The Lab

INVESTHER CLIMATE RESILIENCE BOND

INSTRUMENT ANALYSIS
SEPTEMBER 2024

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September 2024

DESCRIPTION & GOAL

The InvestHER Climate Resilience Bond is Uganda's first gender-focused resilience bond and the first in Africa to target sustainable agrifood systems. The bond aims to close the gender gap in Uganda's agrifood system and strengthen the resilience of women farmers against adverse climate conditions. By enhancing access to tailored credit products for primarily women-owned or led micro-, small- and medium-sized enterprises (MSMEs), providing gender and climate-mainstreaming technical assistance to financial service providers and SMEs, and through business development service providers, the bond aims to significantly boost the adoption of climate-smart agriculture among women farmers.

SECTOR

Sustainable Agriculture, Forestry, Other Land Use, Climate Resilience

FINANCE TARGET

The bond will be issued by a local financial institution, aiming to raise USD 25 million in local currency (Ugandan Shillings). Technical assistance will be grant-funded, primarily from development finance institutions (DFIs), philanthropies, and public donors. The bond will be financed by commercial (pension funds, commercial banks, retail investors, etc.) and concessional investors (DFIs, impact investors, etc.).

GEOGRAPHY

Initial focus: Uganda
Near-term focus: Ghana and the Philippines
Potential future issuance: Kenya and Nigeria

The Lab identifies, develops, and launches sustainable finance instruments that can drive billions to a low-carbon economy. The 2024 Lab cycle targets three thematic areas (adaptation, high-integrity forests, and sustainable agriculture and food systems) and three geographic regions (Brazil, East & Southern Africa, Latin America & the Caribbean, and the Philippines).

AUTHORS AND ACKNOWLEDGEMENTS

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DEPARTMENT OF STATE · UNITED STATES OF AMERICA

UNDP

CLIMATE POLICY INITIATIVE

GLOSSARY

Term	Expansion (if applicable)	Description
Agrifood systems	-	• Agrifood systems are the processes and actors that convert natural resources and the environment into benefits and costs for humans through agricultural production and agro-industries (Campanhola and Pandey, 2019).

Agri-MSMEs	Agricultural micro-, small- and medium-sized enterprises	• Profit-oriented enterprises involved in the agricultural value chain, either directly through farming and production, or by providing enabling services to other value chain actors (ISF Advisors & SAFIN, 2023).
		
		Below categorizations informed through field visits and consultations with agri-MSMEs during the Lab process.
		
		• **Medium-sized enterprises:**
		  o Between 5 and 100 full-time employees
		  o An annual turnover of UGX 100 – 360 million (USD 27k – USD 97k)
		  o Capital requirement of UGX 100 – 360 million
		
		• **Small-sized enterprises:**
		  o Between 5 and 49 full-time employees
		  o An annual turnover of UGX 10 – 100 million (USD 2.7k - USD 27k)
		  o Capital requirement of UGX 10 – 100 million
		
		• **Micro-enterprises:**
		  o Less than 5 full-time employees
		  o An annual turnover up to UGX 10 million (USD 2.7k)
		  o Capital requirement up to UGX 10 million
		  o Women smallholder farmers as clients belong to this category

BDSPs	Business development service providers	• These include community service organizations, training agencies, NGOs, accelerators, incubators, etc.
Climate resilience	-	• Climate resilience is the strengthening of a system to withstand climate-related shocks or stressors. Climate resilience is the capacity of a system to cope with, or recover from, those effects, while retaining the essential components of the original system (Joint-MDB, 2019).
Concessional and domestic	-	• Concessional investors engage by investing at below-market rates and receiving lower coupon payments.

commercial investors		Commercial investors invest at market rates, expecting competitive financial returns.
CSA	Climate-smart agriculture	• Climate-smart agriculture is an approach that helps guide actions to transform agrifood systems towards green and climate resilient practices (FAO, date unknown).
FSPs	Financial service providers	• These include banks, microfinance institutions, farmer-producer organizations, cooperatives, non-banking financial institutions, fintechs, etc.
Grant funders	-	• Provide non-repayable capital to the Technical Assistance (TA) facility.
Growth-stage agri-SMEs	-	• These are enterprises focused on scaling their business, possibly through increasing production capacity, entering new markets, or developing new products and services (ISF Advisors & SAFIN, 2023).
TA	Technical assistance	• TA includes bond design, risk and impact monitoring, gender and climate resilience mainstreaming, and pipeline development (see Box A).
Tier-1 financial service providers	-	• Tier 1 FSPs in Uganda represent the highest category of financial institutions, primarily commercial banks that are fully regulated by the Bank of Uganda (AFI, 2023a).
Tier-2 financial service providers	-	• Tier 2 FSPs in Uganda are categorized as credit institutions, which operate under a more limited scope of activities compared to Tier 1 commercial banks (AFI, 2023a).
Women-led enterprises	-	• At least 40% of senior management are women OR 30% of board members are women (2X Challenge, date unknown).
Women-owned enterprises	-	• Enterprises which are either founded by a woman (or group of women) that retain an active role OR at least 50% of shares owned by women (2X Challenge, date unknown).

SUMMARY

Women make up 86% of Uganda's agrifood system, yet they lack equal access to essential resources such as land ownership, agricultural inputs, credit, and extension services. This gender gap in Uganda extends beyond mere access; women also experience lower returns from the resources they do have, indicating that more needs to be done to understand how women can be better supported to benefit equally. Concurrently, Uganda faces increasingly frequent droughts, erratic rainfall, and other climate-related challenges, which threaten the food security and livelihoods of women. Addressing these issues by equipping women with tools to manage climate risks is critical for safeguarding and enhancing their productivity and resilience.

To meet this challenge, Grameen Foundation, a US-based non-profit with operations in Africa, designed the InvestHER Climate Resilience Bond initiative in Uganda, aiming to raise USD 25m in local currency. The use of proceeds from this bond will fund growth stage agri-SMEs offering climate-smart agricultural (CSA) products, services, and technologies, enabling them to expand their operations in rural communities. In addition, financial service providers (FSPs) — including rural banks, microfinance institutions, fintechs, and savings and credit cooperative organizations — will borrow from the bond issuer to on-lend to primarily rural women-led agri-micro, small, and medium enterprises (MSMEs), fostering climate-resilient outcomes. The bond will be issued in two tranches (with the same rating), with one tranche being commercial and the other being concessional.

The bond will incorporate a guarantee mechanism to cover a portion of potential losses, reducing investor risk and encouraging commercial investment. Additionally, a grant-funded technical assistance (TA) facility sidecar will engage with business development service providers (BDSPs) and FSPs, benefiting rural MSMEs by promoting gender mainstreaming and CSA practices.

Key Features:

- **Innovative:** This is Uganda's first gender and climate resilience bond and one of the few in Africa designed to address both gender inequality and climate challenges in the agricultural sector.
- **Actionable:** Grameen Foundation's strong local presence and experience in Uganda position it well to effectively channel donor capital. Furthermore, there is significant interest from African-focused development finance institutions (DFIs) in bond mechanisms, as investors and guarantee providers.
- **Financially Sustainable:** The bond is a relatively low-risk fixed income mechanism that can mobilize capital from both retail and institutional domestic investors as it is being issued in local currency.
- **Catalytic:** The bond's investment structure can be replicated, fostering a collaborative framework among stakeholders that can be customized to different regional ecosystems.

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CONTEXT

Ugandan women face growing risks from floods, droughts, and landslides, threatening their livelihoods and ultimately general food security. Investment in climate-smart agriculture is key to helping them address these challenges.

Uganda's position as 173rd out of 185 countries on the ND-GAIN Country Index (2021) starkly underscores its vulnerability to climate-related hazards and its urgent need for adaptive investment (see *Annex 1*) (ND-GAIN, date unknown). The country is increasingly affected by severe floods, droughts, and landslides, with food crop losses projected to reach up to USD 1.5 billion by 2050 (World Bank, 2021). This situation poses a severe threat to Uganda's agrifood system, which is crucial to the nation's economy, contributing approximately 41% to the GDP and employing 75% of the workforce (IFPRI, 2023). Particularly concerning is the impact on women — 86% of Ugandan working women are employed in agrifood systems, far exceeding global (36%) and sub-Saharan (66%) averages (see *Annex 1*) (FAO, 2023).

