scale in Rwanda. Track B builds home-grown entrepreneurs and small and medium enterprises (SMEs) that are driving food innovation and looking to grow. Both tracks are demand-constrained. Track A requires Rwanda to proactively position itself internationally. Track B requires the ecosystem to graduate beyond short-window accelerator programmes into sustained venture-building and follow-on finance.

- **Sub-objective 2.1: Investment Readiness and Deal Flow** - Organise investor roadshows and pitching events to recruit innovative companies and institutions to Rwanda and connect promising agri-food ventures with potential investors. The focus will be on companies and institutions across the continent and globe that have innovations, capacity, and resources, but they are looking for a conducive environment to test and refine their innovation in an African context. The aim is to attract these companies, enable their investment and work most efficiently within Rwanda's ecosystem and sandbox, and support their pathways to scaling both domestically and regionally. Standardise due diligence processes and position Rwanda as a strategic proof-of-concept destination to attract international and domestic agri-food tech investments. Phase 1 Priority (Track A) activates Q4 2026; outreach to 20-30 international companies.
- **Sub-objective 2.2: Venture Studio, Incubation and Acceleration** - Launch a dedicated venture studio to help start-ups and new companies grow faster than they would otherwise in Rwanda's market. Co-create ventures from scratch where there are a clear market gap and need in the ecosystem. Conduct flagship innovation challenges regional participation to focus on key sub-sectors and challenges. Implement specialised programs including IP clinics for protecting innovations, corporate pilots to test solutions, and farmer cooperative engagement initiatives to integrate producers. Focus on comprehensive support from idea validation to prototype development. Phase 1 Priority (Track B) activates Q4 2026; first innovation challenge and venture studio cohort launched
- **Sub-objective 2.3: Early Commercialization Finance** – Establish partnerships with existing commercial and development finance institutions and investment funds (e.g., Ireme Invest, RSSB, BRD) to design tailored, stage-specific financing instruments that accelerate early-stage startups from ideation to commercialization. Ensure access to diverse financial instruments (mixing equity,

low-cost debt, and grant funds) adapted to the needs of the sector. Phase 1 Parallel, fund design begins Phase 1; first disbursements target Phase 2.

- **Sub-objective 2.4: Strengthen Entrepreneurship Support Institutions:** - Professionalize existing incubators and accelerators through capacity building, training programs, and resource sharing. Establish the emerging Youth Innovation Intelligence & Delivery System (YIIDS) to convert policy ambition into disciplined delivery by structuring youth innovation into clear pipelines, automating coordination functions, and providing real-time intelligence for government, investors, and ecosystem partners. Develop robust mentorship networks and facilitate peer learning opportunities to foster conducive entrepreneurial ecosystem. Phase 1 Parallel, capacity building begins Phase 1; YIIDS operational Phase 2.

3.4.3 Strategic Objective 3: Strengthen Applied R&D and Human Capital

The third strategic objective will connect research, skills, and infrastructure to market outcomes. It reflects the capital-intensive and long-term nature of applied R&D and human capital development.

- **Sub-objective 3.1: Translate Research to Market** - Strengthen Technology Transfer Offices (TTOs) at the University of Rwanda (UR), Rwanda Institute for Conservation Agriculture (RICA), and Carnegie Mellon University (CMU), and other research institutions. Structure applied research partnerships with leading global institutions and bring in proven innovations to position Rwanda as their preferred testing hub, accelerating access to frontier expertise in the early phase. Deploy Public-Private Partnership (PPP) R&D grants and innovation vouchers to facilitate the translation of research into viable market solutions. Phase 1 Parallel 3+ international research partnerships targeted by the end of the first year.
- **Sub-objective 3.2: Strengthen Human Capital** - Implement triple-track training programs through a TVET Centre of Excellence and other institutions such as RICA, Africa Food Fellowship, Africa School of Governance, etc., focusing on developing specialised scientific, technical, digital, managerial, entrepreneurial and investment talent for the agri-food sector. Phase 1 Parallel short-term secondments and 150 trained in Phase 1; full TVET reform deferred to Phase 2.
- **Sub-Objective 3.3: Build Future Talent Pipeline** - Establish comprehensive programs including internships, startup attachments, and innovation challenges to engage young talent. Mobilise diaspora experts to contribute knowledge and mentorship, ensuring a continuous flow of skilled individuals into the food innovation ecosystem. Use short-term rotations, visiting experts, and embedded placements to bring global talent directly into the ecosystem during the buildup phase. Phase 1 Parallel internships and attachments begin Phase 1 alongside pilot programmes.
- **Sub-objective 3.4: Improve R&D Infrastructure** - Upgrade existing laboratory facilities and establish new shared infrastructure to support innovative agri-food research and development, testing/pilots, trials, and collaboration. Establish an integrated national food R&D and innovation network that links universities, research centres, testing facilities, and private labs. Ensure access to modern equipment and resources for both public and private sector innovators. Phase 1 Parallel pilot facility accesses confirmed Q1 2027; full infrastructure network Phase 2.
- **Sub-objective 3.5: Strengthen IP Ecosystem** - Enhance the intellectual property (IP) ecosystem through awareness campaigns for the 2024 IP law and by implementing commercialization incentives. Facilitate IP protection and commercialization pathways to encourage innovation and attract investment. Phase 1 Parallel IP awareness begins Phase 1 alongside Sandbox; commercialization pathways active Phase 2.

3.4.4 Mainstreaming Cross-cutting Priorities

Smallholder Farmers

Smallholder farmers and cooperatives are both the primary beneficiaries and the primary test environment for this strategy. Where adoption does not happen at farm and cooperative level, innovation does not deliver results.

Across strategic objective 1, select Food Basket Sites (FoBaSi) can serve as controlled testing environments for the regulatory sandbox, enabling innovators and regulators to validate technologies and standards under real field conditions rather than laboratory settings. This directly connects the regulatory pathway to the production reality of Rwanda's smallholder base.

Across strategic objectives 2, the venture studio defines priority problem statements with farmer cooperatives and translate them into innovation challenges, keeping the pipeline demand-led from the outset. MINAGRI's extension architecture and FoBaSi network provide the market linkage channel through which local entrepreneurs can pilot and distribute products. International companies entering are also expected to demonstrate a pathway to smallholder relevance as part of their engagement with the ecosystem.

Across strategic objectives 3, human capital and R&D investments are anchored in institutions, including the RAB research stations and RICA, which work directly with farmers and cooperatives. Applied research outputs and trained technicians feed back into the extension system rather than remaining in academic or urban settings.

Lastly, across all four priority domains, smallholder adoption is built into the selection logic. Modern production technologies, value chain strengthening, protein diversification, and nutrition and biofortification innovations are all prioritised partly on the basis of their potential to reach and benefit smallholder farmers and rural households at scale.

Climate, Inclusion, & Responsible Innovation

Across all initiatives, design and selection criteria will ensure that technologies and services are accessible and affordable, promote sustainable resource use, and track participation and benefits for women and youth. Climate resilience and environmental sustainability are mainstreamed across programme design, not treated as a separate workstream. Risk management and safeguards are embedded in innovation support and regulatory processes to ensure safety, quality, and public trust as innovative solutions reach the market.

3.5 Innovation Domains and Focus Areas

The strategy concentrates scarce resources through priority innovation domains to avoid spreading effort too thinly and to make results measurable. It identifies four priority innovation domains and five cross-cutting enablers that determine whether innovations can scale.

1. **Modern Production Technologies** focuses on innovations that raise on-farm productivity and resilience, and that can be deployed through Rwanda's production and extension architecture with clear evidence requirements and adoption pathways.
2. **Strengthening the Middle of the Value Chain** focuses on innovations that reduce post-harvest losses, improve quality and consistency, and raise the competitiveness of processing and logistics so that production gains translate into income, exports, and job growth.
3. **Protein Diversification** focuses on expanding affordable, safe, and commercially viable protein options, and on building the enabling capabilities, standards, and market pathways required for new protein categories.

4. **Nutrition, Health, and Biotech Innovation** focus on innovations that improve dietary quality and safety, including advanced ingredients and biotechnology-enabled solutions, with strong safeguards and clear routes from validation to market.

Across these domains, the strategy treats five cross-cutting enablers as necessary conditions for scale: digital infrastructure; sustainable financing and private capital mobilisation; international partnerships; communication and branding; and monitoring and evaluation. Governance and coordination provide the backbone that keeps decision rights clear, timelines predictable, and performance visible.

Error! Reference source not found. The image below summarises the strategic framework underpinning this strategy, from vision and goal through to pillars, innovation domains, and enabling conditions.

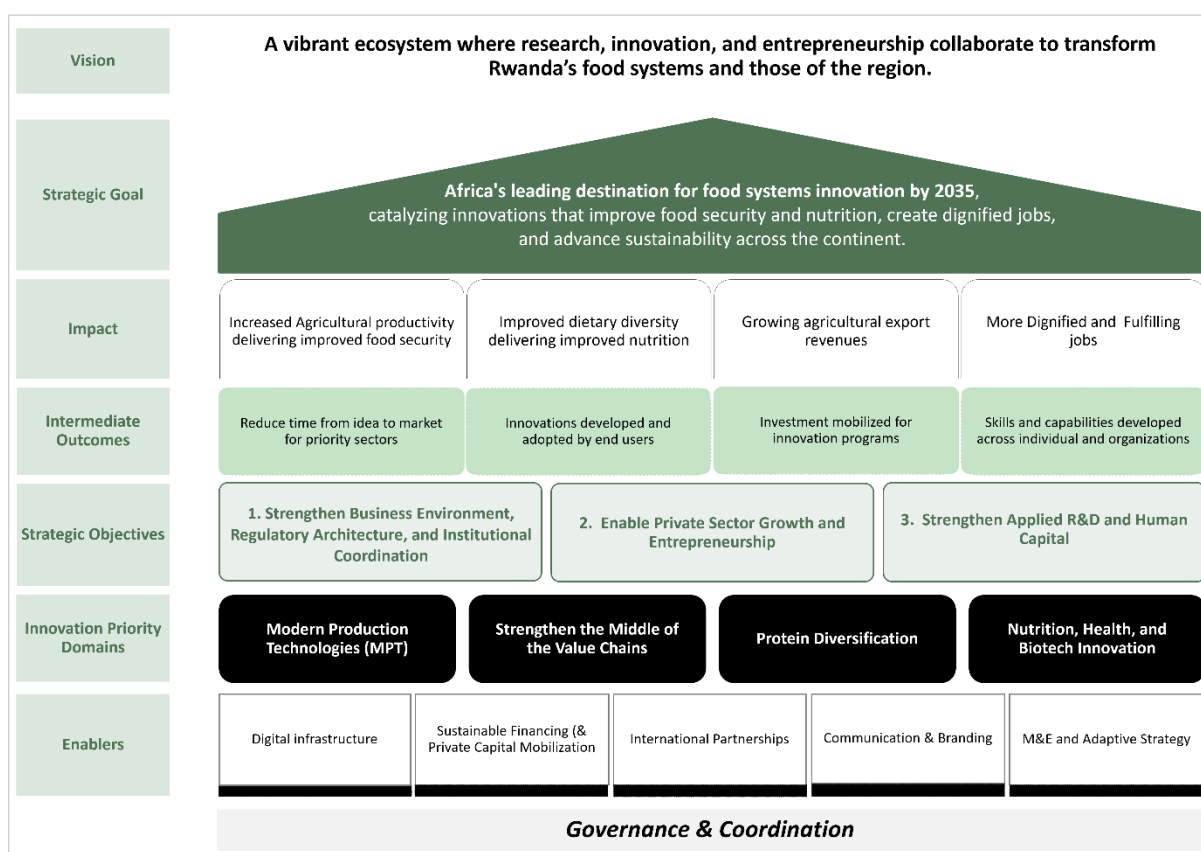


Figure 3: Strategic Framework House

3.6 Flagship Programmes

To translate the Strategy into action, implementation will be organised through four programmes aligned with the three strategic objectives and the priority innovation domains. These programmes provide the main vehicles through which the strategy will be delivered and through which partners and resources can be aligned. Four programmes identified to translate the strategy into action are:

1. **Food Innovation Policy Accelerator:** To strengthen Rwanda's policy, regulatory, and institutional environment for food innovation.
2. **Innovation Investment Accelerator:** To mobilise private sector investment and innovation in Rwanda's food innovation ecosystem.
3. **Venture Acceleration:** To support enterprise growth and innovation in priority domains under the Strategy.

4. **Human Capital Acceleration:** To strengthen skills, applied research, and talent development across the ecosystem.

3.6.1 Flagship Projects

In the initial phase, delivery will be anchored by the first two programmes, the Innovation Policy Accelerator and the Innovation Investment Accelerator, which together provide the primary execution mechanisms for the strategy first two years by combining regulatory certainty with an active pipeline of firms and entrepreneurs.

The first two programmes will be advanced through two early delivery projects: **Food Innovation Regulatory Sandbox** and **Food Innovation Investment Accelerator**.

