Inclusive Business Analysis

Scaling maize seed production through commercially viable smallholder sourcing models

Gamo Development Association | Ethiopia

Public Report

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idh
transforming markets

Disclaimer

This study examines the projected (financial) performance of Gamo Development Association (GaDA)'s Business Model and explores and recommends potential improvements and opportunity pathways. The findings in this report have been used by IDH, GaDA and involved value chain players to shape their strategy, project design, and future business models, but these organizations cannot be held accountable for meeting any targets included in the report.

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Introduction

Smallholder livelihoods

Agriculture plays a key role in the wellbeing of people and planet. 70% of the rural poor rely on the sector for income and employment. Agriculture also contributes to and is affected by climate change, which threatens the long-term viability of global food supply. To earn adequate livelihoods without contributing to environmental degradation, farmers need access to affordable high-quality goods, services, capital, and technologies.

Inclusive Business Models

Inclusive Businesses provide goods, services, and livelihoods on a commercially viable basis, either at scale or scalable, to people living at the base of the pyramid, making them part of the value chain as suppliers and/or customers. These business models can sustainably increase the performance of farm(er)s while providing a business opportunity for the company. Using IDH's data-driven Inclusive Business methodology, IDH analyzes these models to create a solid understanding of the relation between impact on the farmer and impact on the company.

Insights & Innovations

Our data and insights enable businesses to formulate new strategies for operating and funding service delivery, making the model more sustainable, less dependent on external funding and more commercially viable. By further prototyping efficiency improvements in service delivery and gathering aggregate insights across sectors and geographies, IDH aims to inform the agricultural sector and catalyze innovations and investment in service delivery that positively impact people, planet, and profit.

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NORAD Growing Together

- The **Growing Together Program**, led by IDH in partnership with civil society (Rikolto and East Africa Grain Council) and research institutions (International Center for Tropical Agriculture - CIAT), aims to transform food systems in East Africa by enhancing food security, climate resilience, and inclusive economic growth.
- It focuses on increasing **the production of healthy, diverse foods by smallholder farmers, improving the sustainability of production landscapes, and optimising value chains for investment and trade.**
- The program targets **Tanzania and Ethiopia, with complementary activities in Kenya and Rwanda**. **It prioritises staple crops like maize, rice, wheat, legumes, oil crops, root crops, vegetables, and fruits to improve nutrition and climate resilience**. A key emphasis is empowering women and youth through commercial participation in food value chains.
- **Five strategic intervention pathways guide implementation**: convening coalitions for policy and sector reform, transforming value chains through inclusive business models, facilitating investment via Innovation and Investment Development Hubs, building climate-resilient landscapes, and generating data-driven insights for learning and decision-making.
- The program will **co-invest with 18 food businesses, mobilise USD 13 million in financing, and directly benefit 200,000 farmers and 200,000 hectares of land. It also aims to create 30,000 jobs**, half of which will be for women and youth.
- The program's sustainability is ensured through local ownership, capacity building, and embedding interventions within SME business models to drive long-term change beyond its five-year timeline.

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Abbreviations

EBIT	Earnings before interest and taxes
EBITDA	Earnings before interest, taxes, depreciation and amortization
ETB	Ethiopian Birr (currency)
FTE	Full-time equivalent
GAP	Good agricultural practices
GaDA	Gamo Development Association
GDP	Gross domestic product
HR	Human resources
IBA	Inclusive Business Analysis

IT	Information technology
MT	Metric ton (1,000 kg)
NGO	Non-governmental organization
P&L	Profit and loss statement
PICS	Purdue Improved Crop Storage
SHF	Smallholder farmer
SWOT	Strengths, weaknesses, opportunities and threats
USD	United States dollar (currency)
USSD	Unstructured Supplementary Service Data

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Report outline

To navigate between the different chapters, click on the corresponding name in the reading guide on the right of each page, and you will be taken to the first page of that chapter