Despite their critical role, Ugandan women in agriculture are disproportionately vulnerable to climate hazards, hindered by socioeconomic, political, and cultural barriers. Limited access to land, finance, and agricultural inputs restricts their ability to adopt climate-resilient practices, leaving them ill-prepared to cope with the increasing frequency of erratic weather patterns (USAID, 2022). The burden of climate change exacerbates the already-heavy workload of women, who must balance farming with household chores, further limiting their participation in training and community decision-making (UNDP, 2020). This lack of agency and influence constrains their ability to prioritize and implement adaptive measures, perpetuating a cycle of vulnerability.

The economic marginalization of women in Uganda's agrifood sector is also starkly evident. Many women work as unpaid family laborers, a form of vulnerable employment that reflects their precarious economic position (FAO, 2023). Only 16% of agri-SMEs in Uganda are owned by women, reflecting their limited economic empowerment (Value4Women, 2022). Their lack of effective land ownership further exacerbates this issue, as it restricts their access to formal financial services due to insufficient collateral (UNDP, 2020). As a result, many women are forced to rely on informal credit providers who often impose exorbitant interest rates — up to 25% per month — and punitive terms (RVO, 2024; USAID, 2019). This cycle of economic vulnerability hampers their ability to fully invest in and benefit from the agrifood sector.

Addressing these challenges in Uganda's agrifood system can begin to close the agricultural production gap between men and women by 13%, resulting in a potential 1.6% increase in the country's agricultural GDP, equivalent to USD 58 million (UNDP, 2020). By investing in women and enabling their full participation in climate-resilient agriculture, Uganda can significantly bolster its agrifood system, making it more robust and sustainable in the face of climate change.

CONCEPT

1. INSTRUMENT MECHANICS

Bond with a TA sidecar and a potential fundraising and portfolio-level guarantee for investors and FSPs.

The InvestHER Climate Resilience Bond aims to raise USD 25 million in local currency to support climate-relevant SMEs and local FSPs.[1] Local FSPs will on-lend to rural MSMEs with an aim to increase the affordability and accessibility of credit. The affordability of credit pertains to the cost of capital, i.e. the interest being charged on the loans given out to SMEs and MSMEs. The accessibility issue pertains to collateral requirements that have been set by the regulator as well as the FSPs themselves. Discussions with 3 potential issuers have been initiated. All 3 issuers are FIs based in Uganda with one being an MFI.

To solve the affordability issue, a fundraising guarantee will de-risk the bond for investors which will enable lower coupon payments from the issuer given the reduction in the risk profile of the notes being issued. The lower coupon payments will improve the spread of the bond and enable the issuer to lend the proceeds at more favorable rates directly to SMEs and FSPs which will then on-lend to MSMEs. The operating hypothesis is that lending to FSPs at lower rates will enable them to pass on some of those reductions to the MSMEs through a loan conditionality contract. Moreover, there will be strict conditionality around lending to women-owned enterprises. Conversations with FSPs regarding this aspect are in progress.

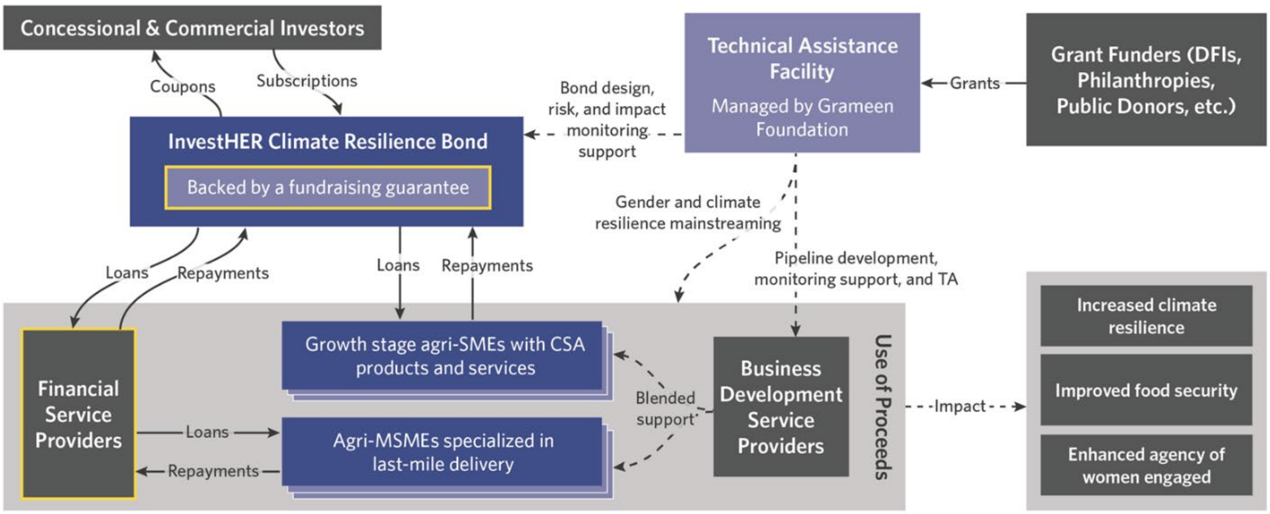
To solve the accessibility issue, Grameen Foundation is exploring the possibility of placing a portion of the proceeds from the bond as direct deposits in FSPs to serve as cash equity/collateral against lending to a new segment of customers that were previously not able to borrow due to lack of collateral. Initial discussions have begun to explore, as a first step, how much of the existing collateral requirements are stipulated by the regulator vs the FSP itself. As a second step, Grameen will try to explore the possibility of leveraging a portfolio-level guarantee for FSPs to lower their collateral requirements. This will then help determine the volume of proceeds that need to be leveraged as cash equity to unlock capital for MSMEs. Initial conversations have begun with potential portfolio guarantee providers such as the Africa Guarantee Fund, U.S. International Development Finance Corporation (DFC), Swedish International Development Cooperation Agency (SIDA), aBi Finance, and Danish guarantee provider IFU.

FSPs and agri-MSMEs will be selected based on potential for climate resilience alignment, willingness to participate in TA, gender balance in ownership or leadership, and proportion of women in the customer portfolio, amongst other variables. Gender selection will adhere to the 2X criteria, a global standard in gender finance (see Glossary). In Uganda, for a business to qualify as women-owned under these criteria, it must be at least 50% owned by women or founded by a woman (or group of women) (2X Challenge, date unknown). For women-led enterprises, the thresholds are 40% women in senior management or 30% women on the board. Creditworthiness of Agri-SMEs will be assessed by analyzing a combination of purchase orders/off-take contracts, credit history (where available),

[1] Issuance size is tentative and is based on comparable instruments analysis. The actual issuance size will be determined after identification of an issuer and pipeline scoping.

conducting credit analysis using financial ratios, cash flow analysis, trend analysis, and financial projections to evaluate a company's ability to pay its obligations, and credit utilization.

Figure 1: Instrument Mechanics.



The technical assistance provided by Grameen Foundation can be broadly categorized into two main areas:

1. Bond design, and risk and impact monitoring support to the Issuer.
2. Gender and climate-resilience mainstreaming to the borrowers at various levels.

These have been further elaborated in *Annex 2*.

Table 2 outlines the expected portfolio composition.

1.1 POTENTIAL CHALLENGES TO INSTRUMENT SUCCESS

As with any emerging markets-focused climate finance vehicle, this instrument faces a combination of macro- and micro-risks. These risks have been outlined in the tab below along with potential mitigation strategies:

Table 1. Risks to instrument success and mitigation strategies.

