Women-Led Agri-Tech Start-ups in East Africa: Ecosystem Barriers and Enablers

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Abstract.

Agricultural technology start-ups have become one of the most active segments of the East African innovation economy, yet women-led ventures remain a small minority of those receiving investment and scaling successfully. Drawing on interviews with 45 founders in Kenya and Uganda, this paper maps ecosystem barriers and enablers for women-led agri-tech start-ups. The study adopted a qualitative design informed by entrepreneurial ecosystem theory and conducted semi-structured interviews between August and December 2025 with founders of ventures operating in input supply, farm advisory, market linkage, agri-fintech and post-harvest technology. Transcripts were analysed thematically, and barriers and enablers were classified across the finance, human capital, market, support, policy and cultural domains of the ecosystem. Access to early-stage finance and mentorship networks emerge as the most decisive factors, cited by the large majority of founders as determining whether a venture progressed beyond the pilot stage. Founders described gendered investor perceptions, collateral requirements and the absence of pre-seed capital as the principal financial barriers, and access to experienced mentors and peer networks as the principal enabler of survival and growth. Regulatory clarity is a secondary concern, raised mainly by founders in agri-fintech and input certification who had reached a later stage of development. Kenyan founders reported a denser support environment than Ugandan founders but similar financing gaps. The paper proposes an ecosystem intervention agenda that prioritises gender-responsive pre-seed finance and structured mentorship, and discusses implications for accelerators, investors and policymakers in the region.

Keywords: women entrepreneurs, agri-tech, entrepreneurial ecosystem, early-stage finance, East Africa

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1. Introduction

East Africa has emerged over the past decade as one of the most dynamic regions for agricultural technology entrepreneurship in Africa. Kenya hosts a concentration of start-ups applying mobile, data and financial technologies to smallholder input access, advisory, market linkage, credit and post-harvest loss, and Uganda has a smaller but growing cluster. Agriculture accounts for most employment in both countries and women form a large proportion of the agricultural workforce, which makes women's participation in agri-tech entrepreneurship a matter of both equity and effectiveness.

That participation, however, remains limited. Surveys of African technology start-ups consistently find (Briter Bridges, 2023) that ventures with a woman founder or co-founder receive a small fraction of investment, and that solely women-led ventures receive a still smaller share. The reasons offered range from investor bias and network exclusion to structural constraints on women's access to collateral, time and mobility. Much of the

evidence, however, is aggregated across sectors and countries, and relatively little is known about how the specific characteristics of agri-tech, including long sales cycles, dependence on rural distribution and exposure to regulation of inputs and financial services, interact with gender to shape the trajectories of women-led ventures.

This paper addresses that gap. Drawing on interviews with 45 founders of women-led agri-tech start-ups in Kenya and Uganda, it maps the barriers and enablers that founders themselves identify across the domains of the entrepreneurial ecosystem, assesses their relative importance and compares the two national contexts. The study is guided by three questions: which ecosystem factors do women founders regard as most decisive for the progress of their ventures; how do finance, mentorship and regulation rank among these factors; and how do the experiences of founders in Kenya and Uganda differ. The paper proceeds by reviewing the literature on entrepreneurial ecosystems and gender, describing the qualitative methodology, presenting the findings, and discussing implications for ecosystem actors.

2. Literature Review

2.1 Entrepreneurial ecosystems

The entrepreneurial ecosystem describes the interdependent actors and factors that enable productive entrepreneurship within a territory. Isenberg (2010) identified six domains, comprising policy, finance, culture, supports, human capital and markets, and argued that they must be developed holistically. Stam (2015) distinguished framework conditions such as institutions and culture from systemic conditions such as finance, talent, networks and knowledge, and Spigel (2017) emphasised the relational character of ecosystems, in which cultural, social and material attributes reinforce one another over time.

In Africa, ecosystem research has documented the growth of hubs, accelerators and venture funds in Nairobi, Lagos and Cape Town alongside persistent weaknesses in early-stage finance and experienced talent. Nairobi is among the most developed ecosystems on the continent, whereas Kampala is an emerging ecosystem with fewer institutions and heavier reliance on donor programmes, and founders in emerging ecosystems face longer paths to investment.

2.2 Gender and entrepreneurship

Research on women's entrepreneurship has moved from documenting differences in outcomes towards explaining them through context. Brush et al. (2009) extended the conventional framework of markets, money and management with motherhood, representing household context, and meso and macro environments, representing norms and institutions; subsequent work argues that ecosystems are not gender-neutral and that access to networks, finance and legitimacy is structured by gender (Brush et al., 2019).