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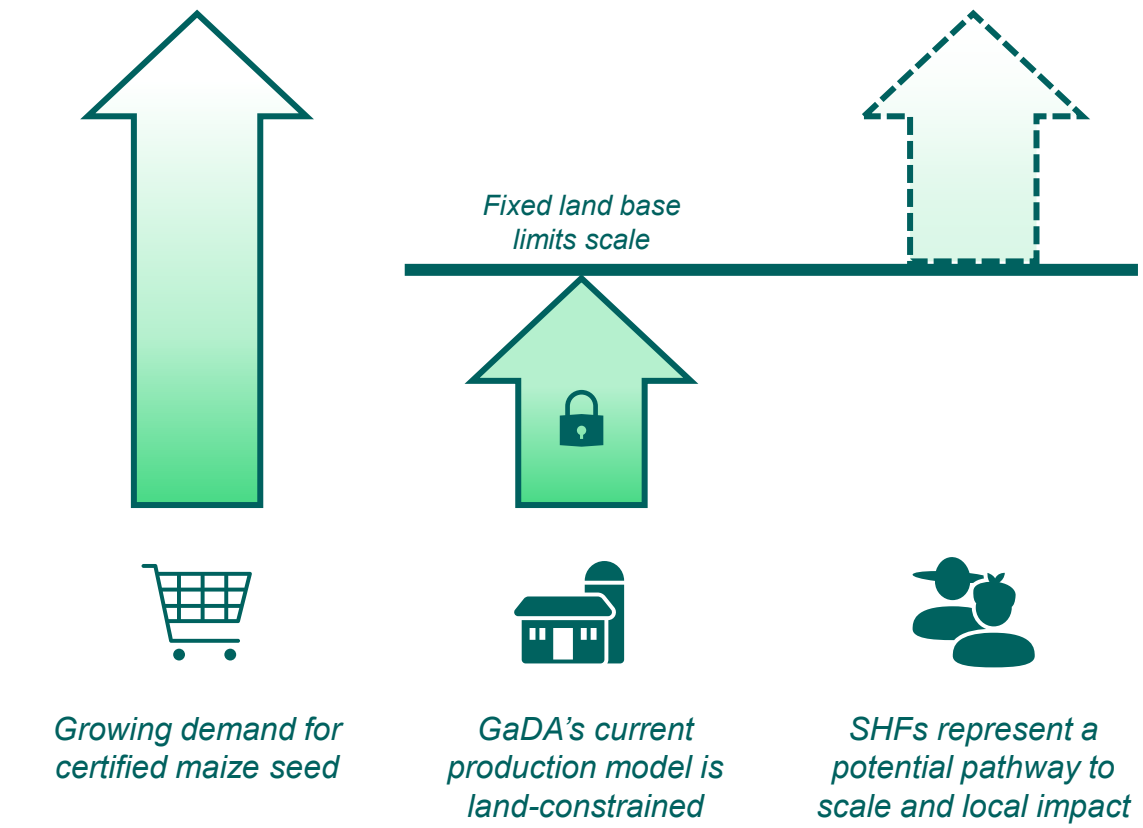
Executive summary

Rising demand for certified maize seed meets structural limits in GaDA's current production model, creating the need for scalable alternatives

- Maize is a strategic staple crop in Ethiopia, yet productivity remains below potential due to limited adoption of certified seed, constrained input use, and predominantly rainfed production systems among smallholder farmers.
- Demand for certified maize seed is increasing as government and development actors push for higher yields, improved resilience, and national food security outcomes.
- GaDA has established itself as a credible supplier of certified maize seed through its own farm and partner multiplication arrangements, delivering consistent quality under a regulated pricing environment.
- However, GaDA's current production model is structurally constrained by limited availability of its own land, restricting its ability to scale seed supply in line with growing demand.
- This Inclusive Business Analysis assesses the commercial viability, scalability, and smallholder farmer impact of expanding maize seed production through smallholder-based alternative sourcing models, to inform strategic and investment decisions.*

Growing demand meets a land-constrained production model



** This IBA is structured around a set of Learning Questions, which are detailed in the Annex.*

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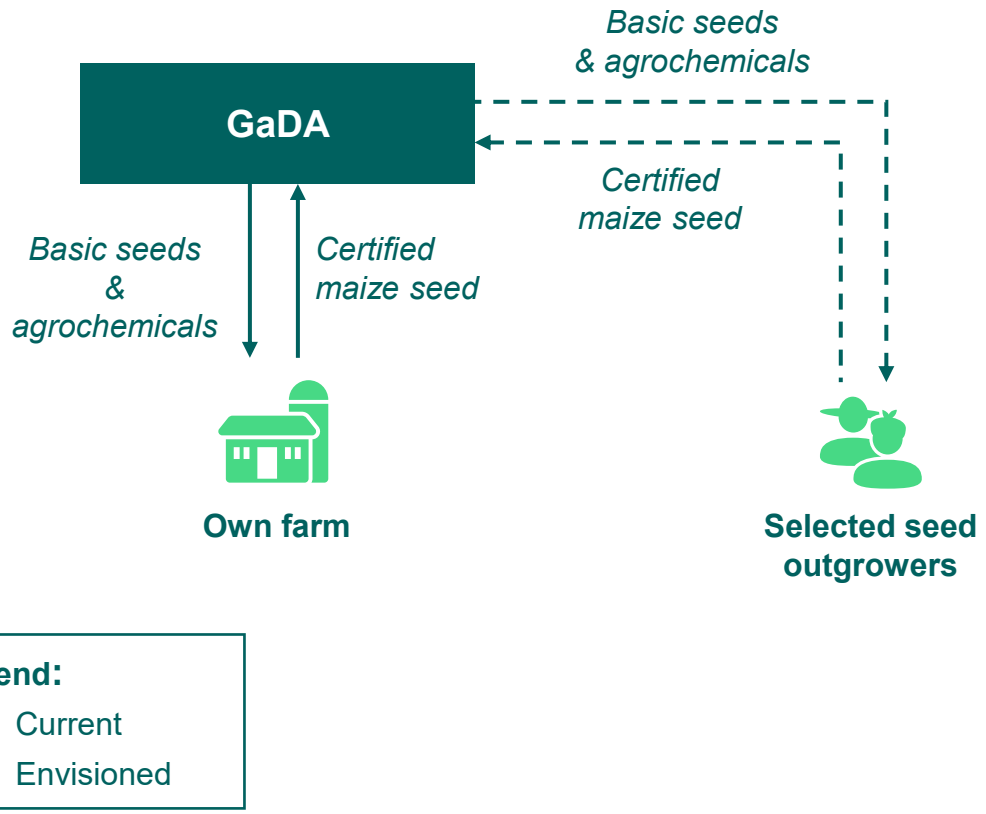
Integrating smallholders as seed outgrowers enables GaDA to scale certified seed production beyond its own land base while maintaining quality control