Challenge	Description	Mitigation Strategy
Execution Risk	• The Ugandan capital market is underdeveloped, largely limiting the pool of potential domestic issuers. • Domestic issuers may lack the capacity or interest to add a bond to their balance sheet. The need for liquidity and absorptive capacity in the existing loan books are two of the most critical considerations for issuers as they deliberate.	• Continue to engage issuers and strengthen value proposition of the bond through activities such as a fundraising and/or loan portfolio guarantee that can reduce risks and increase confidence among investors who will demand a lower coupon, which could potentially improve the business case for the issuer with an improved return. • Consider non-bank FSPs who may be qualified to issue a commercial bond such as large MFIs.

		• A contingency plan has been deliberated to circumvent this constraint. The priority for this intervention to be Uganda-focused trumps the need for it to be a bond issuance. Therefore, Grameen is open to exploring alternatives such as private placement and deploying capital through a fund. • Grant funded TA is necessary and will have to be raised, given the high operational costs of the FSPs.
Pipeline Risk	• The pipeline scoping work, to-date has been limited in its scope, mainly focusing on convening organizations such as accelerators and Incubators, as well some direct engagement with FSPs and SMEs. The direct engagement lacks depth and is fairly early stage. Although key issues around affordability (high interest rates) and accessibility issues (high collateral requirements) for the end borrowers have been identified and potential interventions proposed, due to the stage of these conversations, concrete analysis on which interventions to prioritize has yet to happen.	• Ramp up pipeline engagement post-endorsement and conduct primary research on FSPs and MSMEs funding needs in the absence of literature on Agri-MSME finance. • Based on the above, prioritize interventions solving for the affordability and accessibility issue. • Engage with the Bank of Uganda to determine how far we can lower these requirements given a potential portfolio-level guarantee at the FSP level as well as de-risking through TA.
Market Risk	• The demand for gender bonds may not be well-understood by domestic investors, potentially limiting the market. Investors might be skeptical about the returns or the impact efficacy, especially if they are not familiar with gender-focused investing. • Banks allocate only 2% of their portfolio towards the agriculture sector due to high co-variance in risks. Therefore, the market risk is higher given focus on agriculture.	• Engage with institutional investors, the Ugandan government, DFIs, and other potential stakeholders to establish the business case for gender bonds with a focus on why women-led SMEs can enhance economic growth and resilience; draw on existing issuances across the continent, e.g. in Tanzania (Jasiri Gender Bond). • De-risking strategies as outlined in the instrument mechanics section will improve investor and lender confidence.
FSP Products and Services Misalignment with Market Needs	• Local FSPs often impose high interest rates, require high collateral, and maintain inflexible repayment schedules that are misaligned with agricultural and production cycles. • Additionally, issuers may lack an Impact framework/criterion to assess the climate relevance of their use of proceeds, compromising their ability to effectively support women and climate-focused initiatives.	• Loans will be packaged with technical assistance to FSPs in designing, implementing, and monitoring gender and climate products (i.e products with longer loan terms, or more flexible repayment schedules to align with agricultural yields). • Onboard an ESG impact consultant to develop a robust and transparent framework at the issuer level, ensuring that loan disbursements are aligned with the

		climate and gender objectives of Grameen Foundation
Political Risks	• Uganda presents a challenging market due to various political factors that can deter international development finance. For instance, the recent passage of the Anti-Homosexuality Act has led organizations like the World Bank to temporarily freeze funding to the country. These political risks can undermine the success of the InvestHER bond as DFIs often provide anchor investments that encourage further commercial investments.	• Focus on engaging strong domestic investors to mitigate such political risks. Key domestic investors to target include the National Social Security Fund Uganda (NSSF) and local insurance companies. • Additionally, collaborate with organizations capable of acting as distributors to market the bond to domestic retail investors, such as Standard Chartered.

2. INNOVATION

Uganda's first gender-focused resilience bond and the first in Africa to target sustainable agrifood systems.

2.1 **BARRIERS ADDRESSED:** LACK OF FEMALE-TAILORED FINANCIAL PRODUCTS AND SERVICES, LIMITED ACCESS TO CSA INFORMATION AND TRAINING FOR WOMEN, AND HIGH TRANSACTION COSTS

Despite their economic significance, only 6% of Ugandan agri-MSMEs have access to formal loans or credit lines, compared to 44.1% in Kenya (FSD Uganda, 2021). This disparity can be attributed to several key factors; Kenyan agri-SMEs benefit from greater exposure to business development services, operate within a more diverse and developed financial sector, and have greater access to private sector support programs (Small Foundation, 2022). In Uganda, however, over 90% of Ugandan agri-SMEs rely on informal credit providers like village saving and loan associations, rotating savings and credit associations, and self-help groups (LAN, 2024). These informal institutions, while geographically accessible and user-friendly — particularly for rural women with low literacy levels — are often unregulated, leading to limited consumer protection (AFI, 2023b; UNCDF, 2023). Additionally, these informal lenders face challenges such as inadequate financial and operational management, insufficient savings to meet the borrowing needs of their members, and a lack of access to tailored financial products, like seasonal loans (UNCDF, 2023; USAID, 2019; FSD Uganda, 2023).

Engaging with formal financial institutions can be challenging for many Ugandan women due to the lack of necessary collateral, often rooted in cultural norms that prioritize male ownership of assets (AFI, 2023b; UNDP, 2020). These norms significantly limit women's access to financial resources, creating a barrier to economic empowerment (UNDP, 2020). Additionally, women running agri-SMEs frequently lack the training or guidance needed for effective business management, making it difficult for them to utilize loans, even when available (FSD Africa, 2024). Moreover, women's exclusion is also a consequence of them growing non-export-oriented crops which makes it difficult to obtain off-take agreements from buyers which are a lending requirement from some FSPs.

The InvestHER Climate Resilience bond addresses this challenge directly via the TA facility (see *Annex 2*) by providing gender-mainstreaming technical assistance to FSPs and through BDSPs to promote female-tailored financial products and services. This assistance could be in the form of supporting the provision of loans with reduced collateral, increasing the number of female loan officers, establishing 'women-only' operating hours to accommodate for gendered responsibilities such as childcare, and providing materials (e.g., videos) on the loan process for low/no literacy populations (FSD Africa, 2024).

Cultural norms in Uganda often restrict women's participation in extension services and training programs essential for learning about CSA practices (Hailemariam et al., 2024). These programs are typically tailored for men, who are assumed to be the primary decision-makers in agricultural households (Hailemariam et al., 2024). Even when extension services are accessible, they frequently fail to effectively reach women farmers and entrepreneurs. Women often miss out on meetings, workshops, or field demonstrations due to household responsibilities or because these events are scheduled at inconvenient times or locations (SLU et al., 2019; CGIAR, 2023).

To overcome this barrier, the TA facility will support BDSPs such as TRIAS in providing gender-sensitive training on CSA practices and technologies. This approach includes not only involving women in training programs, but also tailoring the content to the farming activities they typically undertake (e.g., food staples such as maize, beans, cassava, sweet potatoes, and groundnuts) and the specific challenges they encounter (SLU et al., 2019).

Financial institutions have limited outreach to Uganda's agriculture sector, in part due to high transaction costs (World Bank, 2019a). Reaching agri-MSMEs is costly and difficult due to their geographical dispersion; the use of agents and digital transactions remains limited in Uganda (World Bank, 2019a).

By utilizing local FSPs as last-mile distributors, the InvestHER bond ensures efficient and effective delivery of financial services to rural agri-MSMEs. These FSPs can leverage their 'social collateral,' local knowledge, and existing infrastructure to reach women farmers more cost-effectively. The incentive for the FSPs to increase lending will be through a combination of risk reduction through portfolio guarantee and below-market lending by the issuer which will be compensated by B share investors and access to TA.

See *Annex 2* for a summarized table of barriers and how the InvestHER Climate Resilience Bond addresses them.

2.2 **INNOVATION:** UGANDA'S FIRST GENDER AND CLIMATE RESILIENCE BOND

The InvestHER Climate Resilience Bond is innovative on multiple fronts. In the context of increasing climate risks and heightened vulnerability, gender bonds are a unique tool to mobilize finance to close the gender gap (ADB, 2023a). Although there are no established guidelines or principles for gender bonds, they are generally understood to fund projects and strategies with gender equality objectives, thus aligning well with the mandate of the InvestHER Climate Resilience Bond (FSD Africa, 2024).

