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Innovating for 2.5 Billion Plates by 2050

Orthodox and unorthodox ideas for scaling agriculture & food innovation in Africa to improve incomes, nutrition & planetary health

Delta 40 novo nordisk foundation BI BioInnovation Institute

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Acknowledgments
This action paper was prepared by Delta40 as part of our Agriculture & Food Innovation Program partnership with Novo Nordisk Foundation and the BioInnovation Institute. It is designed to move beyond analysis and provide tangible opportunities and a roadmap for action, identifying high-impact agriculture and food innovations along with the investment opportunities, strategic partnerships, and ecosystem initiatives needed to scale them. By focusing on solutions that can reach over 10 million customers, driving profitability, facilitating exits, and creating widespread impact, this paper serves as an impetus for meaningful change in the sector.

The insights and recommendations presented are informed by a diverse group of stakeholders who joined us during the Innovation Program and Scale Summit. Participants included early-stage ventures, growth-stage companies, investors, catalytic capital providers, corporate strategics, and policymakers who all committed to advancing agricultural transformation in Africa. The collective expertise and engagement have shaped this action paper, ensuring that it is grounded in real-world experiences and designed for immediate action.

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novo nordisk
foundation

The Novo Nordisk Foundation is a Danish foundation that supports scientific, humanitarian, and social causes. It has been a part of the heritage of the Novo Nordisk Foundation for almost a century to support fundamental research and the development of novel technologies that have the potential to benefit people and society. Building on this legacy, the Foundation aims to increase its support for building an ecosystem that is needed for excelling within the life science and sustainability areas, and to help solve some of the major challenges facing us in the future.

Website: https://novonordiskfonden.dk/

BII BioInnovation Institute

BioInnovation Institute's vision is to support world-class life science innovation that drives the development of new solutions by early-stage life science start-ups for the benefit of people and society. BII offers early-stage funding, business development support, lab- and office infrastructure as well as providing a global network to start-ups in its portfolio. The aim is to help the entrepreneurs develop and mature their research projects to the point where they can attract crucial capital investment and thus contribute to the development of new solutions within bioindustrials, health-tech, and therapeutics.

Website: https://bii.dk/

Delta 40
VENTURE STUDIO

Delta40 is a Venture Studio, VC Fund & Ecosystem Builder. We are a team of experienced Founders, investors, and operators investing in and supporting the next generation of top African and Female entrepreneurs building life-changing innovations from idea to pan-African impact. Our mission is to build, invest in, and scale innovative ventures to improve livelihoods and tackle climate change in Africa.

Website: https://www.delta40.com/

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Executive Summary

Africa holds immense potential to become a global leader in agricultural innovation and food security, with 60% of the world's arable land and a population projected to double to 2 billion by 2050[1]. The continent has the resources to not only feed itself but also play a critical role in feeding the world's projected 10 billion people. Yet, despite these opportunities, Africa remains a net importer of food, with challenges in climate variability, limited market access, and underinvestment in innovation.

This is not a traditional white paper–– it is an action paper designed to offer clear insights and practical pathways for various stakeholders to engage, support, and partner within agriculture. It combines contextual understanding with actionable recommendations to ensure that all stakeholders can identify specific opportunities to drive change.

This paper is based on a combination of primary and secondary research, incorporating insights from interviews, panel discussions, and roundtables held during the 2024 AgTech Scale Summit and in the months following. It reflects perspectives from startups, investors, corporates, and other ecosystem players, alongside data from key industry reports, including the Africa AgriFoodTech Investment Report 2024, McKinsey, FAO, and the World Bank.

This action paper invites all players within the Ag and FoodTech ecosystem to move beyond conversation and actively contribute to Africa's agricultural transformation by unlocking investments, forming partnerships, and catalyzing innovations.

Recommendation		Data Informing Recommendation
Bridge the Gap Between Research and Commercialization with Innovation Programs and Partnerships *Key stakeholders: Philanthropic donors, academic institutions, funds and studios*	1. Establish commercialization pathways through university-based incubators 2. Increase grant funding to support early stage innovation through venture studios or funds 3. Governments and philanthropic organizations should Invest in research infrastructure and advanced training	Africa spends on average 0.45% of its GDP on research and development (R&D), which is significantly less than the global average of 1.7% and the African Union's target of 1%[2]. Africa generates only 0.6% of global patents despite having 17% of the world's population[3]
Leverage the Venture Studio Model to Provide Operational Expertise and Embedded Technical Assistance *Key stakeholders: LPs, GPs and philanthropic donors*	1. Increase investment in venture studio models 2. Deploy capital into venture studio models providing embedded industry expertise 3. Fund research on venture studios in Africa that can help educate funders and the market to understand this new asset class, its implementation, and impact 4. Structure dedicated funds for those launching venture studios or those launching less traditional fund models similar to Mastercard's fund for first time fund managers 5. Provide concessionary capital that will help make it easier for LPs to come into less conventional models	Venture studio-backed startups show 30% higher 3-year survival rates relative to traditional startups. Additionally, 84% of startups from Studios successfully raise a seed round, and 72% make it to Series A, compared to 42% of traditional ventures.[4]
Increase Pool of Blended Capital for Early-Stage Ag Ventures *Key stakeholders: Funds and philanthropic donors*	1. Create blended finance facilities with concessional rates for local currency debt, and results-based financing 2. Mobilize philanthropic first-loss capital to de-risk early ag ventures 3. Provide grants for R&D activities	AgTech receives only 4.69% of total VC funding (vs Fintech's 46.37%) in Africa[5] Across Africa, bank interest rates are 15-30% APR with strict collateral requirements[6]
Strengthen Corporate - Start-Up Collaboration to Align on Product Fit and Potential Exit Pathways *Key stakeholders: Corporates, start-ups, philanthropic donors*	1. Create ecosystem engagements that intentionally connect corporates with start-ups and facilitate collaboration 2. Fund capacity-building for startups and create corporate readiness programs to navigate corporate processes 3. Implement risk-sharing mechanisms for pilot projects between corporates and start-ups	Less than 1% of global VC goes to African startups despite growth potential[7] Deals from commercial funders and ESOs saw biggest drop, by about 43%[8]
Leverage Philanthropic Capital to De-Risk Innovation & Drive Adoption of New Critical Technologies *Key stakeholders: Philanthropic donors*	1. Provide capital that funds research to develop new tech and products 2. Subsidize the cost of new technologies and products to make them more accessible and to accelerate adoption 3. Fund extension to educate farmers on new offerings to reduce resistance and increase adoption	Agricultural technology adoption rates remain low despite proven benefits to farmers Farmer education and extension services access positively correlate with adoption of agricultural technologies across multiple studies
Accelerate Pan-African Expansion with Catalytic Capital and Technical Assistance *Key stakeholders: Philanthropic donors, debt funders*	1. Develop regional expansion playbooks covering regulatory processes 2. Create repayable grant facilities to subsidize market entry costs 3. Pair funding with access to local expertise and market entry support 4. Lobby governments to reduce barriers to market entry	Regulatory fragmentation leads to costly compliance issues, with resources being drained away from more productive areas Extreme market concentration (55% of deals in 4 countries) suggests systematic expansion barriers
Drive Strategic Partnerships & M&A Between Start-Ups to Accelerate Growth & Market Expansion *Key stakeholders: Start-ups, growth stage companies, funders*	1. Funders can promote joint ventures, mergers, and strategic partnerships between start-ups in their portfolios 2. Support creation of special purpose vehicles (SPVs) and structured collaboration models that allow companies to expand geographically, integrate complementary products, or co-invest in shared infrastructure 3. Deploy "Collaboration Capital" to de-risk partnerships 4. Create incentives for shared infrastructure	Only 121 out of 217 AgTechs met basic maturity criteria across 7 African countries[9] 70% of AgTech funding concentrated in Kenya alone, showing regional competition challenges Customer acquisition remains costly - successful models heavily rely on expensive field agents for farmer onboarding[10]
Scale Proven Innovations with Results-Based Financing *Debt funders, philanthropic funders*	1. Create large pools for RBFs and concessional debt to support scaling of growth stage companies with proven, impactful solutions 2. Offer affordable local currency concessional debt for investment in infrastructure required to scale	Results based financing has been tested but has been unreliable, on-and-off, preventing companies from using this tool to scale