Project 1: Food Innovation Regulatory Sandbox

The Regulatory Sandbox will provide a clear and time-bound pathway for testing food innovations that do not fit well within existing regulatory processes. At present, companies working on novel products and technologies can face uncertainty over which rules apply, how long approvals will take, and what evidence is required.

This uncertainty increases risk, delays investment, and discourages innovation. The Sandbox is intended to address this gap by creating a structured process through which eligible innovations can be reviewed, tested, and monitored under defined conditions. It will help Rwanda handle new technologies in a way that is both safe and predictable. In doing so, it will support innovation while maintaining strong public standards for food safety and regulatory oversight.

For companies working with novel products or production methods that sit outside existing regulatory categories, the sandbox provides a clear route to engage with regulators, generate evidence, and move toward approval. As it processes applications, it will also build Rwanda's own regulatory capacity and confidence in handling emerging food technologies.

In the early phase, the Sandbox is Rwanda's clearest signal to innovators and investors that regulatory commitments translate into predictable practice. Detailed design and implementation arrangements are set out in Annex 4.

Project 2: Food Innovation Investment Accelerator:

Rwanda currently has no single mechanism that combines investment promotion, regulatory support, financing linkages, and institutional coordination for food innovation. Promising opportunities remain fragmented. The Investment Accelerator addresses this by providing a coordinated offer that moves both international companies and Rwandan entrepreneurs from early interest into real investment and commercial activity.

The Accelerator is designed to address this gap through a more coordinated offer. For international companies, it will help position Rwanda as an attractive place to test, validate, and scale food innovations in an African market context. For Rwandan entrepreneurs and SMEs, it will help improve access to early support, regulatory guidance, market linkages, and financing pathways needed to move from promising ideas to commercial products.

Regulatory clarity alone does not generate investment. Companies and entrepreneurs also need practical support to navigate institutions, connect with partners, access testing facilities, and prepare for market entry. The Accelerator works alongside the Regulatory Sandbox to reduce these transaction costs.

Together with the Regulatory Sandbox, the Investment Accelerator is one of the two priority implementation projects for the first two years. It builds the pipeline of firms, strengthens Rwanda's

visibility as a food innovation destination, and supports early commercialisation. Detailed design and implementation arrangements are set out in Annex 4.

Project 3: Venture Acceleration

The Venture Acceleration programme will support enterprise growth and innovation in priority domains under the Strategy. It will launch a dedicated venture studio to help start-ups and new companies grow, co-create ventures where there is a clear market gap, and strengthen entrepreneurship support institutions through capacity building, mentorship networks, and the Youth Innovation Intelligence and Delivery System (YIIDS). Additionally, it will partner with existing commercial and development finance institutions (e.g., Ireme Invest, RSSB, BRD) to design tailored, stage-specific financing instruments that accelerate early-stage startups from ideation to commercialization.

Project 4: Human Capital Acceleration

The Human Capital Acceleration programme will strengthen skills, applied research, and talent development across the ecosystem. It will implement triple-track training programmes through a TVET Centre of Excellence and partner institutions, strengthen Technology Transfer Offices at UR, RICA, and CMU, deploy PPP R&D grants and innovation vouchers, and build a future talent pipeline through internships, diaspora engagement, and embedded global placements.

For the last two projects, the **Venture Acceleration** and the **Human Capital Acceleration** programmes will be co-created with partners and funders to strengthen the strategy's support for firm growth, entrepreneurial pipeline development, and the skills and capabilities required to sustain innovation across the ecosystem.

3.7 Institutional Structure Framework for Execution

3.7.1 Partners Ecosystem

Partners

Delivery depends on a sequenced partnership ecosystem that strengthens Rwanda's existing actors and selectively crowds in high-additionality regional and global partners. Partnership engagement is designed to accelerate early delivery while keeping coordination manageable, particularly during the first 24 months when credibility, pipeline formation, and initial results are most important. Partnership roles are structured around three complementary contributions:

- **Anchor partners** provide specialised technical capability and credibility, including applied research collaboration, access to facilities, and technical assistance that strengthens translational R&D and testing capability.
- **Acceleration partners** strengthen venture formation and investment readiness by supporting pipeline development, entrepreneurship support, and mobilisation of catalytic and risk capital aligned to priority domains.
- **Scaling partners** enable adoption and commercialisation by connecting innovations to value chains, standards and quality systems, procurement routes, and market channels.

Partner engagement will be prioritised based on strategic alignment with national priorities and this Strategy; additionality; resource contribution; feasibility and speed of activation; human capital value; and network value for regional and international connectivity.

Engagement will be phased to reduce complexity while delivering early wins:

- **Wave 1 (Months 0-6):** capability foundations and pipeline formation.
- **Wave 2 (Months 6-12):** Domain-specific partners to deepen implementation capacity.

- **Wave 3 (Months 12-18):** market access and regional integration partners to support scaling and export pathways.

Table 10 provides an illustrative, non-exhaustive mapping of existing ecosystem actors and potential priority partners to crowd in. It is intended to guide early engagement planning, while preserving flexibility to adapt as the ecosystem matures and new opportunities emerge.

Table 10: Illustrative Partner Structure (non-exhaustive)

	Existing Actors	Potential Priority Actors to Crowd In
Corporate and Industry Partners	Griffith Foods, Inyange, Kerry Group, Oath Africa, PSF, local corporates, SMEs, cooperatives	GreenLight BioSciences, OCP, PepsiCo, Tetra Pak, UPL, Yara (top 1-2 per priority sub-sector), ISO-accredited advanced labs.
Startups and Innovators	Impact Hub Kigali, Norrsken, ESOs	Delta40, MStudio
Public Sector Institutions	MINAGRI/RAB/RDB, MINICT, NIRDA, OTP, RSB, FDA, C4IR, KIC, KIFC.	Rwanda (MINECOFIN, MINEDUC, MINICOM, MINILOC, MOE/REMA, MOYA, Rwanda Green Fund)
Academia and Research Institutions	ACES, CGIAR System, CMU-Africa, TVET CoE, RICA, University of Rwanda.	African School of Governance, CGIAR System, CMU, Embrapa, MBZ UAI, MIT, NTU Singapore, Oxford, US Land Grant University System, WUR
Development Partners	Gates Foundation, Mastercard Foundation, World Bank, BRD, LuxDev	AfDB, AFD, AGGF, Bezos Earth Fund, Buffett Foundation, Denmark, EU, Gatsby, GIZ/BMZ, IFAD, IKEA Foundation, JICA, KOICA, NORAD/NORFUND, SDC, SIDA, Small Foundation
Non-profits, UN, and Food Innovation Hubs	AGRA, FAO, GanzAfrica, One Acre Fund, TBI, UNICEF, UNIDO, WFP	UN agencies & NGOs with innovation pipelines. Food Innovations Hubs like Enterprise Singapore, and Food Valley NL, Greenwich, Swiss Food and Nutrition Valley
Smallholders and cooperatives	Farmer Orgs, RYAF	

3.7.2 Rwanda Food Innovation Partnership (RFIP)

The strategy proposes the **Rwanda Food Innovation Partnership (RFIP)** as a lean coordination and delivery platform for Rwanda's food innovation ecosystem. RFIP's mandate is to catalyse finance, knowledge, and technology to drive Rwanda's food innovation ecosystem.

RFIP's activities explicitly align with what it will take to deliver on national goals: food security and nutrition, export diversification, youth employment, and adoption of frontier technologies across precision agriculture, protein diversification, digital infrastructure, and biotechnology. RFIP focuses its efforts on ensuring effective multi-stakeholder delivery of the three objectives at the heart of the strategy.

The model draws on lesson learned from other food innovation ecosystems around the world and ecosystem building models that have worked in Rwanda (Kigali International Financial Centre, stewarded by the Rwanda Finance Ltd, and the Rwanda Convention Bureau). It also takes an inclusive approach to draw on the required contribution of all key players, public sector, private sector, research, and academia, and other (non-) government organisations, many of whom are already driving critical efforts for Rwanda's food systems transformation.

The RFIP is deliberately lean, directing resources to innovation activities rather than administration or infrastructure, and operates through six core functions:

- **Finance catalyser:** channelling investment, structuring financial mechanisms, and linking innovators to funding, including managing the RFIP Innovation Fund (RIF) which supports applied research through competitive grants.
- **Knowledge catalyser:** facilitating research, data analytics, and strategic intelligence to guide ecosystem development, and bringing in specialised global expertise to address identified gaps.
- **Technology catalyser:** accelerating the development, validation, and deployment of technologies across the food innovation ecosystem, bridging the gap between research outputs and market application.
- **Front Door:** providing intake, screening, referral, and navigation services to innovators, ensuring clarity, transparency, and efficiency in how they access services, funding, facilities, and networks.
- **Feedback loops:** embedding monitoring, evaluation, and learning to capture performance data and stakeholder feedback, and providing government with evidence to strengthen public service delivery and strategic positioning.
- **Branding and positioning:** shaping and communicating the identity, value proposition, and strategic positioning of RFIP, while promoting Rwanda's food innovation ecosystem nationally and internationally.

3.7.3 RFIP Partner's Group

Partnership participation is built on a simple accountability rule: each partner commits at least one documented contribution per year, aligned to the annual workplan. Contributions can include co-financing, in-kind technical support, pilot or adoption commitments, distribution and delivery channels, or seconded staff.

Contributions to RFIP fall into two distinct tracks: operational contributions that directly support RFIP's core secretariat capacity, and programme contributions that fund specific thematic activities, challenge funds, or innovation windows. Partners may contribute to one or both tracks. Operational contributions can be made in cash to the host institution or in-kind through seconded staff or embedded consultants with agreed terms of reference. Programme contributions are channelled directly to implementing partners or the RFIP Innovation Fund under transparent grant mechanisms.

A tiered membership structure organises partner engagement across three levels, ranging from associate partners providing targeted support to strategic partners making significant multi-year commitments. The specific tier amounts and associated benefits will be confirmed during the RFIP inception phase once governance instruments and the operational model are finalised. As RFIP matures, membership contributions are intended to form a growing share of its operational funding, reducing dependence on donor financing over time.

Partners sign an MoU aligned to annual ecosystem priorities and agree on a workplan specifying contributions, milestones, and expected results. RFIP maintains a contributions tracker and produces quarterly progress reviews. The Partners Group provides recommendations to RFIP and the ESC on pipeline priorities and delivery bottlenecks; decision-making authority rests with the RFIP Board of Directors, which holds corporate governance and fiduciary responsibility for the institution.

Partnerships are central to how this model works. They bring specialised technical capabilities and R&D pipelines into priority domains, strengthen commercialisation and adoption pathways through real market channels, and attract larger investments by demonstrating shared risk and shared returns through co-invested delivery.

3.8 Monitoring, Evaluation, & Learning

3.8.1 Theory of Change (ToC)

The strategy rests on casual logic that when Rwanda strengthens the enabling environment for innovation, innovators and firms can develop, test, and scale solutions faster and at lower risk. As these solutions are deployed through real delivery channels, especially cooperatives and smallholder systems, they improve productivity, reduce post-harvest loss, raise dietary quality, and strengthen competitiveness and resilience across the food systems.

Reaching these outcomes depends on engaging the full range of food systems actors. Smallholder farmers and cooperatives are the primary adoption pathway for production and nutrition innovations. Processors, input suppliers, and traders determine whether innovations move through the value chain or stall at farm level. Financial institutions shape whether promising ventures survive beyond early validation. Regulators define how quickly and predictably new products reach the market. Research institutions generate the knowledge base that innovations draw on. Each actor group has a role in the system this strategy builds, and the ecosystem is designed to engage all of them.

Over time, these interconnected outcomes translate into measurable national impact, including improved food security and nutrition, higher incomes and dignified jobs, and increased export performance. The full Theory of Change is provided in Annex 1. Strategic objectives, key performance indicators, and targets across 2027, 2030, and 2035 are set out in the Results Framework in Annex 2.

3.8.2 Results Framework

Three strategic objectives organise Rwanda's food innovation priorities: strengthening the business environment and regulation, mobilising private sector investment and entrepreneurship, and building research and human capital. Together, they define what the ecosystem needs to achieve and in what sequence. Each objective is grounded in the Theory of Change and cross-referenced to indicators in the full Results Framework (Annex 2), and Table 11 below highlights key indicators.

Table 11: KPI table (ecosystem dashboard).

Level	Category	Baseline (2024)	Mid-Term (2030)	Long-Term (2035)
Innovation	Time to sandbox entry	n/a (new)	45 days	<30 days
	Registration time	120 to 180 days	90 days	<60 days
	Ventures supported per year	10 to 12	25	24 to 40
	Commercialization rate	<10%	20%	30%
	Patents/prototypes per year	1 to 2	5	5 to 10
	Startup survival (2-year)	20 to 25%	35%	>50%
	Specialised graduates	0	250	500
Financial	Capital mobilised per year	USD 639m py; 0 in food innovation	+ USD 15m py in food innovation	USD 20m py in food innovation
	Net crowd-in capital	>20%	20%	<25%
Outcome	Productivity	25 to 40%		+10 to +15%
	Export revenue in agri and agri processing	USD 500m per year	+USD 100 to 150m per year	+USD 100 to 150m per year
	Youth jobs			20,000 to 30,000
	Dietary diversity			+1 to +2 DDS points

Note: Please note that these global benchmarking numbers are not specific to any food ecosystem, as data on that is not available. These benchmarks are ranges constructed from OECD, Startup Genome, Singapore, the Netherlands, Singapore, and Israel annual reports.