The financing gap is one of the most consistently documented patterns: women founders raise less, later and on worse terms, after controlling for venture characteristics. Kanze et al. (2018) showed experimentally that investors ask women about risk and loss prevention while asking men about growth, and that this accounts for much of the gap. In Africa the gap is compounded by constraints on women's ownership of land and collateral and by male-dominated investor networks (Hallward-Driemeier, 2013).

2.3 Mentorship, networks and agri-tech

Mentors provide advice, legitimacy and introductions, and structured mentorship has been shown to improve the survival and growth of small firms in developing countries

(Brooks et al., 2018). Networks of other women may offer support and role models but may be less connected to investors than networks dominated by men. Accelerators combine mentorship with training and sometimes capital, and their effect on fundraising is substantial where they are well connected to investors (Gonzalez-Uribe & Leatherbee, 2018).

Agri-tech presents particular challenges: ventures serve smallholders with low purchasing power and seasonal behaviour, which lengthens the path to revenue; distribution requires rural presence; and business models often involve regulated activities such as input certification, credit or insurance. Reviews note heavy dependence on donor grants in early stages and a difficult transition to commercial capital (Tsan et al., 2019). For women founders, whose mobility and time may be constrained and who face additional investor scrutiny, these features may intensify generic barriers.

3. Methodology

3.1 Research design

Given the exploratory purpose of mapping barriers and enablers from the founder's perspective, a qualitative interview design was adopted. Semi-structured interviews allow founders to describe the trajectory of their venture, to identify the factors that they consider to have mattered most and to explain how those factors operated, which cannot be captured by closed survey instruments. The design is consistent with the relational understanding of ecosystems advanced by Spigel (2017), in which the significance of any resource depends on the founder's ability to access and use it.

3.2 Sampling and participants

Ventures were defined as women-led if the chief executive or the majority of founders were women. Ventures were identified from the portfolios of accelerators and hubs in Nairobi and Kampala, from lists of participants in agri-tech competitions and from referral by interviewed founders. Purposive sampling sought variation in sub-sector, stage of development and location within each country. A total of 45 founders were interviewed, 27 in Kenya and 18 in Uganda, between August and December 2025. Table 1 presents the profile of the ventures. Market linkage and farm advisory were the largest sub-sectors, and most ventures were between two and six years old. Roughly one-third had raised external equity, a further third had received grants only and the remainder were financed from personal or family resources and revenue.

Table 1: Profile of interviewed women-led agri-tech ventures (N = 45)

Characteristic	Category	Kenya (n = 27)	Uganda (n = 18)	Total (N = 45)
Sub-sector	Market linkage and aggregation	8	6	14
	Farm advisory and data	7	4	11
	Input supply and distribution	4	4	8
	Agri-fintech (credit, insurance, payments)	5	2	7
	Post-harvest and processing technology	3	2	5
Venture age	Under 2 years	5	5	10
	2–6 years	16	11	27
	Over 6 years	6	2	8
Financing to date	External equity raised	12	3	15

Grants only	9	8	17
Personal, family and revenue only	6	7	13

Source: Authors' interview data (2025)

3.3 Data collection and analysis

Interviews lasted between 50 and 90 minutes and were conducted in person in Nairobi, Kampala and secondary towns, or by video call. The guide covered the founding and development of the venture, the resources and relationships that had been most and least available, experiences of seeking finance, mentorship and support, and views on regulation. Thematic analysis followed Braun and Clarke (2006), with a coding frame derived from the ecosystem domains of Isenberg (2010) and refined inductively. Each barrier and enabler was recorded with the number of founders raising it and whether the founder described it as decisive, defined as a factor without which the venture would not have reached its current stage or beyond which it could not progress. Both authors coded all transcripts and resolved differences through discussion; ethical clearance was obtained and founders were anonymised.

