

PROJECT EXEMPLAR

Gender-Responsive DCAS in Rwanda



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ADAPTATION

KEY PROJECT INFORMATION

Country / Region

Rwanda, East Africa

Sector

Food Security and Agriculture

Investment Value

TBC

Implementation Period

Under AAAP, launched 2021, ongoing

Key Partners

CGIAR (Alliance Bioversity-CIAT), AfDB, Agriterra, BK Techhouse, Viamo, AIF

Beneficiaries

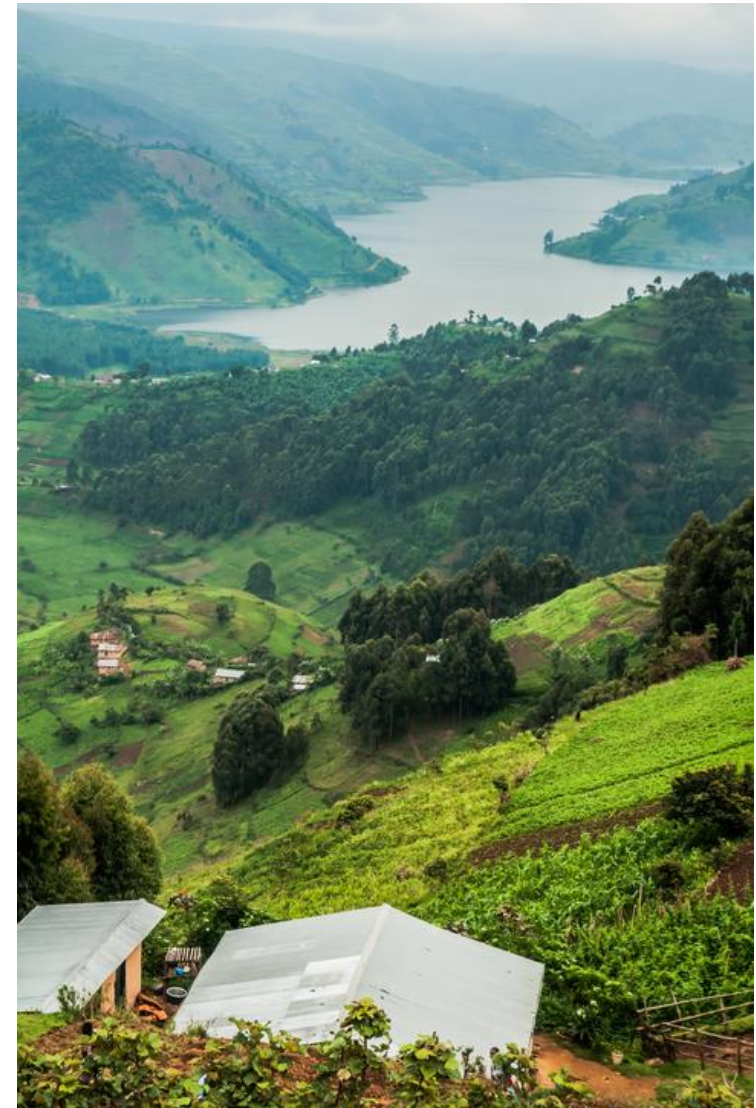
Smallholder farmers, with a focus on women farmers

THE ADAPTATION STORY

Advancing Gender-Responsive Digital Climate Advisory Services in Rwanda

Rwanda's smallholder farmers face costly climate volatility: erratic rainfall, intra-season dry spells and flooding events that trigger erosion and landslides, often after households have already invested in seed and fertilizer. Digital Climate Advisory Services (DCAS) help farmers act earlier, aligning planting windows and input timing with climate-informed, risk-reducing practices, and improve their ability to respond to shocks.

This case examines Rwanda's private-sector DCAS landscape, drawing on key informant interviews with providers including Agriterra, BK Techhouse, Viamo and Africa Improved Foods, complemented by a stakeholder workshop. Women farmers face gender-specific barriers that limit both uptake and impact: lower control over phones and airtime, lower literacy and digital confidence, tighter time constraints from unpaid care work, and reduced decision-making power over inputs, plots and sales. Where design ignores these realities, providers see lower engagement and weaker agronomic results.



What was GCA's Role?

This case study was developed under the Africa Adaptation Acceleration Program (AAAP), launched by GCA and the African Development Bank in 2021 and endorsed by the African Union. In partnership with CGIAR through the Alliance of Bioversity International and CIAT, GCA acted as a solutions broker, commissioning the provider interviews and stakeholder workshop and translating findings into practical guidance for designing, financing and scaling gender-responsive DCAS, with overall technical guidance from GCA's Food Security team.