4 BUSINESS AND INVESTMENT PLAN FOR THE STRATEGY

This section sets out the delivery and financing approach for the strategy, covering the role of the Rwanda Food Innovation Partnership (RFIP) as the coordinating mechanism for implementation and presents investment required across the three strategic objectives.

4.1 Delivery and Governance Model

4.1.1 Delivery Model

The RFIP will serve as the main delivery mechanism for this strategy. It will support implementation, coordinate partnerships, and help align action across the food innovation ecosystem. The strategic oversight and alignment with national priorities will remain with the Government of Rwanda (GoR), while day-to-day management and operational decision making will be delegated to an independent and neutral professional entity. RFIP is proposed as an autonomous, multi-stakeholder body. It is intended to serve as the central catalysing mechanism for the strategy across all stakeholders, public institutions, research and academic organisations, private sector actors, financial institutions, and development partners. Its role is not to replace existing institutions, but to connect them around a shared agenda for food innovation, investment, and ecosystem development.

4.1.2 Governance Model

The governance structure for RFIP is simple and focused on delivering this strategy. It operates through a three-tiered governance structure that separates strategic advisory functions, formal governance, and implementation partnerships.

Board: At the top of the formal governance hierarchy sits the RFIP Board of Directors (see Table 12 for suggested categories of board members), which holds corporate governance responsibility, including fiduciary oversight. The Board meets quarterly to provide strategic guidance, ensure the institution is tracking against its long-term strategy and annual work plans, and actively supports partnership development, resource mobilization, and institutional visibility.

Supporting the Board on the advisory side are two key bodies: **The Executive Steering Committee (ESC)** engages with the Board once or twice a year to review RFIP's progress and exchange priorities aligned with the Government of Rwanda (GoR), flagging opportunities for alignment, areas needing support, and any necessary course corrections. **The Technical Advisory Committee (TAC)** provides expert technical input on RFIP's priority programs, though it is only activated once an RFIP Innovation Fund has been formally established to support fund management and central programming needs.

Day-to-day operations are carried out by the **RFIP Secretariat Team**, which is responsible for implementing the 10-Year Rwanda Food Innovation Strategy and Implementation Plan (2026-2035). The Secretariat works in close collaboration with the GoR's Working Group, the TAC, and bilateral partners, operating through a deep orchestration model with broader ecosystem players. On the partnership side, the RFIP Partners Group serves as official members who co-implement the Rwanda Food Innovation Strategy by providing direct and in-kind support, while also benefiting from RFIP membership, creating a mutually reinforcing relationship that underpins the entire initiative.

Table 12: Proposed member categories for the RFIP Board of Directors

No.	Board Member / Institution	Role	Category
1	Eminent private sector leader or recognised expert aligned with Rwanda's food innovation vision	Chairperson of the Board	Independent / Private Sector / Expert
2	GoR representative(s)	Board Member	Government – Core Ministry
3	Representative, funding community funder	Board Member	Funder
4	Technical/thematic expert from R&D institutions, implementing partners	Board Member	Independent Expert

4.2 Investment Plan

The strategy requires investment at two related but distinct levels. First, it requires investment across the wider food innovation ecosystem to deliver the three strategic objectives. Second, it requires a functioning delivery mechanism, RFIP, with the institutional capacity to coordinate implementation over time.

4.2.1 Ecosystem Investment

The indicative investment for the overall strategy is structured around the three strategic objectives of the strategy. Strategic Objective 1 focuses on strengthening the business environment, regulatory architecture, and institutional coordination. Strategic Objective 2 focuses on enabling private sector growth through innovation. Strategic Objective 3 focuses on strengthening applied R&D and human capital. Across the ten-year period, the largest shares of investment are directed toward private sector growth and entrepreneurship, and toward applied research, skills, and innovation infrastructure, reflecting the scale of effort required to build a functioning ecosystem.

Table 13 therefore presents the indicative investment required to deliver the strategy across the three strategic objectives.

Table 13: Indicative investment overview per strategic objective and source of funding (x1,000 USD)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Total
Strategic Objective 1: Strengthen Business Environment, Regulatory Architecture, and Institutional Coordination	555	510	110	3,110	110	110	110	110	110	110	4,945
Strategic Objective 2: Enable Private Sector Growth through innovation	1,990	2,030	1,990	1,990	1,990	1,585	1,585	1,585	1,585	1,585	17,915
Strategic Objective 3: Strengthen applied R&D and human capital:	1,858	1,673	2,623	2,473	1,673	1,673	1,673	1,673	1,673	1,673	18,660
Total Program Funding	4,403	4,213	4,723	7,573	3,773	3,368	3,368	3,368	3,368	3,368	41,520

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Total
Public contribution GoR	310	335	335	335	335	235	235	235	235	235	2,825
Philanthropic contribution	4,093	3,878	4,388	7,238	3,438	3,133	3,133	3,133	3,133	3,133	38,695
Total Program Funding	4,403	4,213	4,723	7,573	3,773	3,368	3,368	3,368	3,368	3,368	41,520

The allocation reflects the strategy's priorities. Objective 1 funding supports the enabling environment for innovation (e.g., coordination, regulation, and institutional architecture). Objective 2 supports enterprise growth, innovation pipelines, and private sector participation. Objective 3 supports applied research, skills, and infrastructure needed to sustain long-term ecosystem development. Together, they create a coherent pathway from early innovation to commercial scale.

4.2.2 RFIP Investment

In addition to the investment required for implementing this strategy across its three strategic objectives, RFIP requires its own financing model as the institutional mechanism responsible for delivering this strategy. RFIP's financing model is built on a diversified set of possible funding opportunities and the anticipated revenue streams. The financial model blends public commitment, development partner co-financing, and a growing revenue stream intended to cover operational expenses over time. It is designed to support institutional stability and predictable programme delivery.

Table 14 presents the indicative financing model for the RFIP, focusing on the resources needed to establish and operate RFIP as the strategy's delivery mechanism.

Table 14: Financing overview RFIP including donor contributions and revenues per year (USD x,1000.)

RFIP Funding source	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Total
Government of Rwanda contribution	100	100	50	50	50	0	0	0	0	0	350
Co-financing phase 1&2	300	300	300	300	300	0	0	0	0	0	1,500
Co-financing phase 3	0	0	0	0	0	300	300	300	300	300	1,500
Revenue	298	282	820	1,031	846	1,596	1,596	1,596	1,846	1,846	11,756
Total Funding	698	682	1,170	1,381	1,196	1,896	1,896	1,896	2,146	2,146	15,106

Table 14a presents only the Government of Rwanda Year-by-Year Budget Commitment (x1,000 USD):

GoR Contribution	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Total
Programme Contribution	310	335	335	335	335	235	235	235	235	235	2,825
RFIP Secretariat Support	100	100	50	50	50	0	0	0	0	0	350
GoR TOTAL COMMITMENT	410	435	385	385	385	235	235	235	235	235	3,175

The government's total commitment of USD 3.175 million represents 7.6% of total financing needs, a floor commitment designed to catalyse development partner and private sector capital at a ratio of approximately 1:12. Government funding exits RFIP operations entirely by Year 6 (2031).

The table below summarizes the financing structure of RFIP across the three implementation phases. It reflects the transition from development partner, funded establishment to a diversified hybrid model combining public anchor funding, partner program financing, and private-sector revenue. Percentages refer only to the total annual budget required to maintain the RFIP's operational costs. The shift across phases illustrates how operational sustainability will be strengthened over time while preserving blended financing for public-good innovation investments.

Table 15: Financing split for operation costs of the RFIP.

Phases	Government of Rwanda	Development Partners	Private Sector (Revenue + Co-Financing)
Phase 1 Foundation (2026–2027)	13.8%	3.9%	0.0%

Phase 2 Acceleration (2028–2030)	41.5%	23.4%	14.9%
Phase 3 Maturity (2031–2035)	44.7%	72.7%	85.1%

5 IMPLEMENTATION PLAN FOR THE STRATEGY

This section sets out the phased implementation roadmap (2026–2035) for the strategy, covering priority actions, milestones, and delivery sequencing across all three strategic objectives. RFIP is the institutional engine responsible for coordinating this delivery

5.1 Implementation Roadmap

Implementation will take place in three phases: Foundation, Acceleration, and Maturity. This phased approach aligns RFIP's growth trajectory with national objectives and funding needs. It also provides stakeholders and donors with a transparent timeline for institutional evolution, capacity expansion, and expected outcomes.

During Phase 1, RFIP will be a dedicated Secretariat team spanning public and private sector, housed within and reporting to MINAGRI to ensure alignment with this vision and implementation plan. The independent Host Institution is accountable for contracting, and administrative functions, providing a stable operational backbone while RFIP establishes itself and transitions toward an independent statutory entity. This structure ensures transparency, technical rigour, and effective execution across the innovation ecosystem. The goal of the Secretariat is to operationalise this strategy, design initial programs, and crowd in partners and investments to fund at least the first five years of programming. By the acceleration phase (2028), the RFIP will have transitioned into a standalone entity with a legal personality, a Board of Directors, and a self-sustaining financing model.

Phase 1: Foundation (2026 to 2027)

- Lean RFIP hosted team within Host Institution
- Launch sandbox and food innovation policy fellowship
- Design and launch investment accelerator
- Design and launch venture studio/incubator programs
- Begin digitization of regulatory systems
- Initial partner recruitment
- Strengthen human capital pipeline

Phase 2: Growth/Acceleration (2028 to 2030)

- Transition RFIP to become independent and move to an independent office
- Scale venture support to 25+ ventures/year
- Deploy USD 20M annual capital
- Invest in lab infrastructure and accreditation
- Harmonize standards regionally
- Deliver 500+ skilled graduates per year

Phase 3: Maturity (2031 to 2035)

- Transition of public GoR funding and the RFIP will rely on development partner funding and own (modest) revenue streams to cover operational costs and be sustainable.
- 25 to 40 ventures/year with >30% commercial launch rate
- <30 days sandbox entry
- <60 days product registration
- 20,000 to 30,000 youth jobs generated
- Sustained ecosystem performance at regional scale

Annex 3 presents a Gantt chart outlining the planned activities over the next ten years for the identified strategic objectives.

5.1.1 Five Pre-Africa Food Systems Forum (AFSF) Suggested Actions

Five actions before September 2026 will maximise the potential of continuing the momentum of this strategy: (1) RFIP founding team in place, with the current Steering Committee confirming immediate implementation arrangements and the Board constituted and convened at least once before AFSF; (2) Regulatory Sandbox concept note published and inter-agency MoU signed (RSB, FDA, RICA, RDB); (3) At least 5 international companies confirmed as active pilot participants or Expressions of Interest submitted; (4) At least 2 partnership agreements with international research institutions or development partners signed; and (5) at least 1 innovation challenge completed with Rwandan innovators.

Figure 4 below summarizes the high-level launch and incubation plan.

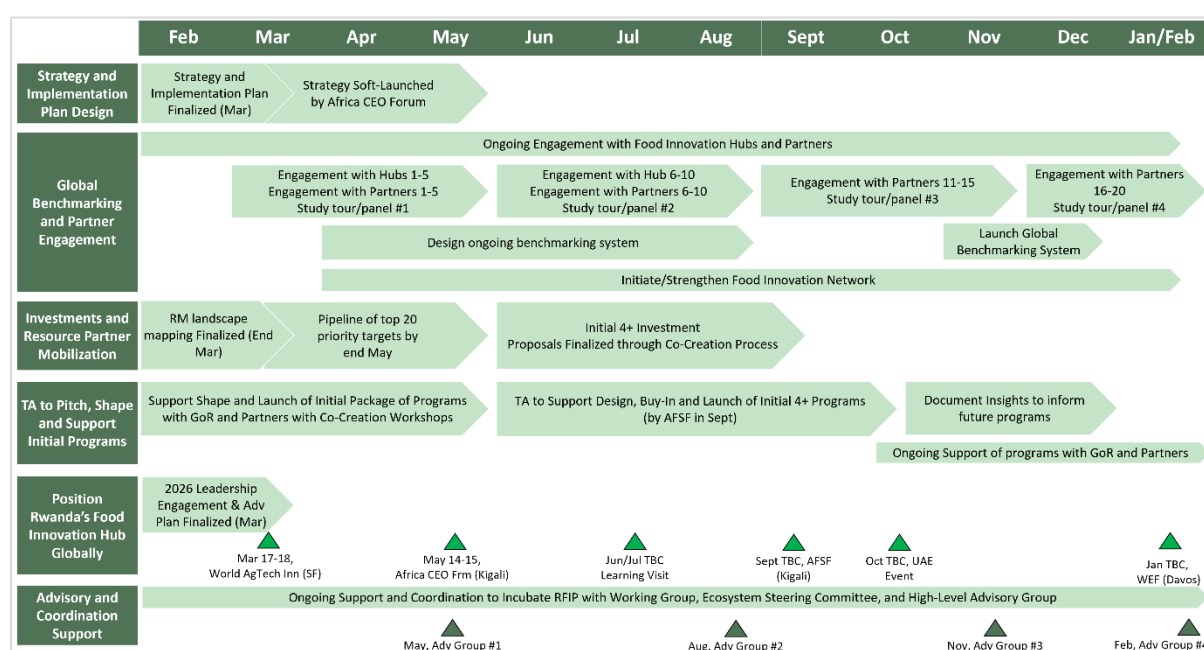


Figure 4: 2026 High-Level Launch and Incubation Plan.