Gender bonds are a rapidly expanding segment of the bond market, with their global AUM more than tripling from December 2020 to December 2023 (FSD Africa, 2024). Most of these bonds have been issued in emerging markets in Asia driven by institutions such as the Asian Development Bank and the Women's Livelihood Bond Series by IIX (Parallelle Finance, 2024). Some of these have experienced substantial oversubscription, including FONACOT's issuance at 3.3x (Mexico), NatWest's issuance at 3.5x (UK), and Bancóldex's issuance at 4.2x (Colombia) (FSD Africa, 2024).

In Africa, gender bonds have had limited issuance, with examples found in Morocco, Rwanda, South Africa, and Tanzania (Jasiri – see *Table 2*). However, none of these bonds have an explicit focus on climate resilience and agriculture (FSD Africa, 2024).

To date, Uganda has not seen clear issuances of green bonds or gender bonds. The closest example is the USD 30 million, 10-year Kakira Sugar Bond, issued in 2013 and brokered by Stanbic Bank Group Securities (see *Table 2*) (UNDP, 2024). The InvestHER Climate Resilience Bond is timely as the Ugandan Ministry of Finance, Planning, and Economic Development is currently exploring green bonds as part of a broader strategy to mobilize climate finance (Uganda Investment Authority, 2023). Additionally, the bond's focus on climate resilience is crucial given the increasing frequency and intensity of adverse climate hazards in Uganda.

Uganda's capital market is considered small and underdeveloped, with several challenges potentially hindering its growth. These challenges include underdeveloped financial infrastructure, limited product offerings, and a narrow investor base reliant on foreign investments (CMA Uganda, 2017). In this context, the InvestHER Climate Resilience Bond is particularly innovative as it focuses on leveraging domestic capital through retail and institutional investors as it is being issued in local currency. This approach has the potential to strengthen local capital markets, as it provides institutional investors with domestic options to fulfill their ESG investment needs, build domestic savings, and diversify the investor base.

Finally, incorporating a guarantee, like the 50% partial guarantee provided by IDB Invest under the Banco Sol transaction (see *Table 2*), further reduces the risk for investors (IDB Invest, 2024). This risk reduction can make the bond more attractive, encouraging more investments, especially in an underdeveloped market like Uganda.

Table 2: Comparable instruments compared to the InvestHER Climate Resilience Bond

Similar Instruments	Overview	Key differentiation
Jasiri Gender Bond	• **Year of issuance:** 2022 • **Beneficiaries:** Women-owned or led MSMEs • **Sectoral focus:** Trade, agriculture, construction, mining, transport, hospitality, education, manufacturing • **Geographical focus:** Tanzania • **Issuance size:** USD 30m • **Targeted outcomes/impact:** Creating jobs, financial inclusion for women, and supporting SDGs related to gender equality, economic growth, and poverty reduction	• Only 20% of loan proceeds were allocated to agri-MSMEs, whereas InvestHER is 100%. • Jasiri bond directly targets women-owned enterprises, whereas InvestHER has the additional element of intermediation through FSPs, allowing for a deeper rural reach. • Jasiri doesn't have an explicit focus on women's climate resilience in agrifood systems.
Kakira Sugar Bond	• **Year of issuance:** 2013 • **Beneficiaries:** Unspecified • **Sectoral focus:** Sugar production and processing • **Geographical focus:** Uganda • **Issuance size:** USD 30 million (UGX 76 billion)	• The Kakira bond is specific to the sugar value chain with no focus on gender equality or climate resilience.

	• **Targeted outcomes/impact:** Expansion of sugar processing facilities and bagasse cogeneration plant	
Banco Sol Social Gender Bond (PCG)	• **Year of issuance:** 2024 • **Beneficiaries:** Women-owned or led MSMEs • **Sectoral focus:** Unspecified • **Geographical focus:** Bolivia • **Issuance size:** USD 30 million • **Targeted outcomes/impact**: Empowerment of women entrepreneurs, a stronger focus on financial inclusion, and a significant contribution to the sustainable development of Bolivia's economy	• BancoSol transaction only allocates 4% of bond proceeds to agribusinesses in Bolivia. • BancoSol gender bond directly targets women-owned enterprises, whereas InvestHER has the additional element of intermediation through FSPs, allowing for a deeper rural reach. • Moreover, BancoSol lacks the climate resilience focus central to the InvestHER bond.
ASA Philippines Foundation Gender Bond	• **Year of issuance:** 2023 • **Beneficiaries:** Women-owned micro-enterprises • **Sectoral focus:** Unspecified • **Geographical focus:** Philippines • **Issuance size**: USD 90 million • **Targeted outcome/impact**: Boost lending to women entrepreneurs, improve quality of life, promote gender equality and women's empowerment	• The ASA Philippines bond doesn't have a clear focus on climate resilience or agriculture.
IIX's Women's Livelihood Bonds Series	• **Year of issuance:** 2017 - 2023 • **Beneficiaries:** Women in underserved communities • **Sectoral focus:** Livelihoods, health and sanitation, renewable energy and sustainable agriculture • **Geographical focus:** Primarily in South and Southeast Asia • **Issuance size:** USD 12 million to USD 100 million • **Targeted outcomes/impact:** Provide funding to initiatives that empower women, improve healthcare, clean energy, sustainable agriculture, and reduce poverty	• Multi-sectoral and broader geographic reach compared to InvestHER's targeted focus on climate resilience and gender equality in Uganda's agrifood systems.

MARKET TEST AND BEYOND

3. IMPLEMENTATION PATHWAY AND REPLICATION

Initial engagement with Issuers and borrowers in progress with an aim to issue the bond in Q4 2025.

The InvestHER bond will be issued in Uganda and is envisioned to have a 5-year term. Initial modeling has indicated that the proceeds should be lent out within the first two years to ensure efficient management of cash flows. Since Grameen Foundation has not yet identified the issuer of the bond, there is still significant work required to complete the design of the bond before proceeding to structure it.

Grameen's **immediate priorities** are as follows:

- **Onboard issuer:** Discussions with 3 potential issuers have begun. All 3 issuers are FIs based in Uganda with one being an MFI. The initial value proposition of the bond has been communicated, but the financial model has yet to be finalized and shared. This would be a key next step. Main points identified with issuers are the need for liquidity and whether there is demand within borrowers in their existing loan book and the broader market for more debt. Grameen will continue to gauge interest through subsequent conversations.
- **Deepen the pipeline feasibility work:** Grameen will continue to build on to the initial pipeline of clients in Uganda. The Lab's research has shown that there is a dearth of literature on SME finance for agriculture in Uganda that focuses on gender. Therefore, much of the needs assessment for FSPs, MSMEs, and SMEs will entail primary data collections through convenings and bilateral engagement. The Lab process has enabled Grameen to identify key technical research priorities for the pipeline feasibility. The research priorities include:
    a. Understanding affordability and accessibility of existing debt-based financial products available to SMEs from FSPs.
    b. Understanding the climate and gender alignment of existing SMEs and key interventions through the TA facility to boost resilience and gender outcomes.

Grameen **medium-term priorities** are as follows:

- **Secure donor commitments for the Technical Assistance (TA) facility:** The first step in this process would be **to finalize** the TA facility's technical and business plan. The technical plan will focus on gender mainstreaming and climate resilience advisory services to borrowers and the business plan will focus on the governance structure, partnerships (primarily with BDSPs), and funding needs.
- **Secure an additional USD 625,000 for the development phase.** Funds will cover costs for onboarding a broker, an independent rating agency, an ESG impact consultant, hiring additional staff, travel expenses, and organizing a launch event.
- **Investor engagement:** Continue to engage DFIs to assess investment appetite, especially to come in as Class B investors as a bigger tranche of Class B investors enhances the coupon rate being offered to Class A investors. Continue to engage

domestic institutional investors as well as scope competitive value offerings for domestic retail investors.