4. Results

4.1 Barriers across ecosystem domains

Table 2 summarises the barrier themes identified, the number of founders raising each and the number describing the barrier as decisive. Barriers in the finance domain were the most widely reported and the most frequently regarded as decisive. Forty founders described difficulty in obtaining early-stage finance, and 34 regarded this as the factor that had most constrained their venture. The specific obstacles fell into three groups. The first was the absence of pre-seed capital in amounts between roughly 20,000 and 150,000 US dollars, the range required to move from a pilot to a commercial trial; founders described a gap between small grants and competition prizes on the one hand and seed rounds requiring evidence of traction on the other. The second was investor perception. Founders in both countries recounted meetings in which questions focused on the risk of failure, the founder's family circumstances or her technical credibility, and several contrasted their experience with that of male peers pitching similar businesses, consistent with the pattern identified by Kanze et al. (2018). The third was collateral. Founders who had approached banks reported that requirements for land title or fixed assets excluded them, since land in their families was registered in the names of husbands or fathers.

Table 2: Ecosystem barriers identified by founders (N = 45)

Ecosystem domain	Barrier theme	Founders raising (n)	Described as decisive (n)	Kenya / Uganda (n raising)
Finance	Lack of pre-seed and early-stage capital	40	34	23 / 17
Finance	Gendered investor perceptions	33	18	22 / 11
Finance	Collateral requirements for bank credit	28	9	14 / 14
Supports	Limited access to experienced mentors	31	21	15 / 16
Markets	Long sales cycles and farmer purchasing power	29	12	17 / 12

Human capital	Difficulty recruiting technical and field staff	24	7	13 / 11
Policy	Regulatory uncertainty (inputs, fintech, data)	19	6	13 / 6
Culture	Household responsibilities and mobility constraints	22	8	11 / 11

Source: Authors' interview data (2025)

The second most decisive barrier was limited access to experienced mentors, raised by 31 founders and described as decisive by 21. Founders described a lack of people who had built and scaled agri-tech businesses and were willing to advise, and a tendency for accelerator-assigned mentors to be generalists with little knowledge of agriculture or of the specific challenges of rural distribution. Market barriers, including long sales cycles and the limited purchasing power of farmers, were widely reported but less often regarded as decisive, since founders tended to view them as inherent features of the sector to be managed rather than as ecosystem failures. Household responsibilities and constraints on mobility were raised by roughly half of founders in each country and were described as affecting the time available for field work and travel to investor meetings, but were regarded as decisive by a minority.

Regulatory uncertainty was raised by 19 founders and regarded as decisive by only six. Those who raised it were concentrated in agri-fintech, where licensing requirements for credit and insurance products were described as unclear and changing, and in input supply, where certification of seeds and biological products involved lengthy procedures. Founders at earlier stages and in advisory or market linkage ventures rarely mentioned regulation. The greater frequency of regulatory concern in Kenya reflects the larger number of Kenyan ventures in fintech and inputs rather than a more difficult regulatory environment.

4.2 Enablers across ecosystem domains

Table 3 presents the enabler themes. Mentorship and peer networks were the most widely cited enabler and the most frequently described as decisive. Founders who had progressed beyond pilot stage almost invariably attributed this in part to a specific mentor or to a peer group, and described the value of such relationships in terms of introductions to investors and customers, advice on pricing and distribution, and encouragement during difficult periods. Networks of other women founders were valued for support and solidarity, but founders were explicit that the mentors who had made the greatest difference to fundraising were usually well-connected individuals, often men, with experience of the investment community. Grant funding from donors and competitions was the second most cited enabler and was decisive for many ventures at the earliest stage, although founders also noted that dependence on grants delayed the development of commercial discipline.

Table 3: Ecosystem enablers identified by founders (N = 45)

Ecosystem domain	Enabler theme	Founders raising (n)	Described as decisive (n)	Kenya / Uganda (n raising)
Supports	Mentorship and peer networks	38	27	23 / 15
Finance	Donor grants and competition prizes	35	22	20 / 15
Supports	Accelerator and hub programmes	30	14	22 / 8
Finance	Gender-focused investment vehicles	17	11	13 / 4

Markets	Partnerships with cooperatives and NGOs	26	10	14 / 12
Human capital	Founder's prior agricultural or technical experience	21	9	12 / 9
Policy	Supportive public programmes and clear guidelines	9	3	7 / 2

Source: Authors' interview data (2025)

Accelerator and hub programmes were cited far more often by Kenyan than by Ugandan founders, reflecting the density of such institutions in Nairobi, and were described as decisive mainly where they had led to investor introductions. Gender-focused investment vehicles, including funds and programmes targeting women founders, were cited by 17 founders, of whom 11 regarded the resulting investment as decisive; nearly all of these were in Kenya. Partnerships with farmer cooperatives and non-governmental organisations were an important market enabler, providing access to farmers at scale and sometimes acting as paying customers. Supportive policy was rarely cited as an enabler, and where it was, founders referred to specific programmes or to clear guidance from a regulator rather than to the policy environment in general.