5.2 Immediate next steps for the launch of the RFIP

To operationalise the RFIP, three immediate steps should be implemented to move from strategy design to execution and ensure that governance and staffing are in place from the outset:

- 1. Finalise RFIP governance membership.** The Steering Committee and Working Group will confirm and appoint the members of the High-Level Advisory Group, which will transition into the RFIP Board, using the roles and suggested composition provided by the consulting team.
- 2. Mandate implementation arrangements and governance instruments.** The current Steering Committee, supported by its Working Group and with inputs from the Advisory Group will oversee the immediate arrangements required to operationalise RFIP. This includes designating the team within the Government of Rwanda to initiate recruitment of the RFIP team, finalising the initial governance mechanisms, and authorising preparation of a governance manual to guide decision-making, oversight, and operational procedures. Once constituted, the Board will assume ongoing governance and oversight of RFIP.

3. **Recruit core RFIP human resources.** The mandated team within the independent host entity will proceed with the hiring of RFIP human resources using the job descriptions provided as an annex to the Strategy.

ANNEXES

Annex 1: Theory of Change

The Rwanda Food Innovation Ecosystem Strategy is premised on a causal logic that targeted public and private investment in regulatory reform, business facilitation, and applied R&D will unlock a self-sustaining innovation ecosystem. This ecosystem will accelerate food innovation from concept to market, attracting both international and domestic capital, building human capacity, and ultimately improving food security, job creation, and export competitiveness.

Table 16: Theory of Change

Food Innovation Ecosystem
Inputs The Strategy mobilises four key resource streams: 1. Government of Rwanda budget allocation 2. Development partner grants 3. A founding RFIP team (~5 core staff plus seconded personnel) 4. Partner institutions (MINAGRI, MINICT, RDB, RSB, FDA, University of Rwanda, RICA, CMU Africa). These inputs create the operational foundation for ecosystem coordination and delivery.
Activities Six integrated activities drive the Strategy forward: 1. Operating a Regulatory Sandbox and streamlining food product certification (RSB/FDA, 6-12-month timeline). 2. Running the Innovation Investment Accelerator with two tracks: • Track A engages 25-50 international companies in co-development and market entry • Track B operates a Venture Studio providing seed capital and mentoring to 25-100 home-grown Rwandan entrepreneurs. 3. Funding applied R&D partnerships between UR/RICA and international institutions, including innovation grants to link research to commercialisation. 4. Implementing human capital development through curriculum reform and training programmes targeting 150-1,000 professionals across the value chain. 5. Establishing a coordinating Ecosystem Steering Council (ESC) and an ecosystem data platform (to be determined within the MINAGRI MEL system). 6. Operating a functional Monitoring, Evaluation and Learning (MEL) system with quarterly data collection and annual independent evaluations.
Outputs These activities produce tangible ecosystem infrastructure and services: 1. A live regulatory sandbox with clear admission criteria. 2. A growing pipeline of innovations (5-25 annually) 3. Demonstrated engagement of international companies (5-75 cumulative) 4. Capital mobilised through ecosystem financing (USD 5-100M+). 5. A growing cohort of supported Rwandan ventures (25-100+) 6. expanded R&D partnerships (5-20 cumulative). 7. trained professionals (150-1,000 cumulative).

8. an operational ecosystem data platform enabling real-time tracking.

Intermediate outcomes

Four intermediate outcomes bridge outputs to long-term outcomes and address key feedback gaps:

1. Private investment mobilised increases from USD 0 to USD 5-10M (2027), USD 30-50M cumulative (2030), and USD 80-100M+ (2035), validating that the ecosystem is attracting market-driven capital.
2. Adoption of improved or innovative technologies/practices among target farmers and SMEs rises from a <10% baseline to 12% (2027), 25% (2030), and 40% (2035), demonstrating real-world uptake beyond proof-of-concept.
3. Regulatory approval time for food innovations decreases from a 120–180-day baseline to <100 days (2027), 90 days (2030), and <60 days (2035), enabling faster innovation-to-market cycles.
4. Commercialisation of sandbox graduates reaches 15% (2027), 25% (2030), and 30% (2035), showing that innovations move from regulatory approval into commercial operation.

Outcomes

As intermediate outcomes strengthen, the Strategy catalyses four primary outcomes:

1. Rwanda positioned as Africa's leading food innovation proof-of-concept platform, attracting entrepreneurs, investors, and research institutions.
2. Innovation-to-market cycle shortened from 36-48 months to <18 months by 2035.
3. Applied R&D system strengthened through deeper private-sector linkages and credible commercialisation pathways.
4. Private investment ecosystem activated, with companies scaling and reinvesting locally.

Impact

Sustained outcomes drive long-term development impact:

1. Improved food security and nutrition, with food insecurity prevalence declining from 17% to <10% by 2035.
2. Job creation in agri-food innovation, targeting 20,000-30,000+ jobs by 2035.
3. Increased agri-food export value: USD150K+ by 2035.
4. Enhanced climate resilience in food systems through adoption of climate-smart and innovative agricultural practices.

Enabling conditions (cross-cutting)

1. Sustained political commitment from GoR (including budget allocation, enabling regulations, and high-level coordination)
2. Effective RFIP governance, operational management, and independence in ecosystem facilitation
3. Continued development partner support (particularly co-financing of innovation grants and capacity building),
4. and a functioning MEL system that provides credible feedback for adaptive management and accountability.
5. Gender equality, youth participation, and climate mainstreaming are integrated across all activities and outcomes.

Annex 2: Results Framework

Table 17: Results Framework

Annex 2.1: Impact Level Indicators

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
Agricultural productivity growth	%	2-3%	3-4%	4-5%	5%+	NISR Annual Agricultural Survey	MINAGRI	Climate conditions stable; technology access improving
Food insecurity prevalence	% population	17%	15%	13%	<10%	NISR Integrated Household Living Conditions Survey	MINAGRI/MINALOC	Broader food systems investments sustained
Agri-food export value	USD millions	500 (est.)	530	600	650+	NBR trade data	MINAGRI/MINCOM	Market access conditions stable

Annex 2.2: Outcome Level Indicators

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
Rwanda's rank as food innovation destination (Africa) (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	Rank (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	Not ranked (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	Top 5 (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	Top 3 (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	#1 (definition to be confirmed in Year 1 baseline; source to be an external published index or a transparent composite agreed by Government and partners)	Annual ecosystem survey / GFII index	To be decided by MINAGRI	Effective branding and positioning maintained
# of active food innovation companies (intl. + domestic)	Number	15-20	25-35	75-100	150+	RDB company registry + RFIP tracking	RDB	Regulatory environment improved;

								sandbox effective
Innovation-to-market cycle (avg. months)	Months	36-48 (est.)	30	24	<18	RFIP tracking system; case documentation	To be decided by MINAGRI	Sandbox and certification streamlined

Annex 2.3: Intermediate Outcome Level Indicators (NEW)

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
Volume of private investment unlocked/mobilised (cumulative)	USD M	0	5-10	30-50	80-100+	RFIP investment tracking database; RDB FDI data	RDB	Investable pipeline maintained; risk instruments deployed
Technology adoption rate (% of target farmers/SMEs adopting at least one innovation)	%	<10% (est.)	12%	25%	40%	Annual adoption survey (RFIP + MINAGRI)	MINAGRI	Extension services functional; innovations affordable
Regulatory approval time (avg. days for food product registration)	Days	120-180	100	90	<60	RSB/FDA administrative records; annual audit	RSB/FDA	Regulatory reform sustained; staff capacity maintained
Commercialization rate (% of sandbox graduates reaching commercial operation)	%	n/a (new)	10%	20%	30%	RFIP tracking system	To be decided by MINAGRI	Financing and market linkages in place

Annex 2.4: Output Level Indicators (Strategic Objective 1)

Business Environment & Regulation

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
Regulatory sandbox operational	Yes/No	No	Yes	Yes	Yes	ESC Annual Report	RDB	Inter-agency coordination secured
# of innovations admitted to sandbox (annual)	Number	0	5	15	25	RFIP database MEL	RDB	Demand from innovators; clear criteria

# of product registrations completed (annual)	Number	~50	70	100	150	FDA/RSB admin data	RSB/FDA	Digitization complete; capacity maintained
# of cross-institutional coordination decisions issued (annual)	Number	4-6	12	18	24	RFIP meeting records	To be decided by MINAGRI	Political will sustained

Annex 2.5: Output Level Indicators (Strategic Objective 2)

Private Sector Investment & Entrepreneurship

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
# of international companies engaged (Track A, cumulative)	Number	0	5-10	25-50	50-75	RFIP/RDB company database	RDB	Value prop competitive; sandbox functional
# of Rwandan ventures supported (Track B, cumulative)	Number	10-12	25	60	100+	RFIP MEL database	NIRDA	Financing instruments deployed; mentorship available
Startup 2-year survival rate	%	20-25%	30%	40%	>50%	Annual cohort tracking (RFIP)	To be decided by MINAGRI	Business development support sustained
Commercialization rate (% reaching commercial operation)	%	n/a (new)	15%	25%	35%	RFIP tracking	To be decided by MINAGRI	Financing and linkages in place

Annex 2.6: Output Level Indicators (Strategic Objective 3)

R&D & Human Capital

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
# of international R&D partnerships (cumulative)	Number	2-3	5	12	20	UR/RICA institutional records	UR/RICA/RFIP	Partner institutions interested; co-funding available
# of agri-food professionals trained through programs (cumulative)	Number	0	150	500	1,000	Training records (RFIP + institutions)	UR	Curriculum developed; trainers available

# of agri-food specialised graduates (annual)	Number	~50 (est.)	100	250	500	MINEDUC/HEC administrative data	UR/RICA	Curriculum reform implemented; student demand
# of innovation prototypes/patents filed (annual)	Number	1-2	5	10-15	20+	NIRDA/IP Rwanda records	NIRDA/UR	TTO capacity strengthened; IP awareness improved

Annex 2.7: Micro-Level Indicators (R&D Sector Transformation)

Indicator	Unit	Baseline 2024	2027 Target	2030 Target	2035 Target	Means of Verification	Responsible	Key Assumptions
% of research publications with practical/applied outcomes	%	<20% (est.)	25%	40%	55%	Annual research output review (RFIP)	UR/RICA	Applied research culture fostered
Avg time from research completion to technology transfer	Months	>24 (est.)	18	12	<9	TTO tracking systems at UR/RICA/CMU	UR/RICA	TTO staffed and operational
# of technologies from local research entering commercial pilots (annual)	Number	0-1	2-3	5-8	10+	RFIP commercialization database	NIRDA	Sandbox and innovation grant operational

Annex 3: RFIP 10-year Implementation Gantt Chart

[illegible]

Annex 4: Initial Flagship Projects – Regulatory Sandbox and Investment Accelerator

Rwanda's Food Innovation Strategy is anchored by three primary objectives. In its initial phase, however, two programs will serve as the main drivers: the Food Innovation Policy Accelerator and Food Innovation Investment Accelerator. These first two programs are advanced through two specific projects: the **Food Innovation Regulatory Sandbox**, which pilots new food policies and regulations, and the **Food Innovation Investment Accelerator**, which supports startups and businesses in the sector. These are the principal mechanisms for implementing the strategy during the first two years.

These two programs and corresponding projects are prioritised because Rwanda's innovation landscape requires simultaneous progress on multiple fronts. The Sandbox establishes clear, predictable regulations, while the Investment Accelerator supports companies that are ready to scale. With these projects in operation, other initiatives, such as research partnerships, human capital development, and institutional coordination, will become more effective and efficient.

They do not require Rwanda to create new systems entirely from scratch and are explicitly informed by international best practices. The Sandbox draws on Singapore's Food Agency and the UK's regulatory sandbox, while the Investment Accelerator adapts elements from the Netherlands' FoodValley initiative and its public-private partnership model. Rwanda tailors these proven approaches to its own institutional context, rather than importing external models wholesale.

This document provides detailed information about each project: their objectives, operational processes, institutional responsibilities, expected outcomes and timelines, associated costs, and the benefits for both international companies and Rwandan entrepreneurs.

5.2.1 Project 1: Food Innovation Regulatory Sandbox

The Problem the Sandbox Solves

Currently, Rwanda's food safety and registration regulations do not sufficiently address traditional foods or farm inputs. As a result, companies developing precision fermentation proteins, gene-edited crops, biofortified foods, or novel pest control technologies encounter avoidable regulatory barriers. The lack of certainty regarding timelines and safety standards complicates pilot planning and increases risk.