- GaDA's own farm provides a strong benchmark for certified seed production but remains structurally constrained by land availability, limiting further expansion under the current model.
- Integrating smallholder farmers as seed outgrowers offers a scalable pathway to expand seed production capacity while leveraging existing farming systems in the Gamo zone.
- Under an outgrower model, selected smallholders produce certified maize seed under contract, supported by GaDA through input provision, technical assistance, and guaranteed offtake.
- This approach allows GaDA to retain oversight over seed quality and certification processes, while shifting part of the production footprint beyond its own land base.
- At the same time, the model creates the potential to extend improved seed access, income opportunities, and skills development to farming communities, aligning GaDA's scale objectives with local smallholder impact.

Current production and envisioned smallholder sourcing model



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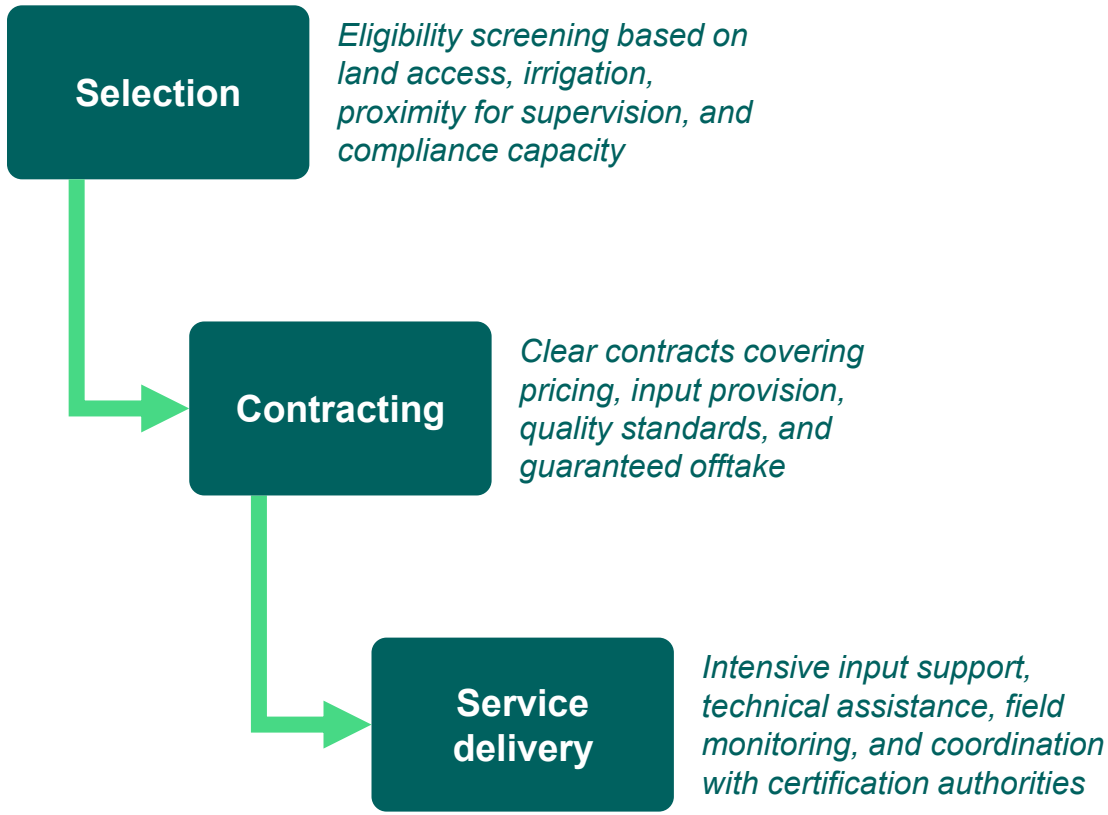
Scaling seed multiplication through smallholders requires rigorous farmer selection, clear contracting, and tightly managed service delivery

- Seed multiplication places significantly higher demands on agronomic discipline, quality control, and compliance than maize grain production, requiring a more structured farmer engagement model.
- Only a subset of smallholder farmers is suitable for seed production, based on criteria such as land access, irrigation availability, proximity for supervision, and willingness to comply with certification protocols.
- Clear contractual arrangements are required to define roles, pricing, input provision, quality requirements, and guaranteed offtake, reducing both side selling risks and production uncertainty.
- Effective service delivery is central to the model, combining timely input provision, intensive technical assistance, field monitoring, and coordination with certification and inspection authorities.
- Together, these elements determine whether smallholder-based seed multiplication can scale reliably without compromising seed quality, farmer incentives, or operational control.