01

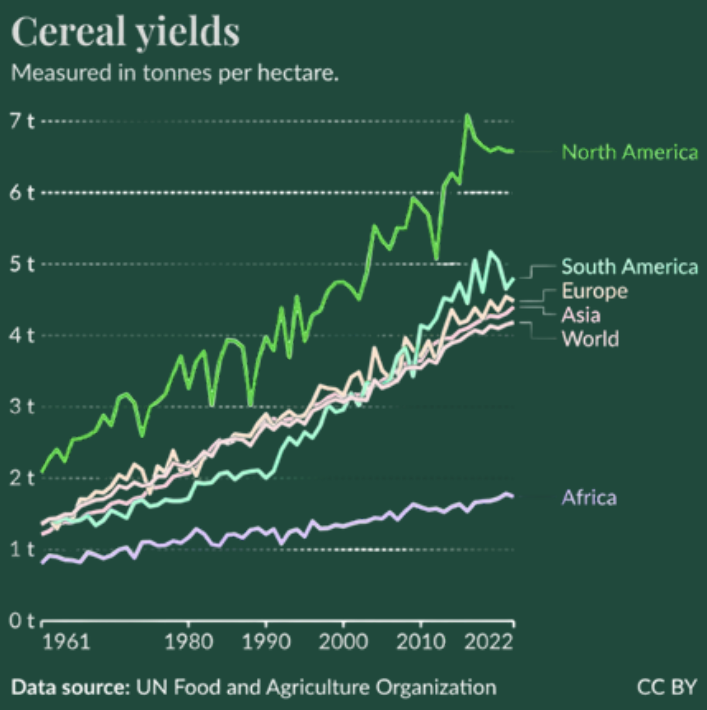
Overview

This section provides a comprehensive introduction to the action paper, setting the stage with the critical context of agriculture and food in Africa. It highlights the continent's vast agricultural potential, the challenges smallholder farmers face, and the opportunity for innovation to drive growth, food security, and climate resilience. Additionally, it also delves into the collaborative process behind this paper, detailing the engagement with diverse stakeholders who contributed their insights and expertise during the Scale Summit.

Context

Africa's agricultural potential far outpaces most other regions of the world. The continent is home to 60% of the world's arable land, with smallholder farmers making up 60% of the population and contributing a substantial share of GDP (23% in sub-Saharan Africa alone)[11]. As Africa's population grows (projected to double to 2Bn people by 2050), so will its food and agriculture demand, which is projected to surge from $280Bn in 2023 to $1Tn by 2030.

Yet despite this immense potential, productivity remains limited, and Africa continues to be a net food importer. For example, as indicated in the chart below, while global cereal yields have tripled since 1961, Africa's productivity has not kept pace. With an average yield of just 1.7 tonnes per acre— well below the global average of 4.2 tonnes per acre, the gap is stark[12].



If we can improve Africa's agricultural productivity to just reach global averages, Africa will be well on its way to feeding the continent and reaching its incredible potential to feed the world - but this cannot happen unless we begin to embrace rapid innovation within the sector. We have the opportunity—and imperative—to catalyze African innovations and business models to fill 2.5 billion African plates each day with farm-fresh and nutritious foods. But the opportunity extends far beyond feeding Africa alone. As the continent grows to represent 40% of the global population, Africa is poised to become a critical player in feeding a world that will reach 10 billion people by 2050. The continent's ability to export food to global markets represents an unparalleled economic and strategic opportunity.

Investing in agricultural innovation and growth in Africa is essential for global investors, policymakers, and consumers —whether or not they are directly based in or focused on Africa. By prioritizing this sector, stakeholders can drive inclusive growth, create millions of jobs, and contribute to climate-positive development while addressing one of humanity's most pressing challenges: securing a sustainable global food system.

The Current State of Africa's Agriculture Sector

We are publishing this action paper in the wake of drastic cuts to USAID's funding and work in Africa, which severely impacts Feed the Future and other programs supporting Africa's agriculture sector. Other major donors such as the United Kingdom and The Netherlands have also announced reductions in their foreign aid budgets. While the full impact of these actions is still unfolding, we anticipate that, given development capital's crucial role in de-risking and attracting private investment, Africa will face funding shortfalls and constrained private sector growth in the short term. In addition, development capital has played a critical role in addressing many of the challenges outlined below so progress in these areas will likely slow down as we adjust to a new reality.