The regulatory sandbox addresses this gap by providing a defined, time-limited, and transparent process for innovations that fall outside established pathways. Admitted companies receive a standardised safety dossier format, a fixed-term operating approval within an agreed scope, and designated contacts at RSB and Rwanda FDA, each with binding response deadlines. The process offers a documented route to approval or rejection. Importantly, the sandbox maintains high safety standards while generating evidence for informed regulatory decisions.

This model draws on the UK Food Standards Agency's regulatory sandbox, launched in 2021 for cultivated and fermentation-derived foods. The UK approach reduced the safety assessment and controlled production approval timeline to 18 months, compared to the five years typically required for conventional novel food approvals.

Singapore's SFA process demonstrated that Eat Just's cultivated chicken received conditional approval in 14 months, illustrating that speed and rigour can coexist.

What the Sandbox Is and Is Not

The sandbox functions as a legal instrument rather than a physical location. Companies admitted to the program receive formal written approval from RSB and Rwanda FDA, detailing the product, approved use conditions, monitoring requirements, and an 18-24-month operational timeframe. All safety standards must be met while companies gather evidence required for final regulatory approval.

The sandbox is not intended for all innovations. It is specifically designed for products and technologies that fall outside existing approval categories or utilize production methods without precedent in Rwandan regulations. Conventional improved seed varieties, standard equipment upgrades, and market-linked digital tools continue to use the established approval pathways. The sandbox is most appropriate for **precision fermentation products, cultivated proteins, novel biocontrol agents, gene-edited varieties with no approved equivalents, and advanced food ingredients produced through non-standard biotechnological processes**. These areas align with Rwanda's strategic focus on modern production technologies and protein diversification.

Institutional Responsibilities

Seven institutions oversee the Sandbox, each fulfilling its established mandate. RFIP is responsible for coordination, which includes tracking applications, facilitating communication between applicants and regulators, and reporting to the Ecosystem Steering Council.

Admission Criteria

Sandbox eligibility is determined by four criteria: (1) the product is new to Rwanda's regulatory framework; (2) the applicant has completed pre-commercial development; (3) the applicant agrees to monitor and share data throughout and after the sandbox period; and (4) the innovation supports Rwanda's food innovation strategic domains.

The Admission Process: Step by Step

The authorization process involves ten sequential steps, each assigned to a specific institution and governed by a binding Service Level Agreement (SLA). Publicizing SLAs provides companies with process certainty when considering Rwanda as a destination. Rwanda will publish these SLAs on the RSB website prior to opening applications.

The Safety Dossier Template

Rwanda's dossier template adapts Singapore's proven format for emerging markets. It covers: (1) product and intended use; (2) production and control steps; (3) composition data; (4) safety data; (5) allergen assessment; (6) proposed use, labelling, and distribution.

The dossier does not require clinical trial data initially, mirroring the UK FSA approach. Clinical data are needed only if earlier data raise concerns. Companies already cleared in Singapore, the UK, or the EU can submit existing dossiers, provided RSB reviews the local context. This cross-recognition saves companies time and costs as Rwanda aims to attract multinational corporations and develop products for African markets.

SLAs and Accountability

Total time from dossier submission to sandbox authorisation is capped at 90 days: 10 (check), 3 (routing), 45 (review), 10 (committee), 2 (decision), 20 (agreement). This matches Singapore's 60-90-day target. The UK FSA sandbox took 18 months, but included full production, unlike Rwanda's 90-day assessment.

RFIP tracks all applications and reports to the Ecosystem Steering Council. Any SLA breach requires an explanation from the responsible institution, and repeated issues go to the ministry. This system keeps the process on schedule and applicants informed.

Exit Pathways

Exited innovations follow one of four paths, based on sandbox outcomes. Rwanda's approach is like Israel's, applying faster approval for familiar products, standard review for novel ones, or publishing reasons for rejection.

Expected Outputs, Outcomes, and Timeline

Budget

The sandbox program is not capital-intensive. The initial investment required for designing the framework, developing templates and the portal, and establishing the governance structure is estimated at USD 100,000. This amount covers international regulatory advisory support and stakeholder consultations. These figures align with the UK FSA's reported setup costs for its regulatory sandbox pilot, which utilized existing FSA personnel and external legal and scientific expertise. Annual operational expenditures—including the dedicated RSB sandbox unit (two technical officers, one legal officer), the Rwanda FDA specialist, and the annual independent review process—are estimated at USD 80,000 to 100,000.

These costs are borne by the Government of Rwanda and should be incorporated into the budgets of RSB and Rwanda FDA. The design, setup, and initial year of operations may be grant-financed by a development partner as part of the program launch. From the second year forward, application fees—set to cover administrative costs without posing a barrier (an estimated USD 2,000 to 5,000 per application)—will offset a portion of the ongoing operational expenses.

5.2.2 Project 2: Innovation Investment Accelerator

The Problem the Accelerator Solves

Rwanda attracts foreign direct investment across various sectors. However, there is currently no dedicated program to systematically source and engage companies with agri-food innovation capacity seeking proof-of-concept testing and scaling opportunities. Consequently, many companies active in food technology do not find Rwanda, as outreach is fragmented among RDB, NIRDA, and individual ministries, without a unified and coordinated value proposition.

The Accelerator addresses this gap through two parallel tracks. Track A targets established international companies, such as multinationals and scale-ups, which seek to test and validate food innovations in an African context. The offering includes access to the sandbox, pilot facility arrangements, co-investment matching, and a clear pathway to commercial operations. Track B focuses on Rwandan entrepreneurs and SMEs that have developed promising food innovations but require regulatory navigation support, early-stage financing, and market linkages to transition from prototype to commercial product.

The design of Track A is informed by the Netherlands FoodValley soft-landing program, which offers international companies a structured entry point into the Dutch food innovation ecosystem. This approach includes dedicated account management, partner matching with research institutions, regulatory navigation, and access to FoodValley's physical infrastructure. From 2018 to 2023, FoodValley attracted 120 international companies through this model. While Rwanda cannot replicate FoodValley's full infrastructure in its initial phase, it can adopt the program's core elements: a structured offer, a dedicated engagement team at RDB, and a clearly articulated value proposition delivered proactively.

Institutional Responsibilities

The Accelerator is led by the Rwanda Development Board (RDB), which holds the mandate and international network necessary for investment attraction. The Kigali International Financial Centre

(KIFC) manages financial structuring for international investors. The Rwanda Food Innovation Partnership (RFIP) oversees pipeline tracking and coordination among institutions. No new institutions are required for program delivery.

Track A: Attracting and Supporting International Companies

Track A is Rwanda's dedicated offer to international companies with food innovation capabilities seeking a proof-of-concept market in Africa. The Netherlands' Top Sector Agri & Food program serves as the most direct reference, connecting international companies to Dutch research institutions through a managed co-investment structure. Between 2013 and 2020, this approach attracted EUR 850 million in private R&D investment by providing structured access to Wageningen University's research facilities, co-financing from the Dutch Research Council, and a clear intellectual property rights (IPR) framework. While Rwanda cannot match the institutional depth of the Netherlands, it provides a unique value proposition: an African market context, supportive government engagement for commercializing novel foods, and a regulatory sandbox that facilitates rapid in-market testing at lower costs than comparable European markets.

Rwanda's value proposition to Track A companies have five components. First: access to Rwanda's regulatory sandbox with named contacts, published SLAs, and a maximum 90-day assessment timeline, comparable to Singapore's SFA novel food process. Second: access to pilot and testing facilities at RAB research stations, RICA, and UR/ACES under pre-negotiated access protocols, eliminating the months of negotiation that typically precede a company's first field trial. Third: co-investment matching through KIFC and with commercial and non-commercial financing institutions, so companies face a lower upfront cost for their Rwanda pilot than they would in a comparable market. Fourth: a clear route to EAC market access: innovations validated in Rwanda's sandbox have a documented pathway to mutual recognition across the EAC, giving companies a 200 million-plus consumer market, not just Rwanda's 14 million. Fifth: dedicated account management at RDB's food innovation desk, so companies are never navigating the process alone.

Track B: Home-Grown Rwandan Entrepreneurs

Track B addresses distinct challenges faced by Rwandan agri-food entrepreneurs. These include costly and time-consuming regulatory navigation for small companies lacking compliance staff, limited availability of early-stage risk capital tailored to food innovation, and insufficient systematic market linkages to buyers, distributors, and anchor institutions. The program responds to these barriers through structured support delivered mainly by partnerships with existing commercial and development finance institutions (e.g., Ireme Invest, RSSB, BRD) to design tailored, stage-specific financing instruments, the National Industrial Research and Development Agency (NIRDA), with the Ministry of Agriculture and Animal Resources (MINAGRI) facilitating market linkages via its extension network.

The Track B model incorporates elements from Kenya's KIRDI innovation acceleration program (which combines product development grants, access to testing facilities, and market linkage support for food processing entrepreneurs) and Singapore's FoodInnovate startup-corporate matching initiative, which pairs early-stage food companies with established industry partners for co-development pilots. While Track B does not seek to replicate either program in full, it adopts the core design principle that early-stage entrepreneurs benefit most from a comprehensive package of support, rather than isolated instruments.

Joint Value Proposition

The two programs are intentionally structured to function as an integrated system. Regulatory certainty provided by the Sandbox reduces the perceived risk for companies considering a Rwanda-based pilot. In parallel, structured institutional engagement through the Accelerator lowers transaction costs and facilitates implementation. A company with regulatory clarity but no dedicated

support at RDB may encounter extended and uncoordinated negotiations. Conversely, strong engagement with RDB without assurance on regulatory timelines may inhibit investment decisions. Both programs are essential for Rwanda's value proposition to remain competitive.

The joint value proposition for international companies is as follows: apply to the sandbox in Rwanda, receive a decision within 90 days, conduct pilot projects with support from anchor institutions, and benefit from documented data, potential commercial approval, and introductions to key partners. For Rwandan entrepreneurs, the offer is to apply to the innovation challenge, access regulatory navigation, and early-stage funding, and bring products to market with comprehensive institutional support.

For development partners, the case is grounded in two primary figures: Phase 1 requires an estimated USD 4 million in total costs and seeks to mobilise USD 5 to 10 million in co-investment within 18 months. The Sandbox setup, at USD 100,000, represents a one-time investment that decreases subsequent applicant approval costs. Track B of the Accelerator allocates USD 2.3 million to support 60 to 80 Rwandan entrepreneurs and 20 to 30 early-stage commercial products by 2027. The Netherlands FoodValley program, with an initial phase budget of approximately EUR 2 million per year, secured over EUR 100 million in follow-on private investment within five years. Rwanda's Phase 1 aims are more modest in scale, but the program logic is comparable.

Governance, Coordination, and Accountability

Both programs are proposed delivered under established institutional mandates, building on the comparative strengths of public agencies already active in regulation, investment promotion, industrial development, and enterprise support. Under this proposed model, the Sandbox could be managed by RSB and Rwanda FDA, given their respective roles in food product and agricultural input regulation. The Accelerator could be delivered through institutions such as RDB, KIFC, NIRDA, and BRD whose statutory responsibilities aligned with program objectives. The intention is not to create new institutions. The innovation lies in the structured coordination across agencies and the public commitment to Service Level Agreements (SLAs), which obligate institutions to publish timelines and ensure accountability.

RFIP's coordination role is also proposed to be intentionally defined and limited. Under the model set out in this strategy, the RFIP would support pipeline tracking the program, monitor SLA compliance, and submit quarterly reports to the Ecosystem Steering Council. It does not manage program operations, employ technical reviewers, or make regulatory or financing decisions. This approach prevents RFIP from becoming a bottleneck or duplicating functions already assigned to mandated institutions. Accountability for performance would remain with the relevant agency-RSB for Sandbox efficiency and RDB for Track A engagement. RFIP's principal responsibility is to provide transparency and ensure the Ecosystem Steering Council has the necessary information to act.

Table 18: Overall Summary Table.