Grameen's **long-term priorities** are as follows:

- **Plan for replication:** After the initial issuance, Grameen will develop a strategy for replicating the bond in Ghana and the Philippines, leveraging their local presence and experience in these countries. Nigeria and Kenya are considered potential future expansion markets due to their market appetite for gender-focused investing and financial innovation (see *Table 3*).

Figure 2. Target Market Map.

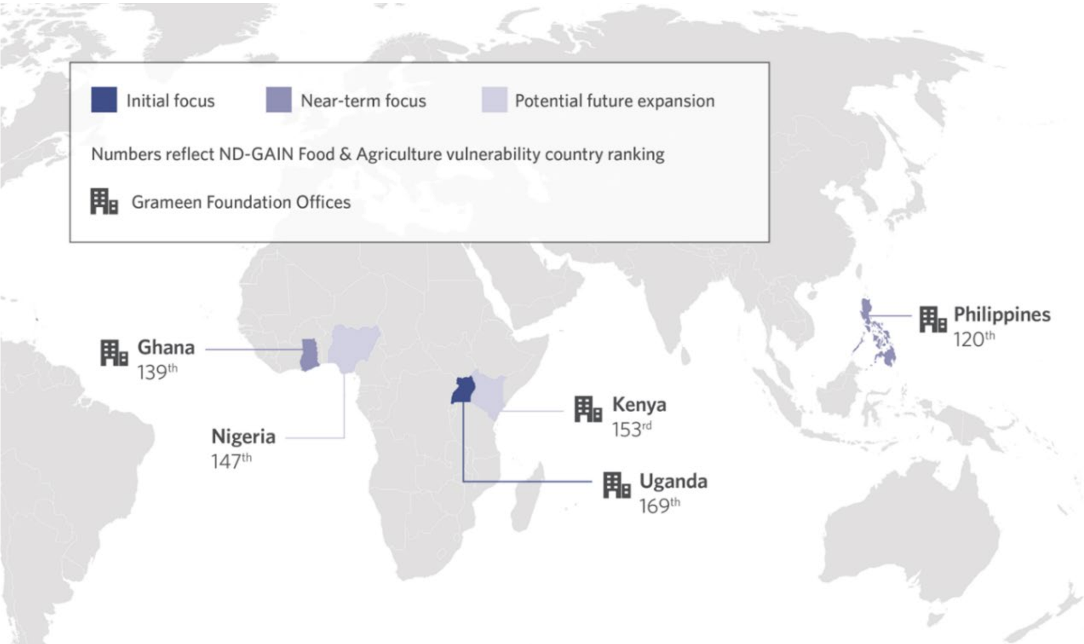


Table 3: Target market analysis

Target market	Climate and gender vulnerabilities	Bond issuance considerations
Ghana	• **Climate Impact**: Ghana's food and agriculture sector ranks 139th out of 185 countries in climate vulnerability (ND-GAIN, date unknown). The country faces significant risks from droughts, coastal erosion, floods, and landslides, which particularly affect rural populations dependent on agriculture (World Bank, date unknown). • **Gender Issues:** Women constitute half of the country's crop producers, with 69% of the female working population engaged in agriculture compared to 66% of men (Malabo Montpellier Panel, 2023). Challenges include lack of land ownership, systemic barriers to accessing finance, and underrepresentation (IIED, 2022).	• **Local Presence:** Grameen's office in Ghana facilitates smoother engagements with stakeholders like bond issuers, FSPs, BDSPs, and agri-MSMEs, and leverages in-country knowledge. • **Bond Framework:** While Ghana has not yet issued gender bonds, the Ghana Fixed Income Market Rules reference relevant international standards, providing a solid foundation for future issuances (ICLG, 2024). The Ghana Stock Exchange's recent promotion of gender bonds to support women-owned businesses is promising (ICLG, 2024).

Philippines	• **Climate Impact:** The Philippines' food and agriculture sector ranks 120th out of 185 countries in climate vulnerability (ND-GAIN). Flooding poses a significant risk; for instance, a 2021 typhoon caused approximately USD 215m in flooding damage to crops and farmland (Oxfam America, 2022). For context, the agriculture sector contributes 15% of GDP and employs a third of the population (World Bank, 2021b). • **Gender Issues:** The agriculture sector is male dominated, with only 23% of women in the workforce as farmers (ILO, 2023). Women face significant challenges, including a 9% wage gap and limited access to training and advancement (ILO, 2023).	• **Local Presence:** Grameen's office in the Philippines allows for smoother engagements with relevant stakeholders, and leverages in-country knowledge. • **Successful Precedent:** In 2023, the Asian Development Bank supported the first-ever gender bond in the Philippines, boosting lending to women entrepreneurs (ADB, 2023b). This sets a precedent and potentially builds investor confidence around the InvestHER Bond.
Nigeria	• **Climate Impact:** Nigeria's food and agriculture sector ranks 147th out of 185 countries in climate vulnerability (ND-GAIN, date unknown). The country faces increased temperatures, floods, and droughts, threatening food security and water availability (World Bank, 2021c). Agriculture accounts for 24% of GDP and is dominated by smallholders with limited mechanization (World Bank, 2021c). • **Gender Issues**: Women in agriculture produce 30% less per hectare compared to men (World Bank, 2021c). Closing the gender gap could increase GDP by up to 2%, or USD 8.1 billion annually (World Bank, 2021c).	• **Strategic Proximity:** Grameen's office in Ghana provides close proximity to Nigeria, facilitating smoother engagement with local stakeholders. • **Active Gender Lens Investing Sector**: Nigeria has had a decade-long focus on financial inclusion and an active gender-lens investing sector (FSD Africa, 2020). The Nigerian Exchange Group's commitment to gender equality and innovative financial instruments like gender bonds underscores potential (NGX, 2024).
Kenya	• **Climate Impact:** Kenya's food and agriculture sector ranks 153rd out of 185 countries in climate vulnerability (ND-GAIN). The country faces increased rainfall intensity, flooding, and prolonged droughts, threatening agricultural yields and food security (World Bank, 2021d). • **Gender Issues:** Approximately 75% of the female labor force works in agriculture compared to 53% of men (World Bank, 2021d). Women face an 8% agricultural productivity gap and are among the highest risk groups regarding climate hazards (KIPPRA, 2020; UN Women, 2019).	• **Local presence:** Grameen's office in Kenya allows for smoother engagements with relevant stakeholders, and leverages in-country knowledge. • **Innovative Financial Landscape:** Kenya's financial sector, including women-focused microfinance institutions, creates a strong foundation for the InvestHER bond (FSD Africa, 2020). • **Green Finance Commitment:** The Kenya Green Bond Programme and the issuance of the Kenya Sovereign Green Bond highlight the country's commitment to green finance (The Star, 2023).

4. FINANCIAL IMPACT AND SUSTAINABILITY

4.1 QUANTITATIVE MODELING

The Lab Secretariat, with input from Grameen, developed a financial model to test the sensitivity of the base case assumptions for the InvestHER bond. The modeling had the following objectives:

1. How much profit can an issuer generate on this transaction within reasonable constraints?
2. What would be the IRR of the project if the issuer had invested their own capital?
3. To what extent can the guarantee and the introduction of concessional investors (B Share) in the investor pool boost the value proposition for the issuer and reduce the interest rate that is charged to the borrowers?