4.3 Country comparison

The Kenyan and Ugandan samples reported similar finance barriers, with pre-seed scarcity nearly universal in both, but Kenyan founders had greater access to the enablers that partially mitigate them: accelerators, gender-focused funds and investor networks. This difference is reflected in the higher proportion of Kenyan ventures that had raised external equity. Ugandan founders relied more heavily on donor grants and on partnerships with NGOs and cooperatives, and several described travelling to Nairobi to access programmes and investors. The mentorship barrier was proportionally more severe in Uganda, where the pool of experienced agri-tech founders is smaller. Regulatory concerns were more prominent in Kenya for the sub-sectoral reasons noted above. Household and mobility constraints were reported at similar rates in both countries.

5. Discussion

5.1 Finance and mentorship as decisive factors

From the perspective of women founders in East African agri-tech, the ecosystem factors that most decisively shape venture progress are access to early-stage finance and to mentorship networks. This is consistent with finance and networks as core systemic conditions (Stam, 2015) and with the gender literature's identification of the financing gap and network exclusion as the principal mechanisms of disadvantage (Brush et al., 2019). The problem founders describe is less the absence of capital in the ecosystem than its absence at the pre-seed stage and the gendered filtering that occurs when they seek it. The gap between grants and seed rounds is general in African agri-tech (Tsan et al., 2019), but women appear affected more severely because they have fewer personal resources to bridge it and encounter risk-focused questioning when they pitch (Kanze et al., 2018).

The centrality of mentorship supports Brooks et al. (2018) and Gonzalez-Uribe and Leatherbee (2018) and adds that the most valuable mentors combine sector knowledge with investor access. The tension founders described between supportive women's networks and well-connected male-dominated investor networks suggests that mentorship programmes should deliberately bridge the two. The low decisiveness attributed to regulation indicates

that, while clarity matters for fintech and input ventures at later stages, it is not the binding constraint for most women-led ventures, which stall before regulation becomes relevant; this qualifies the emphasis on policy reform in some ecosystem agendas.

5.2 Implications for ecosystem actors

For investors and donors, the most effective intervention is gender-responsive pre-seed finance in the range founders identified, using structured assessment to reduce gendered questioning and requiring no collateral; the decisiveness founders attributed to gender-focused vehicles indicates that such instruments work but their reach, especially in Uganda, is limited. Accelerators and hubs need mentors with agri-tech experience and investor connections, structured mentorship beyond programme duration, and regional cohorts that reach Ugandan founders. For policymakers, the priority is clear guidance in the sub-sectors where regulation bites and support for collateral-free instruments that circumvent the constraint on women's asset ownership identified by Hallward-Driemeier (2013). Consistent with Isenberg (2010), these interventions are most effective in combination.

6. Conclusion

This paper mapped the ecosystem barriers and enablers experienced by women-led agri-tech start-ups in Kenya and Uganda, drawing on interviews with 45 founders. Access to early-stage finance and to mentorship networks emerged as the most decisive factors, with the absence of pre-seed capital, gendered investor perceptions and collateral requirements forming the principal financial barriers, and mentorship, grants and, where available, gender-focused investment vehicles forming the principal enablers. Regulatory clarity was a secondary concern raised mainly by founders in agri-fintech and input supply at later stages of development. Kenyan founders benefited from a denser support environment than their Ugandan counterparts but faced similar financing gaps. The study contributes to the ecosystem literature by showing how gender and sector interact to shape the relative importance of ecosystem domains, and to practice by identifying where intervention is likely to have the greatest effect.

The study has limitations. The sample was drawn largely through accelerator, hub and competition networks and may under-represent founders outside these circuits, including those in rural areas and those whose ventures have already failed. Founders' judgements of which factors were decisive are retrospective and subjective, and the qualitative design does not permit estimation of the magnitude of effects. Future research should combine founder accounts with investor and programme data to trace financing outcomes over time, compare women-led and men-led agri-tech ventures directly, extend the analysis to Tanzania, Rwanda and Ethiopia, and evaluate specific pre-seed and mentorship interventions to establish which designs are most effective in enabling women-led ventures to progress beyond the pilot stage.

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