Although unprecedented, these changes in the funding and development landscape only reinforce the urgency of this action paper and the recommendations outlined in it. Now more than ever, collaboration between the private sector, government, philanthropic capital facilitators, and other key stakeholders is essential to drive and scale innovations that address these challenges.

This table highlights the key challenges and opportunities in Africa's agricultural sector for investment and large-scale transformation.

CHALLENGE	OPPORTUNITY
Funding Gap A $200B annual funding gap and high debt service costs hinder investment in agriculture in Africa.	Scaling blended finance facilities can mobilize private capital to close the funding gap, unlocking $50 billion annually in agricultural investments [13]
Lack of Structured Markets 60% of smallholder farmers lack access to structured markets, relying on informal systems with lower prices and inefficiencies. Smallholder farmers in Africa lose an estimated 15-25% of potential earnings due to inefficiencies and price asymmetries in informal market systems.	Stakeholders have a $50 billion annual market opportunity to unlock value for both farmers and buyers across Africa's agricultural ecosystem.[14]
Underinvestment in R&D Africa invests less than 0.5% of its GDP in agricultural R&D, compared to the global average of 2.62%.[15]	Investment in scientific and innovative products and business models in Africa in addition to increasing R&D investments to 1% of GDP (equivalent to ~$28B billion)
Regulatory Hurdles Complex and inefficient regulations hinder cross-border trade, investment, and agricultural innovation.	Establishing regulatory frameworks through regional bodies like COMESA can facilitate trade and reduce costs, unlocking $60 billion in additional market value.[16]
Post-Harvest Losses / Value Creation Africa loses about $48B worth of food annually due to inadequate storage and processing infrastructure.	According to the World Bank, post-harvest technology could create a $50B market while reducing food waste by up to 30%.
Intra-African Agriculture Trade Remains low Intra-Africa trade remains low which limits economies of scale.	Increasing trade within Africa requires investment in regional infrastructure and trade facilitation mechanisms. The African Continental Free Trade Area (AfCFTA) is a key initiative with the potential to increase intra-African agricultural trade by 20–30% by 2040, according to the United Nations Economic Commission for Africa (UNECA).
Low Irrigation Use Less than 5% of cultivated land is irrigated, limiting productivity and making agriculture highly vulnerable to climate shocks.	Investing in irrigation infrastructure could unlock a $50 billion market, increasing yields by 50–100% in water-scarce areas.[17]
Lack of Inputs Access Fertilizer prices have tripled since 2020 and application on the continent averages only 17 KG/ha compared to global averages of 135 KG/ha.	The current size of the fertilizer market is estimated at $15.28B USD and is expected to reach $20B by 2030[18] which presents an immense untapped potential.
Poor Soil Health 65% of arable land suffers from soil degradation, leading to reduced fertility and crop yields.	Innovations in soil health, such as biofertilizers and soil mapping tools, could reclaim 120 million hectares of degraded land, increasing yields by 30–50%[19]

Methodology

This paper is informed by a combination of primary and secondary research, leveraging insights from key stakeholders in the AgTech ecosystem alongside market data and industry reports.

Primary Data Collection:
The primary insights were gathered through individual interviews, expert panel discussions, and roundtable sessions conducted during the AgTech Scale Summit and in the months following. The paper reflects perspectives from startups, growth-stage companies, investors, corporates, and other ecosystem stakeholders actively engaged in Africa's agricultural innovation landscape. These conversations provided firsthand experiences on challenges, opportunities, and potential pathways for scaling AgTech solutions across the continent.

Secondary Research:
To complement these insights, the paper draws from a range of industry reports and data sources, including the Africa AgriFoodTech Investment Report 2024 (AgFunder), McKinsey's "Winning in Africa's Agricultural Market", the FAO's "State of Food and Agriculture" (2022), World Bank datasets (2022), and the African Union's Agenda 2063 Report. These sources offer valuable context on investment trends, market dynamics, and policy frameworks shaping agricultural transformation in Africa.

Analytical Approach:
The research primarily employs qualitative methods, synthesizing themes from stakeholder discussions and industry reports to identify key barriers and opportunities for scaling AgTech. Additionally, quantitative insights from investment data, market size estimates, and case studies were incorporated to ground the findings in broader economic and financial trends. While the paper is focused on Africa, global comparisons are included where relevant to highlight lessons learned and potential models for adaptation.

Driving Innovations and Investment in Agriculture: Partnering for Growth

We need to think and act differently if we are to solve pressing and interconnected global challenges such as food insecurity and climate change. We need innovation, and new ways of bringing such solutions to the market that both ensure business sustainability and large-scale societal impact. For this to happen, we need to address traditional hurdles on the path to these unique innovations in the geographies and ecosystems where there is potential to make a major difference. Further, increased collaboration across ecosystems will be essential to making a significant impact.

Approach

Delta40, the Novo Nordisk Foundation, and the BioInnovation Institute partnered to launch the Ag & FoodTech Innovation Program and Scale Summit in October 2024. The goal of partnering on this program was to:

- Catalyze and accelerate new Ag and Food-Tech innovations in Africa
- Increase equity, debt and grant investment in this ecosystem
- Increase technical understanding & innovation in these sectors in Africa
- Create deeper partnerships between entrepreneurs, policy makers, and corporates in the ecosystem to take proven innovations to scale

The innovation basecamp brought together 33 ventures from East Africa and Nigeria for 10 days to workshop their product, develop new business models and partnerships, & raise capital to grow. Designed with valuable insights from founders, investors, and successful innovation programs, our goal with this program is to turn agriculture and food ventures into commercial businesses, empower exceptional founders, and bridge critical gaps in technology, capital, support, and expertise. Our unique programming focuses on:

- Venture Building: Ventures received tailored support and training from Delta40's full team of C-Level, entrepreneurs in the ecosystem, investors, and operators. We support companies across strategic advisory, commercial strategy & go-to-market, product development, talent, finance, fundraising, and capital strategy, data and insights, and impact monitoring and measurement.
- Delta40 Ecosystem: As the proverb goes, it takes a village to support an entrepreneur from idea to scale. Delta40 has built a unique ecosystem of entrepreneurs, investors, corporate partners, top talent, thought leaders, experts, foundations, and other ecosystem actors to support entrepreneurs along their journeys.
- Masterclasses and Workshops led by Entrepreneurs and Operators: During the 10 days, we had Immersive workshops, field visits and founder panels designed to accelerate problem discovery, customer validation, and business model innovation.