Operational pillars of smallholder-based seed multiplication



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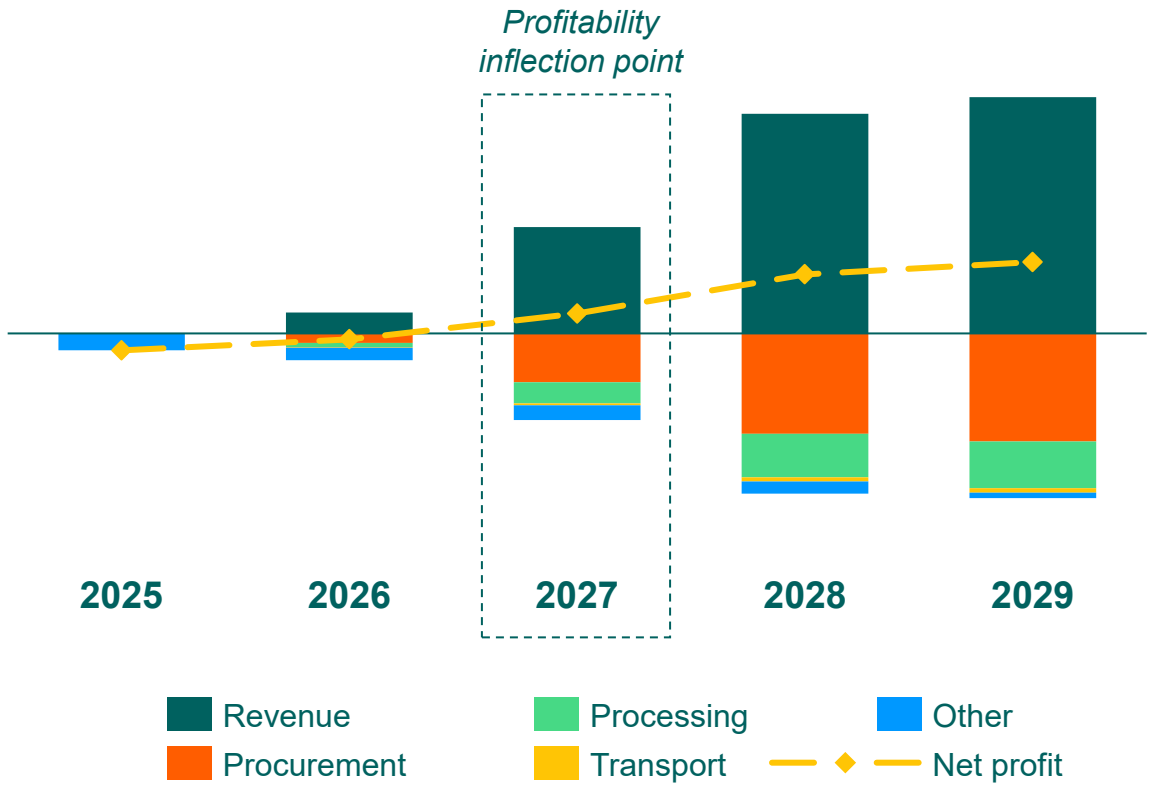
Smallholder based seed sourcing becomes commercially viable for GaDA as scale offsets higher unit costs from 2027 onward

- Smallholder seed sourcing initially operates at higher unit costs than GaDA's own production due to intensive service delivery, coordination, and farmer support requirements.
- As the number of contracted seed outgrowers increases, fixed and semi fixed costs are spread across larger volumes, while average yields improve through learning effects, training, and better agronomic practices, jointly expanding margins.
- From 2027 onward, the smallholder sourcing model reaches break even and becomes profitable for GaDA, complementing the land constrained own farm with a scalable second sourcing channel.
- While own production remains more cost efficient on a per unit basis, it cannot expand sufficiently to meet growing demand, reinforcing the strategic role of smallholders in enabling scale.
- Overall, the commercial case for smallholder sourcing depends on achieving sufficient scale alongside sustained improvements in average farmer productivity, rather than on isolated efficiency gains.