Purpose	Create a legal framework for testing and approving novel food innovations outside existing product categories	Attract and support international companies to pilot innovations in Rwanda	Support Rwandan entrepreneurs to commercialise food innovations
Lead institution	Rwanda Standards Board (RSB), co-signed by Rwanda FDA	Rwanda Development Board (RDB)	BRD and NIRDA
Primary beneficiary	International companies and innovators with novel food technologies	Established international food technology companies and scale-ups	Rwandan agri-food entrepreneurs and SMEs
Key instrument	Time-limited sandbox authorisation with defined SLAs and a safety dossier based on SFA Singapore / UK FSA template	Partnership Agreement with RDB; quarterly Rwanda Food Innovation Mission; structured incentive package	Open call / innovation challenge; BRD grants and loans; regulatory navigator; MINAGRI market linkage

Processing time	90 calendar days maximum from complete dossier to decision	20 business days to qualification; 30 days to Partnership Agreement	30 days from application to cohort notification
Phase 1 targets (2026 to 2027)	10 to 15 innovations admitted: first authorisations issued by end 2026	25 to 50 companies in Partnership Agreements; USD 5 to 10M capital mobilised	60 to 80 entrepreneurs in program; 20 to 30 receiving BRD finance
Phase 2 targets (2028 to 2030)	40 to 50 innovations; 25 to 35 commercial approvals; processing time below 60 days	100 to 150 companies engaged: USD 30 to 50M cumulative capital	150 to 200 entrepreneurs supported: 50 to 70 commercial products
Key international reference	UK FSA cultivated food sandbox (2021); Singapore SFA novel food pre-market approval; EU Novel Food Regulation 2015/2283; Israel tiered cultivated meat approval (2024)	Netherlands FoodValley soft-landing program; Top Sector Agri & Food PPP model	Kenya KIRDI food innovation acceleration; Singapore FoodInnovate startup-corporate matching
Phase 1 budget	USD 280,000 (setup) + USD 80,000 to 100,000/year operating	USD 850,000 (RDB desk + missions + KIFC)	USD 2,700,000 (BRD grants + NIRDA + challenge fund)
RFIP role	Pipeline tracking; SLA monitoring; escalation to ESC	Pipeline tracking; coordination between RDB, RSB, NIRDA	Pipeline tracking; challenge grant administration

5.2.3 Implementation Tables

Regulatory Sandbox

Table 19: Institution-wise roles for Regulatory Sandbox.

Rwanda Standards Board (RSB)	Lead Sandbox Administrator	Receives and registers applications; convenes the Joint Review Committee; issues sandbox authorisations; publishes admission criteria and SLAs; maintains the public register of admitted innovations	RSB mandate under Rwanda Standards Law	MINICT / Ministry responsible for standards	Dedicated sandbox unit: 2 technical officers + 1 legal officer
Rwanda Food and Drugs Authority (Rwanda FDA)	Co-Signatory and Safety Authority	Reviews and approves the food safety component of all sandbox dossiers; co-signs sandbox authorisations; sets post-market monitoring requirements; manages exit to full product registration	Rwanda FDA mandate under Food and Drugs law	Ministry of Health	1 dedicated novel food safety specialist
Rwanda Agriculture and Animal Resources Development Board (RAB)	Agricultural Innovation Reviewer	Reviews agricultural input innovations (seeds, biopesticides, crop protection) for agronomic safety, environmental risk, and compatibility with national variety lists	RAB mandate under seed law and plant protection law	MINAGRI	Existing capacity supplemented by 1 seconded specialist
Rwanda Institute for Conservation Agriculture (RICA)	Field Trial Coordinator	Provides field trial sites for agricultural innovations admitted to the sandbox; generates field safety and efficacy data under structured protocols	RICA institutional mandate	MINAGRI	Existing field trial infrastructure; no additional capacity required in Phase 1

National Industrial Research and Development Agency (NIRDA)	Food Processing Technology Reviewer	Reviews innovations in food processing, manufacturing, and biotechnology applications; provides technical assessment for non-agricultural inputs	NIRDA mandate under industrial R&D law	MINICT	1 dedicated food technology specialist
Rwanda Utilities Regulatory Authority (RURA)	Digital Platform Oversight	Regulates the digital application portal and data management standards	RURA mandate	MINICT	No dedicated capacity requirement
Rwanda Food Innovation Partnership (RFIP)	Coordination and Pipeline Tracking	Maintains the innovation pipeline database; facilitates communication between applicants and regulators; escalates SLA breaches to the Ecosystem Steering Council; produces quarterly pipeline reports	Coordination function under RFIP mandate	ESC	1 regulatory sandbox coordinator

Table 20: Criteria for Sandbox entry aligned to Ecosystem strategy.

Novel product category	Product falls outside existing category definitions in Rwanda's food safety or agricultural input frameworks	Precision fermentation-derived protein ingredient with no equivalent approved in Rwanda or EAC
Novel production method	Technology uses a production process with no direct regulatory precedent in Rwanda	Cultivated meat produced via animal cell culture; biocontrol agent produced via microbial fermentation
Demonstrated pre-commercial readiness	Applicant has completed laboratory-scale safety testing and proof-of-concept development	Company can submit compositional data, in-vitro safety data, and a defined production process description
Data-sharing commitment	Applicant agrees to submit quarterly monitoring reports to RSB and Rwanda FDA and to share post-market surveillance data	All applicants; non-compliance triggers suspension of sandbox authorisation
Regulatory alignment intent	Applicant is pursuing commercial approval in Rwanda or EAC as a defined business objective, not just using Rwanda as a low-cost testing location	Company submits a market entry business case as part of the application

Table 21: Application process.

1	Pre-application inquiry: applicant submits a one-page concept note to RSB describing the product, production method, and intended scope of use	Applicant submits; RSB responds	5 business days	RSB issues a pathway assessment: standard pathway, sandbox eligible, or not eligible
2	Application submission: eligible applicants submit a full sandbox dossier using the published template	Applicant	Not applicable	Completed dossier lodged on RSB digital portal
3	Completeness check: RSB reviews dossier for completeness against template requirements	RSB	10 business days	Dossier accepted as complete, or applicant notified of missing items (applicant has 15 days to resubmit)
4	Routing and specialist assignment: RSB routes the dossier to the relevant specialist reviewer (Rwanda FDA for food products; RAB for agricultural inputs; NIRDA for food processing innovations)	RSB	3 business days	Named specialist reviewer assigned; applicant notified of reviewer contact

5	Technical review: specialist institution conducts safety and technical assessment	Rwanda FDA / RAB / NIRDA (lead); RSB (coordinator)	45 calendar days	Technical assessment report submitted to RSB; reviewer may request supplementary data from applicant within this period (clock stops during applicant response period)
6	Joint Review Committee meeting: RSB convenes RSB, Rwanda FDA, and relevant specialist to review technical assessment and agree recommendation	RSB (chair); Rwanda FDA; RAB / NIRDA as relevant	Within 10 business days of receiving technical report	Committee recommendation: approve, approve with conditions, request further data, reject
7	Decision and notification: RSB communicates decision to applicant	RSB	5 business days after committee	Written decision with conditions and rationale
8	Sandbox Agreement: approved applicant signs a sandbox authorisation agreement with RSB and Rwanda FDA	Applicant; RSB; Rwanda FDA	10 business days after decision	Signed authorisation document; published on RSB register
9	Active sandbox period: company operates within agreed scope and conditions; submits quarterly monitoring reports; regulatory contacts conduct annual review	Company (operator); RSB and Rwanda FDA (oversight)	18 to 24 months (specified in agreement)	Quarterly monitoring reports; annual review meeting; documented compliance record
10	Exit assessment: at the end of the sandbox period, RSB and Rwanda FDA conduct an exit review based on accumulated evidence	RSB; Rwanda FDA	30 calendar days before sandbox expiry	Decision: full commercial approval, conditional approval, extension of sandbox period, or rejection with reasons

Table 22: Triggers, decision gates, process, and timeline.

Full commercial approval	Sandbox evidence demonstrates safety and compliance to the satisfaction of RSB and Rwanda FDA; no unresolved safety signals	RSB issues a standard product registration or agricultural input approval within 30 days of exit assessment; product enters normal commercial channels
Conditional commercial approval	Product meets safety standards but has specific use conditions (e.g. restricted distribution, mandatory labelling, age restrictions)	RSB issues approval with specific conditions attached; conditions reviewable after 12 months of post-market monitoring
Sandbox extension	Evidence base is positive but incomplete; additional monitoring or data collection is required	Sandbox period extended by up to 12 months; applicant and RSB agree revised monitoring protocol; no additional application fee
Rejection	Safety evidence is insufficient or negative; product does not meet Rwanda's food safety standards	RSB issues a written rejection with full technical reasons; applicant may appeal within 30 days to an independent technical review panel

Table 23: Indicators and Timelines.

Q2 2026 (June)	Sandbox framework document drafted and circulated to RSB, Rwanda FDA, NIRDA, RAB for review	All mandated institutions have reviewed and agreed responsibilities	Regulatory framework credible and institutionally owned	RSB (lead), RFIP (coordination)
Q3 2026 (September)	Sandbox admission criteria, dossier template, SLA schedule, and online portal operational	Companies have a clear, published process to apply	Rwanda signals regulatory readiness to international partners	RSB; NIRDA (portal); RURA (oversight)
Q4 2026 (December)	First cohort of 3 to 5 applications received; RFIP confirms at AFSF launch that sandbox is operational and receiving applications	First companies in active assessment process	Proof of operational function visible to donors and investors	RSB ; Rwanda FDA ; RAB ; NIRDA
End 2027	10 to 15 innovations admitted to sandbox; first sandbox	Regulatory processing time reduced to 90	Rwanda demonstrably faster and more predictable	RSB; Rwanda FDA

	authorisations issued; first exit assessments conducted	days (from 120 to 180 days)	than regional comparators	
End 2030	40 to 50 innovations having used the sandbox; 25 to 35 commercial approvals issued; regulatory processing time below 60 days	Rwanda positioned as EAC's most predictable novel food regulatory environment	International company decisions to locate in Rwanda influenced by regulatory quality	RSB; Rwanda FDA; RAB
End 2035	Sandbox graduates across all four priority innovation domains commercially operational; full EAC mutual recognition of sandbox-validated innovations	Adoption of Rwanda-tested innovations across EAC	Rwanda-tested innovations improving food security at continental scale	RSB; EAC Secretariat; Rwanda FDA

Table 24: Capacities within existing institutions to deliver this agenda.

Rwanda Development Board (RDB)	Track A	Lead: International Company Attraction	Operates the Rwanda Food Innovation Desk at RDB's one-stop centre; leads international outreach and sourcing; manages the formal Expression of Interest and qualification process; organises quarterly Rwanda Food Innovation Missions; acts as primary relationship manager for admitted Track A companies	2 dedicated agri-food investment officers within RDB's existing investment promotion unit
Kigali International Financial Centre (KIFC)	Track A	Financial Structuring and Investor Matching	Structures co-investment and blended finance arrangements for Track A companies; connects international institutional investors with Rwanda-based agri-food opportunities; facilitates partnership agreements between international companies and Rwandan financial institutions	1 dedicated agri-food finance specialist
Rwanda Standards Board (RSB) and Rwanda FDA	Track A	Regulatory Pathway	Provides Track A companies with pre-admission regulatory assessments and sandbox pathway guidance (see Program 1); assigns named regulatory contacts for each admitted company	Covered by sandbox unit (see Program 1 budget)
NIRDA	Track A and Track B	Technical and Facility Support	Provides technical assessment support; facilitates access to NIRDA testing and prototyping facilities for admitted companies; links Track B entrepreneurs to product development support	1 dedicated agri-food technology officer
RAB, RICA, UR/ACES	Track A and Track B	Pilot and Testing Facilities	Provides field trial sites, laboratory testing, and pilot production facilities under agreed access protocols; generates independent technical data from pilot programs	Access protocols to be agreed in Q1 2026; no dedicated staffing increase required
Business Development Fund (BDF)- now integrated in BRD	Track B	Early-Stage Finance	Provides grants and concessional loans to qualifying Track B innovators through a dedicated Food Innovation window; sets eligibility criteria and manages the award process	Existing BRD structure with dedicated food innovation window added
MINAGRI / FOBASI sites	Track B	Market Linkage and Adoption	Connects Track B innovators with MINAGRI's extension network and FOBASI food basket sites for pilot adoption; facilitates trials with smallholder farmer groups	Existing MINAGRI extension architecture
Rwanda Food Innovation Partnership (RFIP)	Both tracks	Coordination and Pipeline Tracking	Maintains the innovation pipeline across both tracks; facilitates handoffs between institutions; tracks SLA compliance; produces quarterly pipeline reports for ESC	1 pipeline and partnerships coordinator

Innovation Investment Accelerator

Table 25: Institution-wise roles for Innovation Investment Accelerator.

1. Sourcing	RDB international offices and RFIP identify target companies through sector databases, conference networks, and direct outreach; RDB publishes Rwanda's innovation offer on its investment website	Ongoing; quarterly outreach targets set	Qualified company contacts: expressions of interest received
2. Expression of Interest	Company submits a one-page EOI via RDB's Food Innovation Desk portal, covering company profile, innovation description, intended Rwanda scope	Company submits; RDB acknowledges within 3 business days	EOI registered; company assigned an RDB account manager
3. Qualification Assessment	RDB reviews EOI for alignment with Rwanda's four priority innovation domains; NIRDA reviews technical fit; RSB provides preliminary regulatory pathway assessment	20 business days from complete EOI	Written qualification outcome: qualified, qualified with conditions, not qualified (with explanation)
4. Rwanda Food Innovation Mission	Qualified companies are invited to a quarterly Rwanda Food Innovation Mission: a structured 3-day visit combining government meetings (MINAGRI, MINICT, RDB), facility visits (RICA, UR/ACES, RAB), and introductions to financing partners (KIFC, BRD, IFC)	Quarterly, companies qualify for the next available mission date	Relationships established with key institutions; facility access protocols initiated; sandbox application decision taken
5. Partnership Agreement	Companies committing to a Rwanda pilot sign a Partnership Agreement with RDB, specifying duration of engagement (minimum 18 months), co-investment commitments, data-sharing obligations, and expected pilot scope	30 days after Mission	Signed Partnership Agreement; company formally entered into RFIP pipeline
6. Sandbox Application	Company submits sandbox dossier to RSB (see Program 1); RDB assigned account manager facilitates communication with RSB and Rwanda FDA	As per Program 1 process: 90-day maximum from dossier completion	Sandbox authorisation issued
7. Pilot Program	Company conducts structured pilot in Rwanda under sandbox authorisation; anchor institutions provide facility access under agreed protocols; NIRDA provides technical support; RFIP tracks progress	18 to 24 months	Documented pilot results; safety and efficacy data; commercial viability assessment
8. Commercialisation	Companies with successful pilots are supported by RDB and KIFC to move to commercial operation; MINAGRI facilitates distribution through extension network for products targeting smallholder markets	12 to 24 months post-pilot	First commercial operation: employment created; revenue generation started; data reported to RFIP pipeline
9. EAC Scale	RDB facilitates introductions to EAC regional partners; RSB initiates mutual recognition conversations with neighbouring country regulators for sandbox-validated products	Year 3 onwards	EAC market entry for Rwanda-validated innovations

Table 26: Step-by-Step Process, Outputs and SLAs.