The model contains two borrower archetypes: SMEs and FSPs. For analytical purposes, the model was built to accommodate a single set of assumptions for the loans made out to SMEs and the same for the FSPs which are disaggregated in greater detail in section 5 (see tables 4 and 5). Following are the core assumptions that were used to build the base case for the USD 25m, 5-year bond:

Table 4: Base case assumptions for coupon holders and borrowers

Stakeholder	Volume	Interest Charged/Paid	Payment Frequency
SMEs	$5,000,000 (20%)	25% pa	Quarterly
FSPs	$20,000,000 (80%)	21% pa	Semi-Annual
Class A Coupon Holders	$12.5m (50%)	15% pa	Semi-Annual
Class B Coupon Holders	$12.5m (50%)	10% pa	Semi-Annual

Table 5: Base case assumptions for the provision of the guarantee and fees

Stakeholder	Volume	Interest Charged/Paid
SMEs	$5,000,000 (20%)	25% pa
FSPs	$20,000,000 (80%)	21% pa
Class A Coupon Holders	$12.5m (50%)	15% pa
Class B Coupon Holders	$12.5m (50%)	10% pa

The model assumed that the proceeds from the bond would be fully lent out within the first quarter of the issuance and the issuer would not invest any of its capital. A fundraising guarantee was also modeled which would protect 50% of the principal of the investors, thereby, lowering the coupon rate by 2% for both A Share and B Share investors. Assuming the issuer would invest any residual capital that would generate the same return as the weighted average return for the coupon holder, the results of the modeling showed that the issuer would make a profit of USD 7.7m by the end of the transaction on top of the 1% issuer fees. Assuming the issuer would finance this transaction from its balance sheet, the IRR came out to be ~9.66%.

Assuming the minimum acceptable profit for the issuer by the end of the transaction at USD 5m, the modeling shows that the minimum interest rate charged to FSPs, and SMEs would have to be around ~18.5% which would be considered moderately concessional in the agriculture sector in Uganda.

4.2 PRIVATE FINANCE MOBILIZATION AND REPLICATION POTENTIAL

Private capital mobilization will happen through three main levers in this transaction:

1. A fundraising guarantee that will lower coupon payments thereby allowing the issuer to lend at more favorable terms to borrowers.
2. A potential portfolio-level guarantee for the FSPs (not modeled) that will incentivize FSPs to charge lower interest to the MSMEs thereby increasing the number and volume of loans.
3. Class B investors that would accept a lower return on their investment thereby boosting the value proposition for Class A investors.

Reducing the proportion of B Share investors to zero and removing the guarantee provision reduces the profit for the issuer by 45% and reduces the IRR to 1% which demonstrates the importance of concessionality in this vehicle. The concessionality also enables concessional investors to influence the issuer to lend within certain constraints to achieve the environmental and social objectives of the transaction.

5. ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACT

Aiming to reach at least 3,828 women-owned or led agri-MSMEs in Uganda over the course of five years.

The core mandate of the InvestHER Climate Resilience Bond is to build the climate resilience of women in agrifood systems. In this context, climate resilience refers to enhancing the capacity of women to endure and adapt to climate-related shocks and stressors (see glossary). The bond achieves this through three mechanisms, (1) financing the rural expansion of women-owned or led growth-stage agri-SMEs that offer CSA products and services, (2) lending to FSPs and supporting the development and provision of women-tailored financial products and services to primarily women-owned or led agri-MSMEs, and (3) providing TA to growth-stage agri-SMEs, FSPs, and through BDSPs to promote gender-sensitive practices and CSA.

The figures in Tables 6 and 7 are estimates derived from research conducted by Grameen Foundation during their June 2024 field visit, comparable instruments (see Table 2), and data collected from Ugandan growth-stage agri-SMEs that have participated in the ClimateShot Investor Coalition (CLIC) Agrifood Investment Connector (see Annex 3 for operating assumptions).

The bond is expected to finance **10 women-owned or led growth-stage agri-SMEs**, supporting their expansion into rural areas (see Table 6). The loan proceeds will allow these enterprises to expand their operations, with a focus on reaching more women farmers (see 5.1 for more detail).

Table 6: Issuer lending portfolio.

Borrower[2]	Enterprises reached	Number of loans	Avg. loan size (USD)	Total loan portfolio (USD)	Women-owned or led enterprises reached	Hectares[3] reached
Growth-stage agri-SMEs	10	10	500,000	5,000,000	10	450,000
Tier-2-3 FSPs	(see Table 7)	4	2,500,000	10,000,000	(see Table 7)	(see Table 7)
Tier-4 FSPs	(see Table 7)	4	1,500,000	6,000,000	(see Table 7)	(see Table 7)
Non-bank financial institutions and fintechs	(see Table 7)	8	500,000	4,000,000	(see Table 7)	(see Table 7)
Total	**10**	**26**	**-**	**25,000,000**	**10**	**450,000**

[2] See Glossary for the definition of Tier 1 and Tier 2 FSPs
[3] See Annex 3 for impact modelling assumptions

The bond will **additionally finance 16 FSPs** (see Table 7) — including Tiers 2 and 3 banks (FINCA, Opportunity Bank, PRIDE, Ugafode) , Tier-4 FSPs (SACCOs, Community-based MFIs, and non-bank financial institutions (NBFIs) and fintechs. These institutions are expected to provide 15,200 loans to 3,285 agri-MSMEs (see Annex 1 for operating assumptions). Nearly **100% of the loans and the value of loan proceeds** will be allocated to agri-MSMEs that are women-owned or led.

Table 7: FSPs (Tier 1, 2, and NBFIs and fintechs) lending portfolio

Borrower	Enterprises reached	Number of loans	Avg. loan size (USD)	Total loan portfolio (USD)	Women-owned or led enterprises reached	Hectares reached
Medium-sized enterprises	50	100	25,000	2,500,000	48	10,000
Small-sized enterprises	100	400	7,000	2,800,000	95	10,000
Micro-sized enterprises	3,675	14,700	1,000	14,700,000	3,675	3,675
Total	**3,825**	**15,200**	**-**	**20,000,000**	**3,818**	**23,675**

The InvestHER Climate Resilience bond is expected to provide loans, either directly or indirectly through FSPs, to 3,825[4] agri-MSMEs; **women-owned or led enterprises account for nearly 100% of loan beneficiaries** (3,818[5] agri-MSMEs). The bond will reach approximately **470,000[6] hectares of farmland**, meaning that they are potentially managed more sustainably through trained women farmers, and the implementation of CSA practices such as organic fertilizers, solar-powered irrigation pumps, and climate-resilient crop varieties (see Table 8).

5.1 ENVIRONMENTAL IMPACT

INCREASED CLIMATE RESILIENCE

The InvestHER bond contributes towards the climate resilience of women through three mechanisms:

1. **Bond proceeds will fund the rural expansion of women-owned or led growth-stage agri-SMEs that engage in CSA, enabling them to scale operations and reach more women farmers.** By expanding female agent networks and implementing marketing strategies like demonstration plots and farmer field days that integrate gender considerations (e.g., childcare), these enterprises can effectively promote CSA

[4] The total enterprises reached from Tables 6 and 7(10 and 3,825).
[5] This figure is sum of the women-owned or led enterprises reached in Tables 6 and 7 (10 and 3,818).
[6] This figure is the sum of hectares reached in Tables 6 and 7 (450,000 and 23,675).

among women farmers. For instance, under the ‘Women's Empowerment through Climate-Resilient Agriculture Value Chains’ program, demonstration plots were used to train women rice farmers on high-yield, short-cycle seeds, motorized irrigation, and improved crop management, leading to a 37% reduction in labor and a 10% decrease in water usage (UN Women, 2022).

2. **Lending to FSPs and developing women-focused financial products for agri-MSMEs improves access to finance, enabling women entrepreneurs — who often prioritize sustainability — to invest in climate-smart practices (BII, 2024).** This is critical as women in agriculture are particularly vulnerable to climate hazards and often lack the capital needed to protect their businesses (BII, 2024). With increased access to finance, they can adopt resilient technologies, maintain productivity, and secure their livelihoods.
3. **Providing TA to growth-stage agri-SMEs, FSPs, and through BDSPs promotes gender-sensitive practices and CSA.** By integrating CSA, women farmers can better manage climate risks, securing their livelihoods and contributing to long-term agricultural sustainability. For a sample list of CSA practices and technologies that enhance the climate resilience of women farmers, see Table 8.