Seed production profitability for seed outgrowers (USD)



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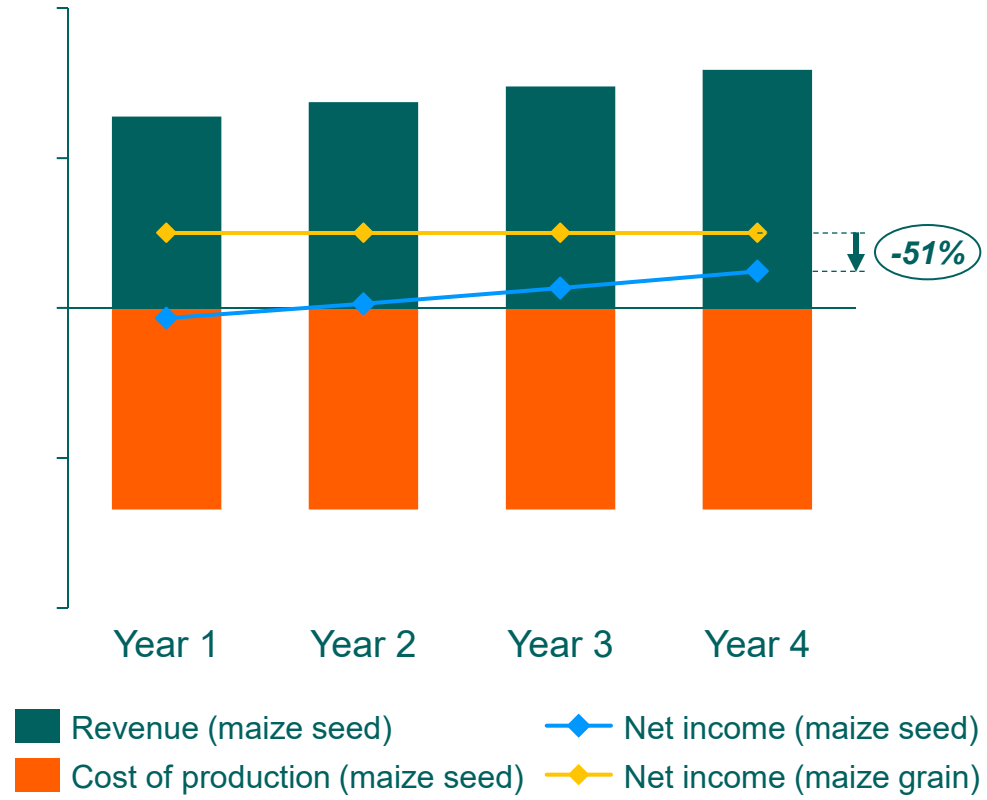
Current seed pricing offers limited farmer incentives, as maize seed farmer incomes remain ~$X to ~$X lower than maize grain farmers despite yield gains

- Seed multiplication under GaDA's model delivers higher yields for participating farmers, reflecting improved agronomic practices and access to quality inputs.
- Despite these yield gains, seed farmers earn approximately USD X less per 0.5 ha at entry yields (~2.0 Mt/ha), narrowing to ~USD X less at potential yields (~2.5 Mt/ha), under the current pricing premium structure.
- Higher production costs for seed cultivation, driven by labour requirements, certification compliance, and financing costs, outweigh the benefits of improved productivity under current price premiums.
- As a result, seed multiplication remains financially less attractive for farmers compared to maize grain production, limiting voluntary uptake and long-term participation incentives.
- This indicates that productivity improvements alone are insufficient to shift farmer behaviour, and that pricing, incentives, or complementary support mechanisms play a critical role in enabling farmer adoption at scale.

Maize seed and maize grain net income (USD/0.5 ha)



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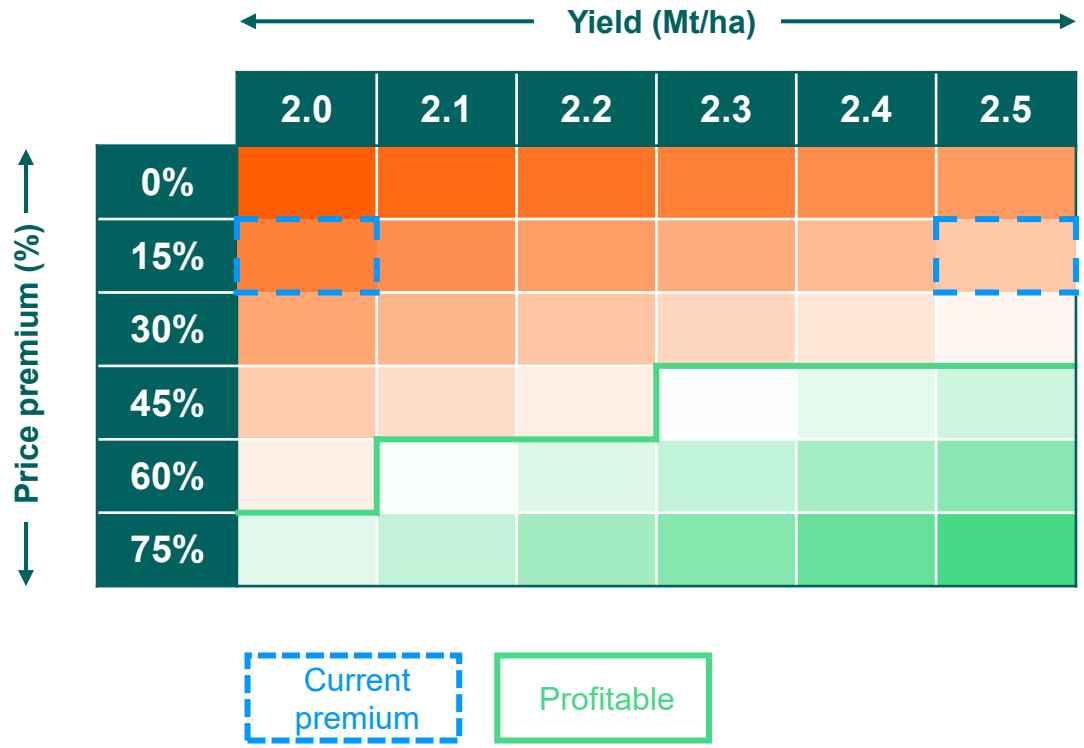
Even with significant yield improvements, closing the income gap requires pricing and incentive realignment beyond the current 15% price premiums over maize grain