1. Open Call / Innovation Challenge	Publishing annual innovation challenges in each of Rwanda's four priority innovation domains; entrepreneurs submit applications	Annual cycle; first challenge Q3 2026	Applications received; shortlist of 30 to 50 per domain per year
2. Application Screening	NIRDA reviews technical merit; BRD reviews financial viability; joint committee selects 10 to 15 per domain per year for Accelerator intake	30 days from application deadline	Accepted cohort notified; feedback provided to all applicants
3. Product Development Support	Accepted innovators receive: NIRDA technical advisory support; access to NIRDA and anchor institution testing facilities; innovation vouchers	6 to 12 months	Product development milestones; prototype or early-stage commercial product

	(USD 2,000 to 5,000) for laboratory and testing services		
4. Regulatory Pathway Support	RSB assigns a regulatory navigator to each innovator; navigator guides the innovator through the applicable pathway (standard or sandbox)	Ongoing during product development	Regulatory compliance plan: application submitted to RSB or Rwanda FDA
5. Early-Stage Finance	BRD awards grants (USD 10,000 to 30,000) and concessional loans (USD 30,000 to 100,000) to innovators at the commercialisation stage; tailored financing instruments provide challenge grants (USD 10,000 to 50,000) for priority domain innovations	Award decisions within 45 days of application	Capital deployed; innovator has financing for first commercial production run
6. Market Linkage	MINAGRI links Track B products with FOBASI food basket sites and cooperative markets; NIRDA facilitates introductions to corporate buyers and distributors; PSF facilitates private sector partnerships	Ongoing; formalised linkages by Month 12	First sales; distribution agreement signed; pilot adoption by farmer group or cooperative
7. Alumni Network and Scale	Track B graduates join the RFIP alumni network; peer mentorship and learning events; introductions to international partners through Track A network	Year 2 onwards	Sustained businesses; regional market entry for strongest graduates

Table 27: Support for both Tracks.

Regulatory pathway	Dedicated sandbox fast-tracks with 90-day maximum assessment; named regulatory contacts; cross-recognition of international safety dossiers	Regulatory navigator assigned at no cost; sandbox access at standard process fee (USD 2,000 to 5,000)
Pilot facility access	Pre-negotiated access to RAB, RICA, UR/ACES facilities under agreed protocols; RFIP coordinates terms	Access to NIRDA testing facilities; innovation vouchers for laboratory services
Co-investment and finance	KIFC-facilitated co-investment matching; tailored challenge grants (USD 10,000 to 50,000); IFC and BRD introductions	BRD grants (USD 10,000 to 30,000) and concessional loans (USD 30,000 to 100,000); tailored challenge grants
Market linkage	EAC market access documentation; MINAGRI extension network introductions; RDB regional partnership facilitation	FOBASI site pilots; cooperative market access; PSF and MINAGRI network
Account management	Dedicated RDB food innovation account manager for the duration of the Partnership Agreement	NIRDA technical advisor; BRD relationship manager
Intellectual property	Rwanda IP law (2024) protections; guidance from RCIP on IP registration and commercialisation; data protection for first applicants under sandbox framework	Same IP protections; NIRDA IP advisory support

Table 28: Outputs, Outcomes and Responsible Institutions.

Q4 2026	RDB Food Innovation Desk established; Track A outreach launched; Track B innovation challenge designed	Rwanda has a visible, structured international offer for the first time	International companies can identify Rwanda as a structured destination	RDB; NIRDA
Q4 2026	First Rwanda Food Innovation Mission organised; 10 to 15 international companies engaged; Track B first open call published	Companies in active engagement with RDB account managers	Pipeline of qualified companies building toward AFSF	RDB; KIFC; RFIP
Q4 2026 (AFSF)	5 to 10 international companies in Partnership Agreements; 2 to 3 Track A sandbox applications submitted; 20 to 30 Track B entrepreneurs in Accelerator cohort	Rwanda launches at AFSF with visible proof of international engagement	Donor and investor confidence in Rwanda's operational capacity	RDB; RSB; NIRDA; BRD
End 2028	25 to 50 international companies engaged (Partnership Agreements); 20 to 30 Track B innovators having received finance; first Track A pilot results documented	USD 5 to 10 million in private and co-investment capital mobilised	Ecosystem commercially active; first innovations moving toward market	RDB; KIFC; BRD; RFIP

End 2030	100 to 150 companies having used the Accelerator (Track A and B); USD 30 to 50 million cumulative capitals mobilised; 50 to 70 commercial products from Track B	Rwanda recognised as East Africa's leading food innovation investment destination	Measurable increase in agricultural productivity and food system employment	RDB; KIFC; MINAGRI
End 2035	Self-sustaining Accelerator; private sector co-financing dominant; EAC-level replication of Rwanda model	Rwanda model adopted regionally; 500+ technology adopters across priority domain	Food security outcomes measurable at national scale	RDB; EAC; private sector

Table 29: Indicative Budget.

RDB Food Innovation Desk (2 officers, operating costs)	USD 400,000	USD 600,000	Government of Rwanda (RDB budget)
KIFC agri-food finance specialist and operations	USD 150,000	USD 250,000	Government of Rwanda / development partner
Track A company engagement (missions, outreach, matchmaking events)	USD 300,000	USD 400,000	Development partner / GoR
Track B innovation challenges and awards administration	USD 200,000	USD 300,000	Development partner / Financing Partner
BRD Food Innovation window (grants to Track B innovators)	USD 1,500,000	USD 3,000,000	Government of Rwanda / development partner
Tailored challenge grants (Track B)	USD 800,000	USD 2,000,000	Development partner
Anchor institution facility access preparation (protocols, minor upgrades)	USD 250,000	USD 200,000	Development partner
RFIP coordination function	USD 180,000	USD 250,000	Development partner
Total	USD 3,780,000	USD 7,000,000	Mixed sources (see above)

Annex 5: Consulted List

Steering Committee List

Name	Role / Institution
Hon. Telesphore Ndabamenya	Minister of Agriculture & Animal Resources (MINAGRI)
Hon. Paula Ingabire	Minister of ICT & Innovation (MINICT)
Hon. Jean-Guy Afrika	CEO, Rwanda Development Board (RDB)
Mr. Mauro de Lorenzo	Executive Director, Strategy and Policy Council (SPC), Office of the President
Hon. Solange Uwituze	Minister of State, MINAGRI
Hon. Yves Iradukunda	Minister of State, MINICT
Ms. Juliana Muganza	Deputy CEO, RDB
Prof. Jean-Jacques Muhinda	Regional Director, AGRA
Hon. Mark Bagabe	Former Minister, MINAGRI

Working Group List

Name	Role / Institution
Mr. Olivier Kamana	Permanent Secretary, MINAGRI
Mr. Eraste Rurangwa	Permanent Secretary, MINICT
Mr. Fiacre Mushimire	Director General, MINICT
Ms. Doreen Gashuga	Agribusiness Lead, RDB
Mr. Djibril Rushingabigwi	SPC, Office of the President
Ms. Chantal Ingabire	Director General, MINAGRI
Mr. Patrick Karangwa	Director General, MINAGRI
Mr. Sylvere Sirikare	Food Systems Coordinator, MINAGRI
Ms. Esther Kunda	Director General, MINICT
Mr. David Byabagamba	Strategic Planning Specialist, MINICT
Mr. Isaac Sagara	R&D Specialist, MINICT
Mr. Jean Paul Ndagijimana	Rwanda Country Director, AGRA
Ms. Lucia Zigiriza	Partnerships Lead, AGRA
Mr. Adam Gerstenmier	Managing Director, African Century Group
Prof. Alexandre Rutikanga	Former CTA, MINAGRI

Advisory Group List

Name	Role / Institution
Dr. Agnes Kalibata	Founder and Chair, C4Impact
Dr. Lawrence Haddad	Executive Director, GAIN
Dr. Sunita Pitamber	COO and Rwanda Country Director, Oath Africa
Mr. James Biseruka	Managing Director, Inyange Industries Ltd
Mr. CJ Fonzi	Co-Founder and COO, Africa Climate Ventures
Mr. Jesse Ratichek	Co-Founder & Managing Partner for Africa, Kinvest Partners
Ms. Sakina Usengimana	Chairperson, RYAF
Mr. Ivan Ntwali	Rwanda Country Director, Mastercard Foundation
Mr. Obai Kalifa	Deputy Director for Africa, Agricultural Development Program, Gates Foundation
Mr. Olivier Hecquet	Resident Representative, Lux-Development

~100 Global and Rwandan ecosystem leaders (list not exhaustive)

Private Sector	Academia & Applied Research	Implementing Partners	Development Partners
Africa Climate Ventures	African School of Governance	AGRA	Buffett Foundation
Aleph Farms	Carnegie Mellon University	C4IR	Development Bank of Rwanda
Bayer	Rwanda Institute for Conservation Agriculture (RICA)	Cenfri	FAO
BK Tech House	University of Rwanda	GAIN	EU
Cenfri	University of Greenwich	GGGI	Gates Foundation
DP World	Wageningen University & Research (WUR)	GoMuhazi/Brink	GIZ/BMZ
Africa Improved Foods		IDH	IFAD

Food Systems for the Future		One Acre Fund	Mastercard Foundation
GreenLight Biosciences		RYAF	Netherlands Food Partnership
Griffith Foods		Sight and Life	Rockefeller Foundation
Inyange Industries		TBI	UNDP
Kerry Group		World Economic Forum	UNICEF
Kuza			UNIDO
MTN			WFP
Oath Africa			World Bank/IFC
OCP			
Pepsico			
UPL			

Benchmarks and Surveys

Benchmarks	• 5+ global and African food innovation ecosystems (Canada, Kenya, Netherlands, Singapore, Switzerland, UAE, USA) • +10 initiatives and universities deeply involved in accelerating food innovation
Surveys	Surveyed 40+ Rwandan stakeholders in October 2025 on priorities for the design of Rwanda's emerging Food Innovation Ecosystem Strategy

Annex 6: Global Benchmark: Lessons from Singapore

Why Singapore

Singapore is a useful benchmark for Rwanda not because the contexts are identical, but because it demonstrates how a small country can translate national ambition into a coherent, delivery-oriented innovation system. Starting from high import dependence and limited land, Singapore combined policy clarity, targeted public investment, and strong institutional coordination to build a food innovation ecosystem with measurable outputs. The underlying approach remains relevant: set a clear mission, fund delivery instruments that move innovations to market, and coordinate the full pipeline from research to adoption and commercial scale.

Singapore's Approach

Singapore's strategy was anchored in a clear national vision to position itself as a leading location for food innovation, articulated through senior government leadership and reinforced through international platforms. The strategy was organised around three priorities (the "3 A's"):

- Advance agri-food R&D innovation
- Accelerate agri-food development under pro-business conditions.
- Access global markets

This framing treated research, enterprise enablement, and market access as one ecosystem agenda rather than separate initiatives. Publicly reported outcomes associated with this approach include robust growth in startup activity, increased regional deal share, rising agri-food export value, and increased levels of committed funding (Table 30). The central lesson is that progress was driven by an integrated system with coordinated leadership and capital mobilisation, not by isolated programmes alone.

Table 30: Reported outcomes associated with this approach.

Indicator	Reported value	
Startup Growth	(15 in 2010 → 85 in 2024)	467%
APAC Deal Share	Singapore now captures nearly a quarter of all Asia-Pacific agri-food venture capital deals	23%
Export value	Agri-food exports more than doubled from USD 5.16 to USD 11.1B	USD 11.1B
Funding committed	R&D and project funding surged from USD 25M+ to over USD 300M+	USD 300M+

Institutional Coordination

A defining feature of Singapore's ecosystem development is coordinated leadership within the Ministry of Trade and Industry, supported by two complementary institutional anchors: one oriented to enterprise development and ecosystem enablement, and one oriented to applied research and translation. Together, these anchors reduced fragmentation by linking applied research capabilities, enterprise support, and investment pathways into a navigable system for firms and investors.