Building on the insights and opportunities uncovered through this program, this action paper aims to:

- Identify high-impact innovations that can transform African agriculture
- Highlight tangible investment opportunities and strategic partnerships to accelerate innovation
- Stimulate new investment, mergers, and acquisitions to drive sustainable growth
- Inspire collective action to address challenges and seize opportunities

Program and Scale Summit Outcomes

- 180+ attendees representing a cross-section of the ecosystem
- 64 Founders participated across early-stage and growth-stage companies
- $100K in grant capital awarded to 7 teams
- 30+ corporate partnership meetings tailored to growth and early-stage companies seeking strategic collaborations.
- 100+ curated 1:1 deal room meetings facilitated direct connections between investors and companies

Delta40 AgTech Scale Summit

We leveraged our unique ability to convene top leaders across the ecosystem and created an environment that fosters deep collaboration. Bringing together over 180 senior leaders for our inaugural AgTech Scale Summit, we prioritized investment and partnerships to scale Africa's most promising AgTech innovations

02

Insights

These insights were gathered from workshops, panels, and in-depth conversations with ecosystem players during the Scale Summit. They reflect the collective experiences and expertise of startups, investors, corporates, and development organizations working in Africa's AgTech sector.

To bridge the gaps within the agriculture sector and unlock the full potential of innovation, it is essential to define clear, actionable steps for every stakeholder group which includes startups, corporates, investors, donors, and policymakers. Though they cannot touch on every challenge outlined earlier in this paper, these actionable recommendations aim to address specific challenges, align efforts, and accelerate progress in agriculture on the continent.

1

Bridge the Gap Between Research and Commercialization with Innovation Programs and Partnerships

Key stakeholders: Philanthropic donors, academic institutions, funds and studios

Academic research commercialization in Africa shows a significant gap compared to global benchmarks. According to the African Academy of Sciences, less than 1% of African university research results in commercial applications, compared to 4-5% in developed economies. The World Intellectual Property Organization (WIPO) reports that Africa generates only 0.6% of global patents despite having 17% of the world's population, indicating a critical gap in translating research into commercial innovations. Unlike in other global regions where research institutions have well-established pipelines to spin out startups, African researchers often lack the funding, mentorship, and business development support needed to turn discoveries into scalable ventures. The Summit highlighted the need for stronger collaboration between research institutions, investors, and commercial partners to bridge this gap.

Recommendations

1. Establish commercialization pathways through university-based incubators and elevate the quality of Agtech curriculum, integrating cutting-edge developments in the field.
2. Increase grant funding to support innovation programs through venture studios or funds
3. Governments and philanthropic organizations should Invest in research infrastructure and advanced training
4. Establish structured commercialization pathways for scientific and technical innovations by funding university-based incubators, venture-building programs, and industry partnerships that connect researchers with commercial founders. Support applied research that aligns with market needs and provides researchers with access to business development, investment, and mentorship. Run more innovation programs with meaningful grant funding to stimulate technical and scientific innovation in ag and food in Africa
5. Philanthropic capital and corporates can support the development of research capacity at African institutions to increase the breadth, depth, and quality of scientific output. This can include i) investing in infrastructure and resources e.g. funding for state-of-the-art laboratories, research facilities, and access to scientific journals and databases, ii) funding advanced training and mentorship ie programs that offer advanced degrees, technical training, and mentorship opportunities for African researchers,with focus on creating industry collaboration. Universities and their innovation hubs should facilitate partnerships with agri-industrial companies through mechanisms like industrial PhD programs or joint research projects to create practical applications iii) cultivating networks by funding grants for collaborative projects, conferences, and exchange programs to foster partnerships between African researchers and international scientific communities

Delta40 is addressing the gap between research and commercialization through its upcoming innovation program, developed in partnership with the Lemelson Foundation. This program aims to bring together technical founders, PhDs and commercial founders, fostering collaboration to develop market-ready solutions.

Oxford University Innovation is a subsidiary of the Oxford university that supports staff commercializing their research including fundraising, licensing deals, creating linkages with partners. This is an approach that universities on the continent could take to think about how to build internal institutional capacity.
Other organizations working to highlight the potential of research-to-market pathways to transform innovation ecosystems in Africa:

- Mawazo Institute empowers African women researchers to translate their academic work into practical solutions.
- Villgro Africa supports innovations in health and life sciences by linking researchers with funding and business development resources.
- Stanford Biodesign has partnered with African institutions to adapt its design-thinking approach to the local context, equipping researchers and entrepreneurs with tools to develop and commercialize impactful innovations.
- The Kenya National Innovation Agency (KeNIA) is a State Corporation established under the Science, Technology and Innovation (STI) Act, No. 28 of 2013 under the Ministry of Education. The core mandate of the Agency is to develop and manage the National Innovation System. The Agency is therefore responsible for co-ordination, promotion and regulation of the National Innovation System.

2

Leverage the Venture Studio Model to Provide Operational Expertise and Embedded Technical Assistance

Key stakeholders: Philanthropic donors, academic institutions, funds and studios

Traditional accelerator models have shown limited success in scaling AgTech ventures in Africa, while evidence increasingly supports the effectiveness of the venture studio model. According to the Global Startup Studio Network, startups backed by venture studios in emerging markets demonstrate 30% higher three-year survival rates compared to traditional VC-backed startups. In African agriculture specifically, startups that receive embedded operational support reach profitability 2.8x faster than those without such support (Village Capital, 2023).

Furthermore, startups emerging from venture studios reach Series A in about 25.2 months, significantly faster than the 56 months typical in traditional startup models[20]. This ability to accelerate market entry, de-risk early-stage innovations, and support founders with deep industry expertise makes venture studios a compelling alternative to conventional VC models in African agriculture. Based on an FAO assessment, despite the abundance of incubators in Kenya, there are concerns about the quality of support they provide to start-ups and their effect on the AgTech ecosystem. The concerns raised include ack of serial entrepreneurs as mentors or lack of developed expertise in AgTech[21]

Despite this proven impact, venture studios remain underfunded in Africa. Currently, there are fewer than 10 venture studios focused on agriculture, and only 1% of total AgTech investment has flowed into venture studios, compared to traditional VC structures. If African agriculture is to achieve meaningful scale, we must rethink the funding mechanisms available to early-stage AgTech ventures.