Table 8: Sample CSA practices and technologies, and their contribution to climate resilience

CSA practice / technology	Contribution to climate resilience
Organic fertilizers	Organic fertilizers enhance soil fertility and structure, which improves water retention and reduces erosion, helping crops withstand extreme weather (Nabyonga et al., 2022). This practice is critical for Uganda, where 41% of agricultural land is degraded (World Bank, 2021e).
Solar-powered irrigation pumps	Solar irrigation pumps are crucial for strengthening climate resilience, especially since over 50% of crops in Uganda dry up due to reliance on rainfed cultivation (BFGA, 2024). By providing reliable water access, these pumps help women secure better yields even during dry seasons (BFGA, 2024).
Climate-resilient crop varieties	Climate-resilient crops like cassava, which thrive in marginal, less fertile soils with minimal inputs, are crucial for strengthening climate resilience (Immanuel et al., 2024). These crops provide stable food and income during extreme weather, thus reducing vulnerability to climate-induced shocks (GCA, 2024).
Early warning systems	Early warning systems provide critical insights into weather conditions, especially floods and droughts, which are among Uganda's most severe climate challenges (World Bank, 2019b). With this information, women can make informed planting and harvesting decisions, reducing crop failure risk (FAO, 2021).
Cold storage facilities	By preserving food products longer and reducing waste, cold storage facilities ensure a more stable food supply, especially during periods of climatic stress like droughts or heatwaves (FAO, 2021).

5.2 SOCIAL AND ECONOMIC IMPACT

IMPROVED FOOD SECURITY

The bond has the potential to address several key factors which contribute to food security:

1. **Skill Development**: The bond includes provisions for TA through BDSPs, which offer targeted training to women farmers. This training focuses on CSA practices, which are essential for adapting to and mitigating the impacts of climate change. By learning effective farm management techniques, such as proper land preparation, crop rotation, pest management, and post-harvest handling, women farmers can increase their productivity, which translates to better crop yields and a more reliable food supply, directly enhancing their food security.
2. **Crop Diversification:** The bond facilitates access to diverse seeds and other agricultural inputs through agri-MSMEs that are supported by the bond's funding. Crop diversification is essential for mitigating the risks of monocropping (Morrissey et al., 2024). By cultivating multiple crops, women farmers can secure a more reliable food supply, reduce the risk of complete agricultural productivity loss, and better withstand adverse weather conditions. This practice not only ensures consistent food availability but also enhances nutritional diversity by providing a wider range of food types, contributing to overall food security and resilience (Morrissey et al., 2024).
3. **Increased Market Access:** Greater access to finance enables agri-SMEs to build infrastructure, aggregate produce, add value, and access new markets, strengthening market linkages and benefiting farmers through better prices, reduced risks, and sustainable practices (Usman & Haile, 2022). For women farmers, easier market access lowers transaction costs and increases income, allowing them to invest in their farms, purchase diverse foods, and reduce household food insecurity (Usman & Haile, 2022).

INCREASED AGENCY OF WOMEN ENGAGED

The InvestHER bond and TA facility enhance women's agency by directly supporting women-owned or led agri-MSMEs that serve women smallholder farmers. The TA facility offers training tailored to challenges such as low literacy, helping women better manage financial resources, develop business management skills, understand loan products, and improve financial planning. As women gain these skills, they become more capable leaders, making informed decisions and actively participating in community and household processes (WRI, 2023). This strengthens their technical capabilities and leadership roles, fostering greater agency and resilience. Enhanced agency also empowers women to make timely decisions crucial for climate resilience, advocate for their needs, and improve the rate of meaningful climate-smart agriculture adoption (UNFCCC, 2023).

NEXT STEPS

Grameen's next steps are listed as follows:

- **Immediate Term:** Raise funding of USD 625,000 to set up the bond framework and start engaging investors. This funding will cover costs such as onboarding a broker, an independent rating agency, and an ESG impact consultant, hiring additional staff, travel expenses, and organizing a launch event. Parallel to this, secure donor commitments for the TA facility and major investor pipeline.

- **Medium to Long-Term**: Develop a strategy for replicating the bond in other countries, such as Ghana and the Philippines, leveraging Grameen Foundation's local presence and experience. Other potential future expansion markets include Nigeria and Kenya, which have demonstrated market appetite for gender lens investing and financial innovation.

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ANNEX 1: UGANDA'S ND-GAIN FOOD AND AGRICULTURE VULNERABILITY AND WOMEN'S AGRIFOOD EMPLOYMENT

Figure A1: ND-GAIN Food and Agriculture Vulnerability vs Readiness

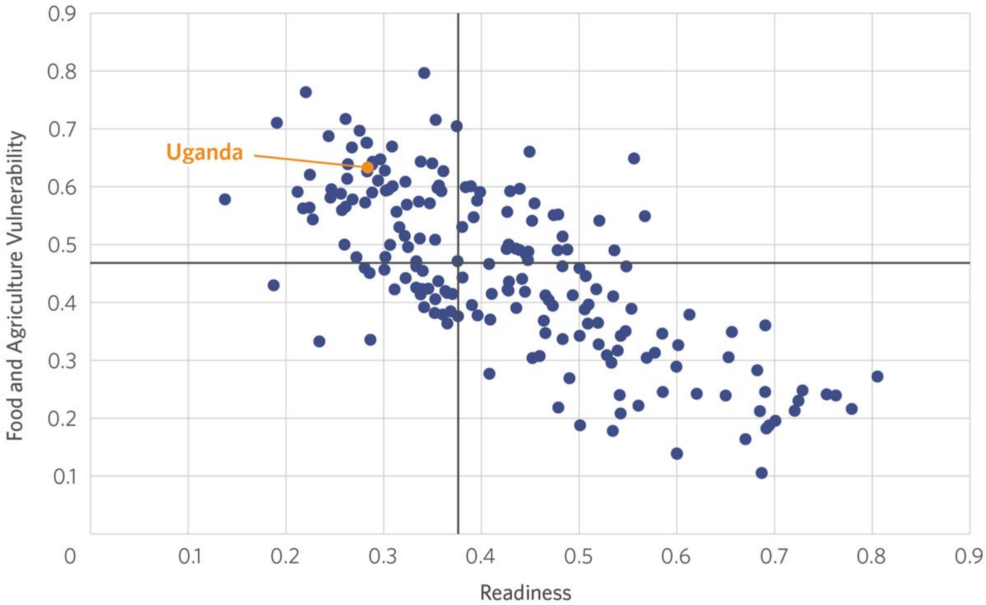
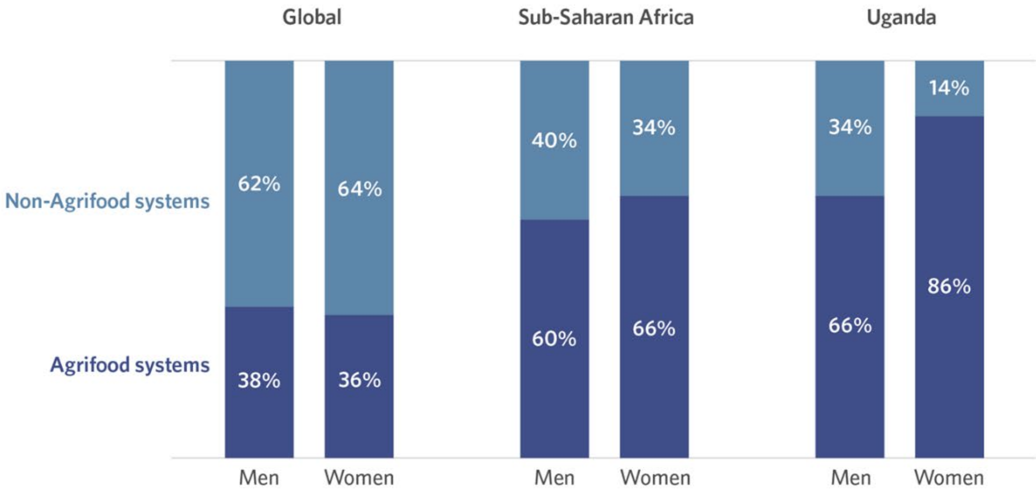