- While smallholder-based seed sourcing can become commercially viable for GaDA at scale, sustained farmer participation depends on the income attractiveness of seed production relative to maize grain.
- The sensitivity analysis shows that yield improvements alone do not close the income gap for seed farmers under current pricing, with negative income differentials persisting across a wide range of realistic yields.
- Only when higher yields are combined with increased price premiums does seed production become financially attractive for farmers, indicating a narrow corridor in which incentives align.
- This highlights that pricing and complementary incentive mechanisms are critical to translate productivity gains into improved farmer incomes and sustained participation.
- Overall, aligning pricing, incentives, and service delivery is essential to unlock scalable seed production while balancing GaDA's commercial objectives with farmer level viability and local impact.

Income difference between maize grain and maize seed farmers (USD)



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The analysis shows that smallholder-based seed scaling can be viable, but the following actions should be prioritized to unlock value for both GaDA and farmers

Recommendations	
	**Adjust seed pricing to align with grain earnings potential** Increase the current price premium beyond 15% to above the break-even premium of 66%, to make seed farming financially attractive, better aligning net income with maize grain farming to reduce the income gap.
	**Introduce performance-based incentives** Implement yield-based bonus payments or other performance incentives to reward higher productivity levels and motivate seed farmers to achieve targeted outputs.
	**Enhance service delivery and farmer support** Strengthen the extension system by providing intensive agronomic training, field monitoring, timely input provision, and access to financing options to support seed outgrower productivity.
	**Improve cost efficiency in seed production** Optimize labor, financing, and certification costs through technical support programs, collective bargaining for lower input prices, and streamlining of certification processes.

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2

Business model

Introduction | GaDA aims to scale maize seed multiplication and market share to bridge the national supply gap and enhance regional productivity

Company

- Gamo Development Association (GaDA) was established in 1993 and is headquartered in Arba Minch, Southern Ethiopia. Originally a social NGO, it has since evolved into a hybrid organization combining nonprofit work with a commercially focused agribusiness unit.
- GaDA specialises in the multiplication and distribution of high-quality maize seeds to small-scale farmers and private companies such as Bayer.
- By 2028, GaDA plans to increase maize seed coverage in the Gamo Zone from 41% to 85%, and grow its national market share from 5% to 15%.
- GaDA aims to engage around 5,000 SHFs (40% female) in direct sourcing arrangements, with an expected contribution of 30,000 MT of sustainably produced maize.
- GaDA faces several challenges, particularly around limited financial resources, low digital penetration, high production costs, and the need for improved infrastructure.

Maize & Sunflower value chain in Ethiopia

Agriculture contributes to 34.5% of Ethiopia's GDP but is highly vulnerable to climate change.[2] Agriculture is largely subsistence based with smallholder farmers cultivating on fragmented areas and producing 95% of the country's agricultural output.

Ethiopia is Africa's 5th largest producer of maize, and it is staple food across major maize-producing regions, thus consumed domestically.[3]

Sunflower is not widely cultivated in Ethiopia, despite its broad climate adaptability and higher yield potential than other oilseeds. Earlier research (1980–2004) by the Hawassa Agricultural Research Centre was halted due to bird damage, diseases, and weak research follow-up.[4] Recently, rising demand from oil millers has driven renewed private sector interest and prompted the Ethiopian Institute of Agricultural Research to revive production research and expand crop coverage.

The average maize yield in Ethiopia is 3.92 MT/ha.[5] This is higher than many African countries but still below global leaders like Brazil and the U.S. Productivity is limited by climate variability, pests, low input use, and weak market linkages.