Recommendations

1. We need greater support and investment in the Venture Studio model. Funders must be willing to look beyond traditional 2 & 20 VC structures and deploy capital into more innovative models that provide founders with embedded industry expertise to de-risk early stage innovations and accelerate the path to scale.
2. African agricultural ventures face even greater challenges than their global counterparts, with limited access to specialized talent, fragmented markets, and complex regulatory environments. Venture studios like Catalyst and Africa Climate Ventures have begun to demonstrate that embedded technical assistance can help African AgTech startups navigate these challenges more effectively.
3. Encourage LPs, GPs, and philanthropic donors to deploy capital into more innovative funding structures beyond the traditional 2 & 20 VC model.
4. Fund research on the venture studio model in Africa, to generate data-driven insights on implementation, impact, and best practices for scaling.
5. Structure dedicated funds for emerging venture studios, similar to Mastercard's fund for first-time fund managers, ensuring they have the runway to refine their model.
6. Deploy concessionary capital to help bring in LPs who are hesitant to invest in non-traditional venture models, making it easier for them to support this growing asset class.

Delta40's venture studio model is designed to co-create and de-risk startups by embedding talent, providing early funding, and leveraging partnerships to fast-track scale. Expanding this approach in Africa could increase the number of investment-ready AgTech startups and provide a more structured pathway to success.

Pyramidia is a venture builder that focuses on companies that transform agrifood systems in Africa towards a low-carbon and resilient future. They bring together innovation, talent, and capital – teaming up with founders to build ideas into high-impact companies.

3

Increase Pool of Blended Capital for Early-Stage Ag Ventures

Key stakeholders: Funds, Corporates and philanthropic donors

Despite agriculture's role in livelihoods and food production, the sector receives an underwhelming proportion of 4.69% of total VC funding over the last 4 years, compared to Fintechs 46.37% (Acumen, 2024, February 28). Within the sector, working capital is also a major constraint. Startups face bank interest rates of 15–30% APR and strict collateral requirements, making it nearly impossible to finance inventory, operations, or market expansion. This funding disparity underscores the urgent need to mobilize more patient, risk-tolerant capital to support AgTech innovation and scale.

Recommendations

1. Establish financing mechanisms that combine equity and working capital at concessional rates for AgTech startups to lower the cost of capital and make funding more accessible.
2. Mobilize philanthropic to provide first-loss capital, which absorbs initial losses and de-risks investments for other financiers. This strategy can attract private capital to early-stage AgTech ventures.
3. Implement Results-Based Financing: Develop financing models where disbursements are linked to the achievement of specific milestones or outcomes, ensuring that funds are used effectively and encouraging performance.
4. Adopt Alternative Credit Assessment Models: Utilize non-traditional data sources, such as mobile payment histories or satellite imagery, to assess creditworthiness. This can expand financing access to startups lacking conventional credit histories.
5. Provide Grants for Research and Development (R&D): Offer grants to support R&D activities within AgTech startups focusing on addressing drought, soil health management, endemic theatres and post-harvest loss technologies.

SunCulture, a solar irrigation company headquartered in Kenya, leveraged a $27.5M catalytic capital raise from InfraCo Africa, Acumen, and The Schmidt Family Foundation, blending equity, concessional loans, and structured debt to expand affordable financing options for smallholder farmers. Similar models should be scaled to provide startups with the capital needed to grow.

4

Strengthen Corporate - Start-Up Collaboration to Align on Product Fit and Potential Exit Pathways

Key stakeholders: Corporates, start-ups, philanthropic donors

According to BCG's 2023 "State of African Innovation" report,while 83% of African corporations express interest in startup partnerships, only 12% have established structured engagement programs. Meanwhile, 67% of AgTech startups report difficulties accessing corporate procurement processes, with average sales cycles exceeding 18 months when selling to large corporations.

Corporate venture capital (CVC) investment in African AgTech was roughly $8–9 million million in 2024. Corporates have the potential to be valuable partners for startups by providing access to capital, brand-awareness and technical expertise; startups offer value to corporates by driving innovation in products and services, and offering an on-the-ground connection to the customer. However, there is often a disconnect between corporate interests and startup needs due to differences in risk appetite, and a misalignment between the priorities of corporates and the products and services that startups are developing.

Recommendations

1. Create an ecosystem that explicitly brings together corporates with startups to facilitate collaboration and partnership.
2. Corporate-Startup Engagement Platforms: Establish and fund programs that facilitate structured engagement between startups and corporates, including matchmaking initiatives, joint pilot projects, and sector-specific innovation challenges.
3. Capacity Building for Startups: Provide funding for training programs that help startups navigate corporate procurement, investment, and partnership processes, ensuring they are better positioned for collaboration.
4. Internal Corporate Readiness Programs: Support initiatives within corporations that educate HQ and regional teams on how to work effectively with startups, including funding secondments, internal innovation champions, and Africa-focused investment strategies.
5. Risk-Sharing Mechanisms: Deploy philanthropic capital to de-risk corporate partnerships with startups by offering co-funding for pilot projects, providing grants for proof-of-concept work, or structuring blended finance solutions that incentivize corporate investment.
6. Knowledge Sharing and Best Practices: Fund research and convenings that document successful corporate-startup partnerships in AgTech and highlight actionable strategies for improving alignment.

Bayer's precision agriculture partnership in South Africa allowed startups to pilot soil sensors and crop monitoring technology, validating their solutions while giving Bayer access to cutting-edge innovations for smallholder farmers. Similarly, Crop2Cash leveraged corporate partnerships to scale from 12,000 to over 100,000 farmers through FCDO.

Delta40 has built a network of 20+ corporates to provide a pipeline for investments, M&A and partnerships to support their innovation strategies. To date, we have worked with global and African partners to get input and test this strategy including Autodesk, Schneider Electric and Rivian.

5

Drive Strategic Partnerships & M&A Between Start-Ups to Accelerate Growth & Market Expansion

Key stakeholders: Corporates, start-ups, philanthropic donors

Many AgTech startups in Africa operate in silos with overlapping business models, fragmented solutions, and limited market penetration. Despite a continent-wide smallholder farmer population exceeding 33 million, most African AgTech startups appear to serve fewer than 10,000 farmers, highlighting the sector's fragmented reach and early-stage maturity. High customer acquisition costs ($23–$42 per smallholder farmer) and significant operational overlap (68% of ventures competing in the same regions) create inefficiencies that hinder profitability and impact.

Additionally, growth-stage AgTech companies often identify strategic partnerships as a means to scale operations and amplify impact, but financial constraints prevent them from piloting and formalizing such collaborations. Without dedicated funding for partnerships, companies must divert critical resources away from core business operations, slowing sector-wide progress.