Results and Impact

Interviews consistently show DCAS working best when aligned with extension systems and cooperative structures, which strengthen trust, uptake and retention, lower last-mile delivery costs and make outcomes more investable. Viamo's voice and IVR approach demonstrates how channel fit supports inclusion for low-literacy users, while partnerships enable reach, reduce delivery costs and provide legitimacy and trust.

The assessment also surfaced clear constraints. Providers still rely on donor and public funding, user fees are rare and willingness to pay is largely unknown. Fragmentation across climate, agriculture and ICT institutions raises transaction costs, and advisories filtered through cooperatives, households or buyers weaken feedback loops, making it harder to tailor content and prove impact. Gender-blind models risk counting reach without agency, depressing uptake among women and undermining partner confidence and sustainability.

Climate hazards, impacts and prioritized adaptation measures

KEY CLIMATE HAZARDS	IMPACTS ON INFRASTRUCTURE, SERVICES AND USERS	PRIORITISED ADAPTATION MEASURES
Erratic rainfall and shifting seasons	Infrastructure: Pressure on climate data systems to deliver reliable localized forecasts. Services: Generic advisories lose relevance for planting-window decisions. Communities: Input investments lost to poorly timed planting, with women least able to absorb losses.	Climate-informed planting-window and input-timing advisories through SMS, voice and radio.
Intra-season dry spells	Infrastructure: Stress on water and irrigation systems during critical growth stages. Services: Advisory demand spikes mid-season when channels are least coordinated. Communities: Crop losses after seed and fertilizer investments are already made.	In-season advisories on moisture management and risk-reducing practices, reinforced by extension.
Flooding	Infrastructure: Damage to roads, power and connectivity that disrupts delivery channels. Services: Interrupted advisory delivery when timely warning matters most. Communities: Localized flooding damages plots and assets in affected areas.	Flood early warning integrated with DCAS and anticipatory guidance before events.
Erosion and landslides	Infrastructure: Degradation of hillside farmland and rural infrastructure. Services: Advice must integrate land management, beyond weather information alone. Communities: Loss of productive land and heightened risk on steep smallholder plots.	Advisories promoting soil conservation and risk-reducing land management practices.

KEY LESSONS

What we have learnt

DCAS performs best when built around extension and cooperative workflows rather than delivered as a standalone service: alignment cuts last-mile costs and boosts trust and retention. Coordination matters, since fragmentation across climate, agriculture and ICT actors slows scaling and makes it harder to standardize content and measure impact. Inclusion must be designed from the start, fitting channels, timing and language to shared-phone, low-literacy and time-constrained realities, with voice-based delivery a proven fit. Above all, reach is not agency: women's access is often mediated by cooperatives and household dynamics, so tracking decision-making power and outcomes beyond access is essential for meaningful impact.

Replicability

Sustainability is strongest when DCAS is embedded in value chains or broader systems rather than treated as a standalone service. Embedding creates a stable financing logic and lowers marginal delivery costs, while bundling advisories with inputs, off-take, insurance or finance offers the most viable path to value capture. A key tension is that value-chain embedding can reduce gender visibility, so explicit gender tracking is needed to scale responsibly. The model is replicable where cooperative structures and extension systems are strong, provided unit economics are proven through better evidence on cost per user, retention and willingness to pay, which is what unlocks private investment.

Actionable insights for MDBs

THEME	PRIORITISED ADAPTATION MEASURES
Extension and cooperative alignment	Finance DCAS that ride on extension systems and cooperative workflows. Alignment increases trust, uptake and retention, lowers last-mile delivery costs and strengthens the unit economics that make outcomes investable.
Gender and inclusion	Require inclusion by design: voice-based channels, timing and language that fit shared-phone and low-literacy realities, with metrics that track women's agency and decision-making, not just reach.
Coordination	Support clearer roles across climate, agriculture and ICT institutions. Fragmentation raises transaction costs and blocks the standardized content and impact measurement needed for credible monetization.
Revenue models and bundling	Back bundling of advisories with inputs, off-take, insurance and finance as the most viable path to value capture, since user fees are rare and willingness to pay remains largely unknown.
De-risking investment	Fund evidence on cost per user, retention, willingness to pay and gender-disaggregated impact beyond access. Clearer unit economics are the key to reducing perceived risk and unlocking private capital.
Embedded models	Prioritize DCAS embedded in value chains and broader systems over standalone services, pairing stable financing logic and lower marginal costs with explicit gender tracking to scale responsibly.