In Rwanda, comparable functions are currently distributed across institutions. MINAGRI and MINICT play important leadership roles, but there is no single enterprise-facing anchor equivalent to Enterprise Singapore and no single applied research coordination anchor equivalent to A*STAR for food innovation. This distribution of responsibilities can make it harder to align research, incubation and acceleration support, financing, and market pathways into a coherent pipeline.

Phases: How Singapore Built the Ecosystems Over Time

Singapore's experience illustrates that food innovation ecosystems are built in phases. The relevance for Rwanda is the sequencing: strengthen foundations first, then formalise coordination, then use regulation and finance to scale, and finally invest in shared infrastructure that converts research into market-ready production.

Phase 1: Build comparative advantage and embed innovation in the national system (2000 to 2017)

Singapore focused on embedding food innovation within the education, research, and enterprise system before attempting ecosystem scale-up. This was delivered through three mutually reinforcing tracks: building specialised food-science talent through universities and polytechnics; strengthening research collaboration across food science, nutrition, and public health; and supporting SME innovation through applied centres and pilot facilities. This phase also illustrates the value of a central mechanism for prioritising research and development investment. In Singapore, the National Research Foundation Coordinates R&D investments in line with national priorities, aligning talent, applied infrastructure, and financing around a shared direction. As capability foundations strengthened, Singapore leveraged anchor finance to accelerate ecosystem formation and crowd in additional investors. Temasek began deliberate food and agriculture investing around 2013 and, between 2013 and 2021, built a global agri-food portfolio of approximately USD8 billion across the farm-to-fork value chain. By 2021, its role expanded beyond investment to supporting platforms and convenings that strengthen networks and investment pipelines, including the Asia Sustainable Foods Platform, Singapore International Agri-food Week, and the Asia-Pacific Food innovation Summit.

Phase 2: Build a coordinating network to orchestrate collaboration (FoodInnovate, established 2018)

Singapore formalised collaboration through FoodInnovate (established in 2018) to reduce fragmentation and make the system easier for firms to navigate. FoodInnovate connected research, regulation, skills development, industry needs, and innovation support through a structured coalition that included regulators (such as the Singapore Food Agency), research institutions (including A*STAR and applied centres such as SIFBI), education institutions (including NUS and polytechnics), industry associations (including the Singapore Food Manufacturers' Association), and innovation centres and accelerator-linked programmes. The value of this model was not a new layer of coordination, but a delivery-oriented architecture that held multiple actors to shared goals and kept the pathway moving from research to commercial application. As the ecosystem matured, the financial sector also deepened, with increasing emergence of venture and investment platforms focused on food-tech and agri-tech, supported by the demonstration effect of anchor investors, an enabling business environment for financial services, and strong talent availability.

Phase 3: Build global positioning through policy, regulation, and outward-facing platforms (2018 to 2020).

Singapore strengthened its global positioning as a testbed and launchpad through a combination of outward-facing partnerships and regulatory clarity. This included international collaboration platforms such as the Singapore Shizuoka Agri-Forum (2018), and the introduction of a Novel Food Regulatory Framework (2019) that created clearer approval pathways for companies developing innovative products. Singapore also strengthened its ecosystem-facing enterprise support through the GROW Accelerator (2019), founded by Enterprise Singapore with support under the Startup SG Accelerator initiative, with AgFunder as a key partner. In 2020, Singapore became the first country to authorise the commercial sale of cultivated meat, signalling a facilitative regulatory posture and strengthening investor confidence in the country as a credible location for next-generation food innovation.

Phase 4: Support the full innovation pipeline and apply it to national priorities (2020 onwards).

Singapore treated innovation as a full pipeline and aligned it directly to national priorities, linking mission-led R&D with adoption and scale-up. This included the launch of A*STAR's Singapore Institute of Food and Biotechnology Innovation (SIFBI) in 2020 to consolidate capability and reduce institutional siloes, and the alignment of public R&D funding through the Singapore Food Story R&D Programme (2021) toward priority themes such as sustainable production, future foods, and food safety science. Adoption was reinforced through the Agri-Food Cluster Transformation Fund (2021), supporting farms to implement advanced technologies and systems across the farm-to-fork value chain. More recently, Singapore has focused on the "lab-to-market" bottleneck by building sub-sector specific one-stop shops and shared infrastructure that reduce time-to-market and capital intensity, including the Urban Agriculture Centre of Innovation (2022), ScaleUp Bio (2022) providing contract development and manufacturing services for microbial precision fermentation, and SIFBI food processing and fermentation labs (2024) bridging bench-scale research and pilot production.

Annex 7: Principal Actors Relevant Rwanda's Food Innovation Ecosystem

Table 31 maps the thirteen principal institutions relevant to Rwanda's food innovation ecosystem. For each institution, it sets out the legally established mandate and identifies the specific catalytic functions that fall outside that mandate. The analysis draws on establishing laws, presidential orders, and official institutional websites. Gap analysis is based on landscape evidence, stakeholder consultations, and benchmarking against global food innovation ecosystem requirements.

Table 31: Principal actors relevant to Rwanda's food innovation ecosystem, catalytic function gap

Institution	Mandate	Functional gaps relevant to food innovation
Policy & Sector Stewardship		
Ministry of Agriculture and Animal Resources (MINAGRI)	"To initiate, develop and manage programmes for the transformation and modernisation of agriculture and livestock, ensuring food security, agricultural export diversification, and contribution to the national economy." (MINAGRI official mission). Sets sector policy and oversees RAB and NAEB.	MINAGRI sets sector policy and coordinates its agencies, but the functions food innovation specifically requires, dedicated financing, intelligence on what innovations is working, brokering of specialised expertise, fall outside what a policy ministry is built to do. No unit is currently mandated or resourced to fill that gap
Ministry of Trade and Industry (MINICOM)	Formulates and implements trade and industrial development policies, promotes private sector competitiveness and exports. Oversees NIRDA and RICA; leads the Made in Rwanda initiative.	MINICOM drives industrial policy across all sectors but does not mobilise food-innovation-specific finance, produce market and technology intelligence for food-tech ventures, or broker the specialised agri-food expertise that would translate industrial policy into innovation outcomes.
Ministry of ICT and Innovation (MINICT)	To develop and oversee policies in information and communications technology and innovation, including digital public infrastructure, national data governance, AI strategy, and the broader national innovation ecosystem.	MINICT provides the digital and innovation policy framework that runs across all sectors, an important foundation. The gap is at the application layer. Data assets like AMIS and Smart Nkunganire hold real intelligence about the food system but converting them into actionable knowledge for food innovators is not part of MINICT's operating model. The cross-cutting mandate does not reach into the food innovation vertical
Research, Science & Technology		
Rwanda Agriculture and Animal Resources Development Board (RAB)	To develop agriculture and animal resources through research, agricultural extension, and animal resources extension in order to increase agricultural and animal resources productivity and quality, as well as their derived products.	RAB generates and extends agricultural technologies. The disconnect is commercial: no financing exists to help firms license, prototype, or scale what RAB develops; no tracking of which research outputs are being adopted, and which are sitting unused; no active brokering between RAB researchers and the investors or commercial partners who could take those outputs further. Good research is being produced.
National Council for Science and Technology (NCST)	To advise the Government on policies, legislation, and regulation in the fields of science, technology, research, and innovation, and to monitor their implementation. NCST manages the National Research and Innovation Fund (NRIF) with over RWF 4.5 billion committed across 100+ projects.	NCST administers the NRIF across all sectors, including food. But the fund is not designed with food innovation in mind: no sector-specific instruments, no tracking of whether funded food research is reaching commercial application, and no deliberate connection between researchers and the industry partners who would need to take their work to market. The money is there; the targeting and follow-through are not
National Industrial Research and	To lay a solid foundation for a structural shift in industrial development by producing competitive goods and services through	NIRDA supports individual firms with technology upgrading and provides shared labs, including food processing facilities. It does not offer financing

Development Agency (NIRDA)	technology and innovation. NIRDA supports firm-level competitiveness through technology monitoring, acquisition, transfer, applied research, and SME upgrading, with focus areas including food processing (NIRDA website; under MINICOM).	designed for food innovation (such as early-stage grants for new product development or co-investment to help food ventures scale), produce intelligence on the food innovation pipeline beyond its own programme beneficiaries, or systematically bring in international food science or commercial expertise to serve food innovators across the ecosystem.
Rwanda Environment Management Authority (REMA)	To coordinate environmental management and ensure sustainable use of natural resources. Provides environmental policy, standards, and impact assessment frameworks.	Not currently mandated to provide pre-market environmental advisory to food innovators. Gap: proactive engagement at the product development stage.
Rwanda Space Agency (RSA)	To develop and promote use of space science and technology for Rwanda's socioeconomic development: satellite data, remote sensing, geospatial analytics.	RSA data assets not currently accessible to agri-food innovators in a structured way. Gap: data access protocol between RSA and RFIP/RAB needed.
Regulation, Standard & Consumer Protection		
Rwanda Standards Board (RSB)	To provide standards-based solutions for consumer protection and trade promotion. RSB develops and publishes national standards, provides conformity assessment (testing, certification, accreditation), and metrology services.	RSB develops standards and certifies products. What is missing for food innovators is earlier engagement. Firms developing new product – foods, novel ingredients, alternative proteins – currently have little visibility into which standards apply, how long certification will take, or whether technical support is on offer. A pre-market advisory function or simplified fast-track for novel foods would make a significant difference; neither currently exists.
Rwanda Food and Drugs Authority (Rwanda FDA)	To protect public health through regulation of human and veterinary medicines, vaccines, biological products, processed foods, poisons, medicated cosmetics, medical devices, household chemical substances, and tobacco products.	Rwanda FDA regulates processed food safety and controls food imports and exports. It does not provide pre-market advisory services for food innovators developing new product categories (such as fortified foods, alternative proteins, or novel ingredients), nor does it offer structured engagement during the product development phase. Innovators working on new food products currently have limited ways to get early regulatory guidance before submitting for approval, which increases costs, time, risks, and uncertainties.
Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA)	To carry out inspection of quality and standards conformity and promote healthy competition in the economy by prohibiting unfair business practices as well as ensuring consumer protection. RICA handles agricultural input inspection, market compliance, and SPS coordination.	RICA's mandate kicks in at the enforcement stage, products already on the market, compliance already in question. Food innovators encounter RICA when something goes wrong, not at the design stage when upstream guidance on quality, SPS, and safety requirements would actually change outcomes.
Rwanda Development Board (RDB)	To accelerate Rwanda's economic development by enabling private sector growth. RDB provides one-stop-shop services for business registration, investment promotion, deal negotiation, export and SEZ development, tourism and conservation, and private sector skills development.	RDB promotes investment across all sectors and provides useful facilitation services. The food innovation gap is about what a cross-sector mandate cannot do. There is no food-innovation-specific financing within RDB, no intelligence on which food ventures exist and what they need, and no active effort to recruit international food science expertise for Rwandan innovators. Food innovation needs sector-specific attention that RDB's design does not accommodate.
Development Bank of Rwanda (BRD)	To finance Rwanda's long-term development, with a focus on manufacturing, agriculture, infrastructure, energy, affordable housing,	BRD's instruments (loans, credit guarantees, matching grants) are built for businesses with track records and collateral. That is the right design for

green finance, and export growth. BRD now integrates BDF's former SME support services including credit guarantees, matching grants, and business advisory services.

established sectors. It leaves food innovators at early stages without suitable options: no small grants for product testing, no patient capital that allows time for R&D and regulatory clearance, no shared-risk financing for first commercialisation. The gap is not a failing of BRD; it is a market structure problem that requires entirely different instruments.

Export Development & Private Sector Representation

National Agricultural Export Development Board (NAEB)

To facilitate the growth of business and diversify agriculture and livestock commodity export. NAEB implements policies to promote and develop agricultural and livestock export products across coffee, tea, horticultural crops, and other commodities.

NAEB develops export markets for established agricultural commodities (coffee, tea, horticulture). It does not finance the development of new food products, generate intelligence on how innovative food products could access regional and international markets, or connect food innovators with the technical expertise needed to make new products export-ready.

Private Sector Federation (PSF)

To represent and serve the interests of the entire private sector through lobbying and advocacy, while at the same time providing timely and relevant business development services that lead to sustainable private-sector-led economic growth and development.

PSF advocates for the private sector and provides general business development services. What it is not designed to do is mobilise financing for food innovation, generate structured intelligence on what food companies actually need to invest in new products, or connect firms with specialised food science and commercialisation expertise. Private sector demand for food innovation support exists, it is just not captured or acted upon anywhere in a structured way

Sources: Institutional mandates drawn from establishing laws, presidential orders, and official institutional websites (MINAGRI, RAB, NAEB, RDB, NCST, NIRDA, RSB, Rwanda FDA, RICA, MINICOM, MINICT, BRD, PSF). Gap analysis based on landscape evidence, stakeholder consultations, and benchmarking against global food innovation ecosystem requirements.

Annex 8: Core Consulting Team

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