Recommendations

1. Funders can promote joint ventures, mergers, and strategic partnerships between start-ups in their portfolios: Encouraging startups to explore JVs and mergers is a viable strategy for achieving market expansion and scale faster and more efficiently. The handful of successful AgTech mergers in Africa have demonstrated 3.5x higher growth rates compared to non-consolidated competitors, with customer retention rates improving by 46% post-merger.
2. Support creation of special purpose vehicles (SPVs) and structured collaboration models: Formalizing collaboration and partnerships through SPVs and similar models can allow companies to expand geographically, integrate complementary products, or co-invest in shared infrastructure.
3. Deploy "Collaboration Capital" to de-risk partnerships: Establishing dedicated financing mechanisms for AgTech companies to pilot and scale partnerships can mitigate the financial risk of partnership development.

Two founders from the Delta40 Innovation Program are forming an SPV and licensing partnership to expand their services across multiple African markets. This model allows them to share distribution networks, pool capital, and scale faster, demonstrating how collaboration can create greater impact than direct competition.

One Acre Fund has successfully partnered with other agricultural brands to serve as a one-stop shop for smallholder farmers. By integrating multiple products and services under a single distribution network, they provide farmers with access to essential inputs, financing, and advisory support in a streamlined manner.

6

Leverage Philanthropic Capital to De-Risk Innovation & Drive Adoption of New Critical Technologies

Key stakeholders: Philanthropic donors

In order to address the unique challenges of African agriculture and food systems, we need substantial investment in localized, Africa-based R&D, product development and innovation. Even after impactful products and services are developed, the challenge remains around driving early adoption of new technologies and generating enough traction to leverage economies of scale.

Public investment in agricultural R&D in Sub-Saharan Africa has been a small fraction of global totals and shows high volatility in R&D funding[23].Startups with limited funds are often not in a position to invest significantly in innovation to fill this gap, or to find creative ways to drive adoption of new technologies. This funding gap slows the development of new technology and innovation that is tailored to these markets; it also makes it hard to drive adoption of newer technologies and products that will have longer-term customer benefits. Some examples:

- Soil testing remains largely inaccessible to smallholder farmers across the continent due to high costs associated with sampling and analysis, limited availability of technical expertise and challenges in representative soil sampling.
- Climate-smart agriculture practices remain low[23]. A meta-analysis of CSA's livelihood impacts in SSA finds positive correlations between adoption and outcomes like income and food security[24]. The World Bank estimates that without adaptation, climate change could reduce yields by an additional 5-17% by 2050, representing losses of $10-20 billion annually. Farmers who adopt climate-smart practices like drought-tolerant seeds are lower risk and should benefit from lower costs for financing and insurance due to their lower risk profile. Yet it takes time to prove out these cost savings, preventing lenders and insurers from building the data needed to offer these farmers lower prices, and reducing the pace of farmer climate adaptation.

Recommendations

1. Provide capital that funds research to develop new tech and products: Philanthropic organizations can provide grants or concessional loans specifically earmarked for R&D activities, enabling startups to innovate without the pressure of immediate financial returns. Additionally, implementing capacity-building programs can help startups effectively utilize R&D funds to develop scalable and impactful solutions.
2. Subsidize the cost of new technologies and products to make them more accessible and to accelerate adoption
    a. Foundations, governments and other interested funders should create a pool of grant capital to subsidize the cost of soil testing and the cost of a farmer's incremental recommended spend (due to the soil test) on fertilizer product changes (i.e. fertilizer and soil biostimulants) for 1 year to drive adoption. This could be achieved for roughly $20 per farmer.
    b. Provide grant capital to temporarily reduce financing and insurance costs for climate-smart products while lenders collect the data to demonstrate lower risk and prices in the long term to working capital and insurance providers. Once the underwriting case is proven out, the lower prices due to lower risk will provide a natural financial incentive for farmers to adopt climate-smart practices. Looking ahead, a debt facility that offers lower interest rates for climate impact at the farmer level ("debt for climate") would be catalytic. This could be modeled like Acumen's Hardest to Reach fund, in which debt interest rates go from 10% down to 1% if impact is realized. We recommend a starting interest rate of 9% that goes down to 1% as climate resilience and adaptation goals are realized.
3. Fund extension to educate farmers on new offerings to reduce resistance and increase adoption: Philanthropic organizations can play a pivotal role in facilitating the adoption of new technologies and products through targeted grants aimed at farmer education. This could include funding training programs, developing educational materials, funding demonstration farms, living labs and lead farmers (adopting technologies) and collaborating with local organizations to leverage existing networks and ensure the effective dissemination of knowledge

The McKnight Foundation's Global Collaboration for Resilient Food Systems (GCRFS) demonstrates how philanthropic capital can support agricultural R&D. GCRFS funds participatory, collaborative research focused on agroecological intensification, linking international, national, and local organizations with farming communities in Africa and South America.

The R4 Rural Resilience Initiative spanning six African countries has shown that insured farmers save 123% more than uninsured peers while increasing investments in seeds, fertilizers, and other inputs by 18–30%. Weather index insurance programs developed by the World Food Programme have reached over 300,000 farmers across Africa with demonstrable increases in resilience and productivity.

7

Scale Proven Innovations with Results-Based Financing

Key stakeholders: Corporates, start-ups, philanthropic donors

Proven, impactful models in the agricultural sector often require a large amount of capital to scale. Commercial debt rates are typically prohibitively expensive, and make it difficult for growth stage companies to invest in geographical expansion and infrastructure to scale production and operations.

Recommendations

1. Create large pools for RBFs and concessional debt to support scaling of growth stage companies with proven, impactful solutions: Developing a blended finance facility - leveraging significant catalytic capital - to crowd in $750M+ debt capital could finance scalable ag-tech companies to reach several million smallholder farmers with impactful products and services, such as input financing, ag training, soil testing, and others.
2. Offer affordable local currency concessional debt for investment in infrastructure and operations required to scale: Impact-oriented debt funders can reduce foreign exchange risk and enable the sustainable growth of ag-tech ventures by offering affordable local currency debt, filling a gap not currently met by commercial banks. Concessional financing empowers companies to invest in critical infrastructure, equipment, and logistics, helping them scale production and improve operational efficiency.