Figure A2: ND-GAIN Food and Agriculture Vulnerability vs Readiness



ANNEX 2: BARRIERS AND INVESTHER VALUE

Table A1: Barriers and InvestHER Climate Resilience Bond Added Value

Barrier	InvestHER added value	Primary value-add instrument component
Lack of female-tailored financial products and services	• The TA facility will play a critical role in supporting the provision of financial products and services tailored for women's needs. This includes, but is not limited to: o Support on the lending criteria to ensure that loans are used for its intended result/impact. o Provide ongoing training for loan officers on gender-sensitivity, focusing on the unique challenges facing women in agriculture (e.g., low literacy, seasonal cash flows, etc.) o Support on the design of loan products with flexible repayment schedules that align with the cash flow patterns of women in agriculture, such as those based on harvest and production cycles. o Partner with BDSPs to deliver financial literacy, credit and business management training specifically designed for women entrepreneurs. o Equip FSPs and BDSPs with the skills to collect and analyze gender-disaggregated data to better understand and meet the needs of their female clients. o Support on the provision of on-site childcare at branches or during training sessions.	TA facility
Limited access to CSA informati on and training for women farmers and entrepre neurs	• The TA facility will work closely with BDSPs to ensure that the training content and delivery methods are gender-sensitive and accessible to women farmers and entrepreneurs. This includes tailoring the training to the farming activities women typically engage in (e.g., food staples such as maize, beans, cassava, sweet potatoes, and groundnuts), and scheduling sessions at times and locations that are convenient for them. • Trained agri-MSMEs will be assisted to develop or enhance supply chains that incorporate CSA, to develop for example smaller packets of drought-resistant seeds and organic fertilizers such as high-quality biochar or vermicompost, to ensure women farmer access. These are often out of their reach. By ensuring these agri-MSMEs are equipped with gender-sensitive CSA knowledge, the TA facility helps bridge the gap, enabling women farmers to gain easier and more equitable access to essential resources. • The TA facility will work with BDSPs to enhance the agri-SMEs' products and service channels to enhance their marketing plans to reach women clients.	TA facility
High transaction costs	• By utilizing local FSPs as last-mile distributors, the instrument ensures efficient and effective delivery of financial services to rural agri-MSMEs. These FSPs can leverage their 'social collateral,' local knowledge, and existing infrastructure to reach women farmers more cost-effectively. The incentive for the FSPs to increase lending will be through a combination of risk reduction through portfolio guarantee and below market lending by the issuer which will be compensated by B share investors.	Channeling capital to MSMEs through local FSPs, and portfolio guarantee

ANNEX 3: IMPACT MODELING

ISSUER AND FSP LENDING PORTFOLIO ASSUMPTIONS

The figures presented in Tables 6 and 7 are grounded in a set of assumptions derived from a variety of sources. These sources include research conducted by Grameen Foundation during their field visit to Uganda, interviews conducted with agri-SMEs, incubators, and other relevant stakeholders throughout the Lab process, as well as a thorough literature review and CPI's analysis of the Agrifood Investment Connector agri-SME applicants. Below are the key assumptions made and the rationale behind their application in our impact analysis. These figures may be adjusted following further consultations with agri-MSMEs to ensure they more accurately reflect the actual reach and impact of the InvestHER bond.

Table A2: Operating assumptions used to calculate the InvestHER bond's reach and impact

Assumption	Rationale	Source
The average loan size of Ugandan growth-stage agri-SMEs is USD 500k.	1. Analysis of the 2023 and 2024 Agrifood Investment Connector cohorts (including nine growth-stage agri-SMEs in Uganda) showed an average debt financing need of USD 430k. 2. The Ugandan Yield Fund, which provides growth capital to agri-SMEs, reports that funding needs typically range from USD 250k to USD 2 million. 3. Grameen interviews with some growth-stage agri-SME candidates reveal funding needs between USD 1m and 3m. 4. Aceli Africa's Year 3 Learning Report states that the average loan size agri-SMEs across Kenya, Rwanda, Tanzania, Uganda, and Zambia was USD 97k. Although these aren't specifically growth-stage. Given the range of capital requirements, the USD 500k amount was chosen as a reasonable midpoint.	CPI analysis, Ugandan Yield Fund, Aceli Africa
The average loan size for medium-, small- and micro- agricultural enterprises are USD 27k, USD 7k, and USD 1k, respectively.	Based on interviews conducted by Grameen Foundation with SINA, Hive Collab, FSPs, and agri-SMEs.	Grameen Foundation interviews
FSPs lending portfolio consists of 50 medium-sized enterprises, 100 small-size enterprises, and 3,675 micro-enterprises.	1. FSPs will lend 100 loans to medium enterprises, 400 to small enterprises, and 14,700 to micro enterprises over the first two years of the bond. 2. Medium enterprises are expected to take one loan annually (two farming seasons), while small and micro enterprises take one loan per season (four loans in two years); thus totaling 50 medium, 100 small, and 3,675 micro enterprises. 3. This is a conservative estimate, as we expect 100% retention of agri-MSMEs over the lending period.	Grameen Foundation interviews

RESULTS CHAIN FOR SAMPLE CSA PRACTICES

Table A3: Sample outputs, outcomes, and impacts for CSA practices

Intervention	Output	Outcome	Impact
Solar - powered irrigation pumps	1. Number of diesel-powered water pumps replaced with solar-powered models. 2. Total number of women farmers who received training or guidance. 3. Total installed solar capacity (kW) for irrigation.	1. Percentage increase in the agricultural yields of crops irrigated using solar-powered pumps. 2. Percentage change in the income of women farmers, measured before and after the introduction of solar-powered irrigation. 3. Efficiency in water use due to better irrigation techniques made possible by solar-powered pumps. 4. Cost savings associated with reduced spend on diesel. 5. Additional free time available to women farmers due to the adoption of more efficient irrigation methods.	1. Area (ha) more resilient to extreme weather. 2. Number of women farmers reporting increased adaptive capacity through improved preparedness/ knowledge.
Precision fertilizer application	1. Total number of women who have received training on proper fertilizer use, including timing, quantity, and method. 2. Amount of fertilizer provided to women farmers, measured in terms of type (organic, inorganic, etc.) and volume. 3. Total number of demonstration plots created to showcase the benefits of efficient fertilizer use.	1. Percentage increase in crop yields reported by women as a direct result of efficient fertilizer application. 2. Decrease in the cost of fertilizers reported by women due to more efficient use. 3. Changes in soil quality indicators on women-managed plots, such as nutrient levels, organic matter content, or pH balance, due to efficient fertilizer use.	1. Area (ha) more resilient to extreme weather. 2. Number of women farmers reporting increased adaptive capacity through improved preparedness/knowledge

ANNEX 4: TECHNICAL ASSISTANCE FACILITY

Technical Assistance Facility

The technical assistance provided by Grameen Foundation can be broadly categorized into two main areas (see Figure 1):

1. Bond design, and risk and impact monitoring support to the Issuer

The TA facility will work closely with the bond issuer to ensure the bond's design aligns with the intended gender and climate resilience objectives. This involves defining bond terms and working with an impact consultant to establish criteria and performance metrics for evaluating the impact of bond proceeds. The impact consultant will identify material risks and opportunities, develop KPIs, and set up systems for ongoing monitoring and reporting. Additionally, a comprehensive reporting framework will be established to align with global standards, ensuring transparency, accountability, and effectiveness in achieving the bond's intended social and environmental impacts.

2. Gender and climate-resilience mainstreaming to the borrowers at various levels

The TA facility will engage directly with FSPs and BDSPs to integrate gender and climate resilience into their operations and product offerings. For FSPs, this will involve developing and refining financial products tailored to women, ensuring better access to credit with flexible terms and lower interest rates. The goal is to promote responsible lending practices that empower women without exacerbating their vulnerabilities. Additionally, FSPs will be trained on the climate relevance of their products and how to enhance it. This education will help them articulate how their financial services support CSA, making these offerings more appealing to investors and clients focused on sustainability.

For BDSPs, the TA facility will engage with organizations like the Africa Management Institute, CoHive, SINA, TRIAS, CNAS, Innovation Village, and universities to integrate gender and climate resilience into their training programs. These programs will help agri-MSMEs understand and enhance the climate relevance of their products and services, thereby enhancing their marketability and adoption among women farmers.