Sources: 1)Program documents 2) FAO 4) Advances in Agriculture, Wiley (Jan, 2024) 3) EAS Journal of Nutrition and Food Sciences (Sep 2023) 4) IJAIR 5) Our World in Data

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Objectives | GaDA seeks to scale maize seed supply by improving farmer capacity, stabilising offtake, and enhancing commercial viability

	Objective	Farmers	GaDA	IDH Norad GT
Core objective	Build a sustainable, inclusive maize seed sector to boost SHF livelihoods and food security	• Access quality seeds and markets to increase income by 40% and productivity by 25%	• Expand maize seed coverage in Gamo zone and increase revenue growth • Contribute to smallholder impact	• Fund and support integration of 8,000 SHFs into commercial value chains for economic growth
Secondary objectives	Empower SHFs through capacity building and access to inputs, markets & resources	• Gain skills, credit, and market access to boost income and stability	• Expand market reach and revenue by training SHFs and strengthening supply chains	• Fund scalable programs to drive inclusive, sustainable agriculture for SHFs
	Increase maize seed availability and multiplication with rotational crops to enhance productivity and soil health	• Gain access to climate-resilient maize varieties and rotational crops	• Improve business case for GaDA	• Support adoption of regenerative agricultural practices
	Building the organization's capacity to source directly from farmers by hiring a team of professionals	• More professional farmer cooperatives and more bargaining power	• Establish a sourcing department to support the supply chain	• Strengthen cooperatives and SHFs through contract farming

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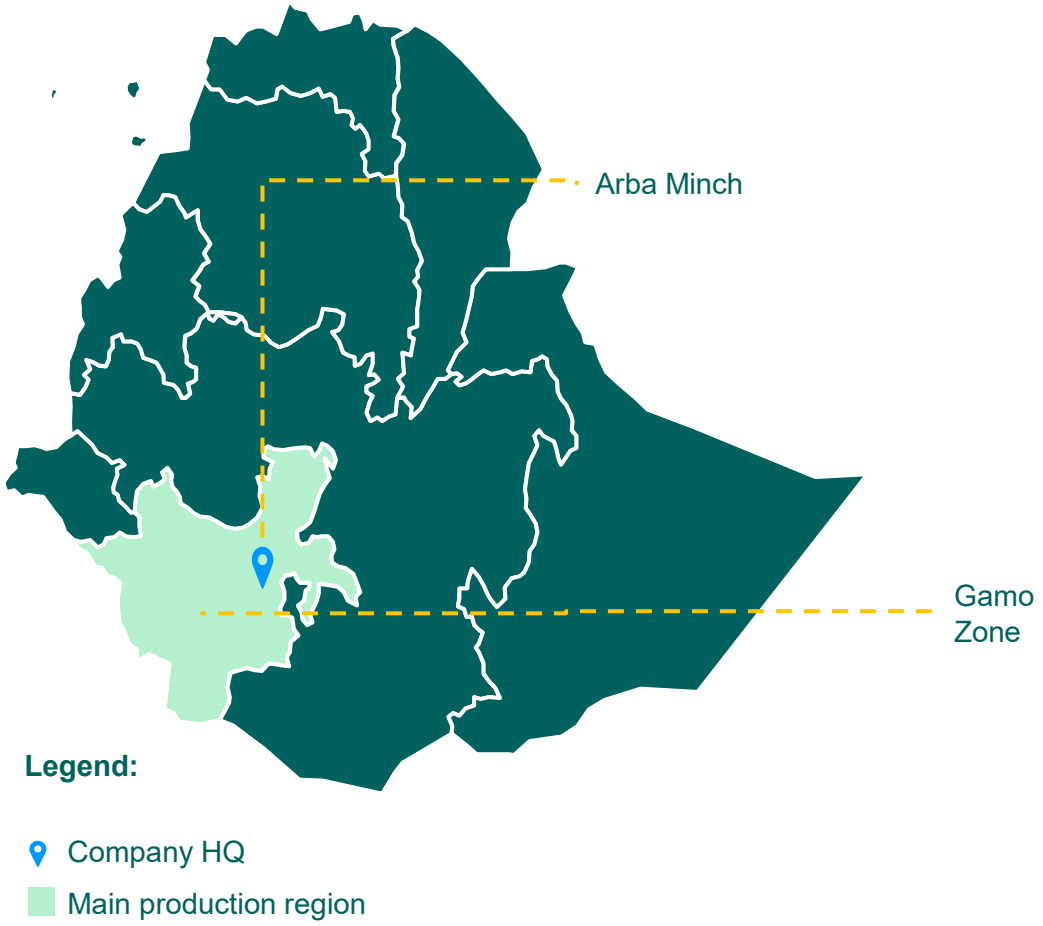
Location | GaDA multiplies maize seed on its own farm in the Gamo region. It also has seed partnerships with other players in the area



- GaDA is headquartered in Arba Minch, Southern Ethiopia, with operations concentrated in the Gamo zone.
- The company cultivates 900 ha of land including maize, horticulture, vegetables, banana and cotton.
- 150 ha is dedicated to maize seed multiplication: 50 ha by GaDA , 50 ha with Bayer, 30 ha with Hibret Fire cooperative union, and 20 ha with South Ethiopian seed enterprise.*
- Approximately 51,000 SHFs are located across 8 districts in the region, representing a substantial potential offtake market for
- GaDA's seed.
- With proximity to Lake Abaya, 700 ha of GaDA's farmland is irrigated enabling 2 production cycles of maize seed annually.
- The improved maize seeds are drought-resistant and well suited for cultivation in the Gamo zone.
- In 2025, GaDA initiated a 24 ha sunflower pilot as a rotational crop to complement maize and support soil fertility.