ADAPTA Climate Finance Facility (ACF): The ACF is a $50 million debt facility aimed at transforming agricultural finance and food security in Sub-Saharan Africa. It utilizes proprietary climate risk management software to offer a tailored, data-driven approach, reducing the risks associated with lending to smallholder farmers while promoting regenerative agricultural practices.

8

Invest in AgTech Ventures that Can Export and Generate Foreign Exchange

Key stakeholders: Corporates, start-ups, philanthropic donors

Africa's AgTech sector is heavily reliant on local currency markets, which limits growth potential and exposes companies to currency devaluation risks. An IMF analysis reported that the average depreciation of Sub-Saharan African currencies against the USD from January 2022 to mid-2023 was about 8%, with notable extreme cases such as Ghana and Sierra Leone experiencing over 45% depreciation[25], directly impacting AgTech companies' purchasing power and ability to service foreign-denominated debt. Meanwhile, the International Trade Centre identifies untapped agricultural export potential of $42.6 billion from Africa, indicating significant opportunities for forex-generating AgTech businesses. Premium-certified agricultural exports from Africa (organic, fair trade, etc.) grew at 18% CAGR from 2018-2023 according to UNCTAD. Many startups focus only on domestic markets rather than building global export pipelines, missing opportunities to generate USD and EUR revenues, which are critical for financial resilience.

Recommendations

Increase investment in AgTech businesses that have export potential, enabling them to tap into global supply chains, access premium markets, and reduce dependence on volatile local economies. Governments should support export-friendly policies, while investors should prioritize companies with strong international demand.

East African specialty coffee and premium export-focused agribusinesses have successfully built global market linkages, bringing in foreign exchange and stabilizing revenues. By investing in high-value crops, processed agricultural goods, and AgTech solutions with global applicability, Africa can strengthen its agricultural economy while reducing exposure to local currency fluctuations.

9

Accelerate Pan-African Expansion with Catalytic Capital and Technical Assistance

Key stakeholders: Corporates, philanthropic donors

Cross-border expansion in Africa faces multiple barriers that significantly impact AgTech scaling:

- Agricultural startups must complete an average of 13 different document requirements per country entry (compared to 4-6 in the EU), with regulatory approvals for agricultural products taking an average of 285 days across Africa versus 90 days in developed markets.
- Market entry requires $75,000-$150,000 in upfront investment per new African market according to 2023 Briter Bridges data, with 76% of AgTech startups citing regulatory fragmentation as their primary expansion barrier.
- The combined effect of these barriers extends new country entry timelines to 7-9 months for AgTech startups, compared to 2-3 months for similar expansions in Europe or Asia, and typically delays break-even in new markets by 12-18 months compared to domestic operations.
- Intra-African logistics costs are 50-175% higher per kilometer than in other developing regions (World Bank Logistics Performance Index), with agricultural goods facing average border crossing times of 12.1 days between African countries.

Recommendations

1. Develop regional expansion playbooks covering regulatory processes: Providing start-ups and growth stage companies in the ag and food sectors with playbooks that provide information on legal and regulatory processes, distribution strategies, and go-to-market best practices would de-risk, simplify and accelerate market expansion.
2. Create repayable grant facilities to subsidize market entry costs: By offering grants or repayable grants to subsidize market entry, growth stage companies would be able to enter new markets faster, and shift their growth curves by serving more customers upon market entry. Some of these funds could be used for technical assistance to
3. Lobby governments to reduce barriers to market entry: Funders, industry associates, and ecosystem actors could work with governments to simplify the costs and time associated with new market entry, thus removing some of the key barriers facing companies when deciding how and when to expand their footprint.

The Beyond the Grid Fund for Zambia (BGFZ) was launched in July 2017 with the objective of expanding clean, off-grid energy access in Zambia. Funded by the Swedish International Development Cooperation Agency (Sida) and implemented by the Renewable Energy and Energy Efficiency Partnership (REEEP), the program employed a results-based financing model to de-risk market entry and expansion for energy service companies such as Fenix International (Uganda) and Standard Microgrid (US), thereby stimulating private sector participation in the off-grid energy sector. By December 2021, the program had successfully delivered energy service subscriptions to 190K+ households, benefiting 1M+ individuals, with 53% residing in rural areas. Additionally, BGFZ mobilized USD 49 million in co-financing from third-party financiers and created nearly 2K new jobs. The success of BGFZ paved the way for its expansion into the Beyond the Grid Fund for Africa (BGFA), aiming to replicate this model across other Sub-Saharan African countries.

03

Delta40 Priority

This section outlines practical, high-impact steps that Delta40 will take to drive transformative change in Africa's agriculture and food systems.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Delta40's Priority Initiatives in 2025

As highlighted during the Basecamp and Scale Summit, the agri-food sector faces interconnected challenges that require collaborative and targeted action from diverse stakeholders - startups, corporates, investors, philanthropic actors, and governments. To bridge these gaps and unlock the full potential of innovation in the sector, it is essential to define clear, actionable steps for every stakeholder group. The following priorities presented here aim to address specific challenges, align efforts, and accelerate progress by Delta40.

AG- AND FOOD-TECH INNOVATION PROGRAM & SCALE SUMMIT

Challenge: As highlighted in the Challenges section, agriculture receives a small proportion of VC funding relative to it's role in Africa's economy. AgTech companies require significantly more capital and connections to suitable investors as well as tailored support and access to a holistic ecosystem that drives their growth.

Opportunity: In collaboration with global partners, Delta40 will design an Innovation Program and Scale Summit to provide venture studio support for early stage technical and scientific founders in the AgTech sector. The program will build on the knowledge and experience from our innovation basecamp to support scientific and technical founders working within the sector.

SUPPORTING WOMEN IN AGTECH

Challenge: Women in AgTech face disproportionate challenges in funding and venture building, often receiving smaller ticket sizes and being pushed towards grants over equity or debt.

Opportunity: Delta40 is working with partners on the ground to provide venture support, tech enablement, and deploy capital specifically tailored to female founders and smallholder farmers in Ag and food. These initiatives will be designed ti include capacity building, market access, and mentorship for women Agripreneurs.

$50M CATALYTIC CAPITAL FACILITY

Challenge: Delta40 seeks to solve the top problem identified first-hand through its portfolio, extensive entrepreneur network, and debt investor community: lack of access to affordable, flexible, and catalytic working capital debt for impactful start-ups

Opportunity: Delta40 seeks to create the largest consortium of catalytic capital funders to provide efficient "thrust" capital to post-revenue, pre-profitability start-ups. Three distinct characteristics of the Facility are: (1) it will provide low-cost, affordable, and nimble working capital, inventory & receivables financing, and asset financing; (2) it will build and leverage an innovative data platform to more credibly assess repayment likelihood; an (3) it will explicitly 'bridge' to unlock mainstream capital, providing local investors and banks with real risk data and enabling companies to access local capital in our target geographies. With a first close at $10M, the fund will focus on fulfilling critical working capital financing needs and addressing local currency challenges for African and female founded ventures.

CORPORATE PARTNERSHIPS

Challenge: Corporates and start-ups in the ag sector are not sufficiently connected to ensure that products, services and distribution channels are designed with maximum scale and impact potential.

Opportunity: We are looking to create formal partnerships with corporates across our key sectors (including Ag) that will bring corporates closer to the start-up ecosystem. We believe this will accelerate the transfer of knowledge and technical expertise, improve product development, and ultimately drive greater investment, M&A, scale, exits and impact across Africa.

If you would like to partner, fund or invest in any of these initiatives, reach out to Lyndsay Handler (lyndsay.handler@delta40.com).

04

Ways to Invest

20 Pathways to Invest in Agriculture in 2025

Whether you are an investor, corporate leader, policymaker, researcher, or development professional, this section provides clear pathways to engage, support, and partner with stakeholders across the AgTech ecosystem.

Early Stage Equity and Debt Investment

Contribute to the Nutritious School Feeding Working Group from Delta40's Innovation Program to scale their manufacturing and distribution of nutritious products for school children including TenX Nutrition, Plumbee, Smart Foods Uganda

Invest into Farmsky- an Ag-Fintech a platform where vetted and supported farmers can be matched to retail & institutional investors who would earn from the success of a farm, all managed on Farmsky's digital platform.

Invest in Samaking to advance its mission of making fish the leading protein choice on African plates. This funding will support their fish aggregation strategy and drive growth through their innovative franchise model, enabling scaling and expansion.

Provide a mix of capital to Farm to Feed to support their work reducing food waste while increasing farmer incomes. This includes equity investments in their seed round, grants for R&D, or debt for working capital to bridge the gap between paying farmers for produce and payments from F2F's customers.

Women produce 70% of Africa's food but receive only 3% of AgTech funding. Support female founders in Agriculture as they are a critical workforce in this sector.

Philanthropic and Catalytic Capital

Partner with Apollo Agriculture to subsidize the cost of soil testing and the subsequent incremental spend on fertility products (e.g., fertilizer and soil biostimulants) for farmers over the course of one year to encourage adoption. Apollo will finance the remaining costs. With an estimated cost of approximately $20 per farmer and a goal to reach 500,000 farmers over three years, this initiative aims to drive both immediate productivity gains and long-term improvements in soil health. The program can be scaled beyond the initial three years with a 20-30% subsidy on soil testing.

Support Delta40 to develop a Catalytic Capital facility which offers working capital and innovation grants to fill gaps in the ecosystem.

Provide grant capital to temporarily reduce financing and insurance costs for climate-smart products. Once the case is proven, lower prices from reduced risk will encourage farmers to adopt climate-smart practices.

Provide outcome-based grant capital to encourage investment in better quality agricultural insurance for small-scale farmers. We recommend an initial facility to develop improved insurance options for Apollo, which will allow them to reach over 2 million farmers across Africa by 2030.

Grant funding and concessional finance can be used to de-risk Advance Market Commitments for large buyers of organic fertilizers provided by companies such as Regen Organics. Such agreements can make it easier for buyers to commit to integrating organic products and ensuring a stable market for organic fertilizers.

Growth Stage Investment

Partner with SunCulture to provide results-based financing that will equip smallholder farmers in Africa with solar irrigation solutions. SunCulture is a startup leveraging off-grid solar technology to provide its customers with reliable access to water, irrigation, lighting, and mobile charging.

Invest in Giraffe Bioenergy's Project Finance Round to build Kenya's first and largest cassava-to-ethanol biorefinery for the domestic production of clean cooking fuel and the employment of thousands in Kilifi County.

Invest in Regen Organics to support the company's expansion and work to decarbonize food and feed production in Africa. By 2030 Regen aims to process over 1 million tons of organic waste per year, sell to at least 250K+ smallholder farmers across the continent, 500K+ tons of carbon per year, and create 10K+ green jobs.

Provide local currency concessionary debt to Regen Organics to build new factories. Interest rates in Kenya can be as high as 18% so affordable, local currency debt is crucial to minimize foreign exchange risk and to support Regen's expansion in a financially sustainable manner. It will enable them to invest in the necessary infrastructure, equipment, and logistics to scale production and enhance operational efficiency.

Invest in Cinch Markets to support their work creating commercial farms and increasing farmer incomes through land aggregation. This funding will enable Cinch's expansion to a total of 5 markets and development of additional businesses on their aggregated land.

Support Kentaste's expansion in an equity investment. Combined with affordable working capital and project finance, these investments will enable Kentaste to source 100M coconuts from 20K smallholder farmers by 2030, driving increased incomes and economic growth as the company connects farmers to international supply chains while producing high quality coconut products for a global market.

Partner with ThriveAgric by offering a grant or repayable grant to test and scale their innovative "Starbucks for Rice" retail model. This would allow them to pilot 50–100 low-cost rice retail shops in underserved neighbourhoods across Nigeria, cutting out intermediaries to dramatically reduce rice prices for consumers. Beyond this grant, ThriveAgric requires grant, equity, and debt financing to further develop their technology development, hire and train new staff, and expand their field operations. With this funding, ThriveAgric can support 10M smallholder farmers to increase their incomes by 300%.

Invest in GirSupport Apollo's rapid international expansion with a 30–50% grant or repayable grant that will be matched by Apollo with an equity commitment to launch 4 new markets in Africa. At an estimated $2–6M total new investment required to open a new market, they would require catalytic investment to unlock equity investment and have a significant impact in underserved markets. By 2030, this has the potential to enable Apollo to reach 1.3 million new farmers.

Ecosystem Building

Sponsor the next AgTech Innovation Program and Scale Summit to convene the ecosystem and catalyze the growth of impactful Ag and Food innovations

Explore Delta40's AgTech Dealbook for investment via grant, debt, equity, carbon finance, and project finance opportunities from $25K–$20M

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