** see next slide for details on GaDA partnerships*

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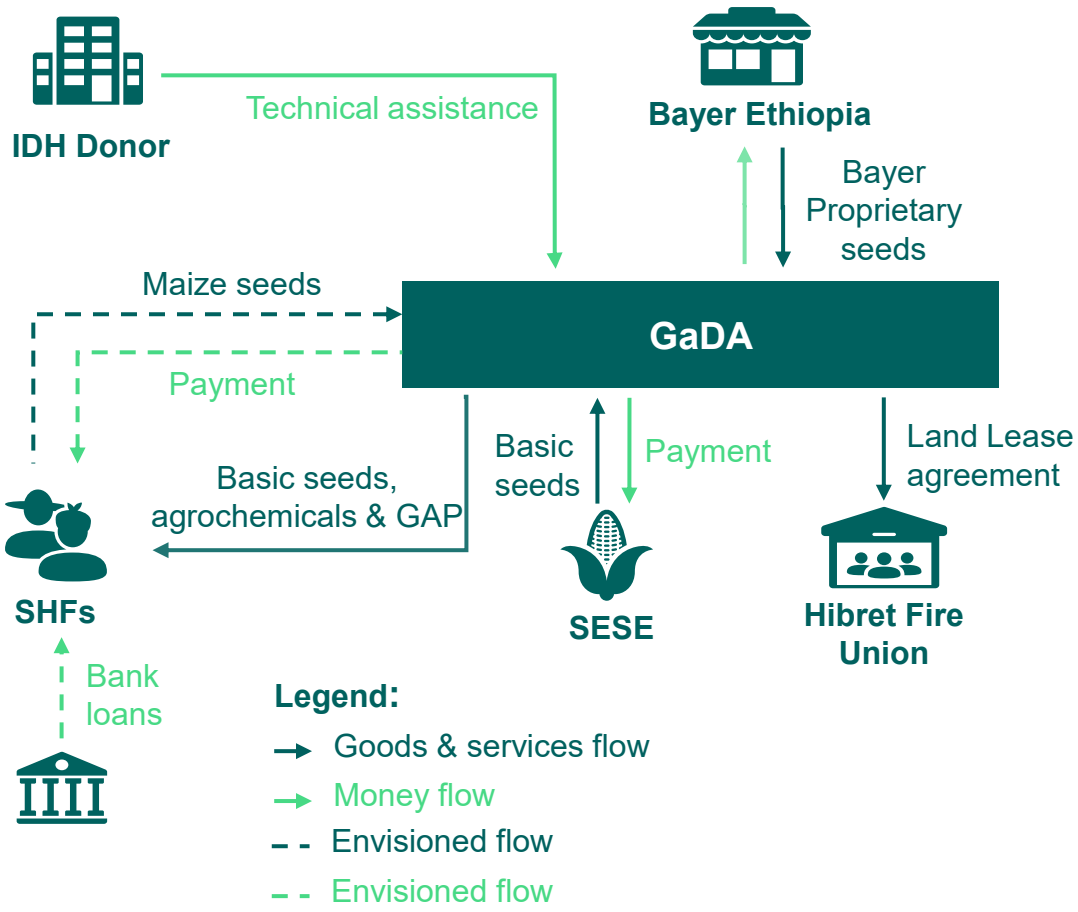
Business model overview | GaDA supplies certified maize seed through own production and partner multiplication, with SHF outgrowers as a planned scale-up channel



- GaDA multiplies certified maize seed on 150 ha through four channels: own farm (50 ha), partnerships with Bayer (50 ha), Hibret Fire Union (30 ha), and South Ethiopian Seed Enterprise (20 ha).
- Partner arrangements differ by counterparty: Hibret Fire shares output X% with GaDA, while Bayer and South Ethiopian Seed Enterprise pay GaDA for multiplied seed.
- After harvesting, seeds are threshed at GaDA's farm and processed, treated, and packaged at Hibret Fire's facility into 12.5 kg bags (sufficient for 0.5 ha).
- Seed prices are set annually by the government based on costs and variety, creating revenue stability but limiting GaDA's ability to adjust prices to farmer production economics.
- Quality oversight, quarantine, and certification are provided by the Ethiopian Agricultural Authority (EAA), requiring strict compliance with seed multiplication protocols.
- GaDA generates revenues from seed sales to farmers and partners; grain by-products are distributed to staff and charities and are not commercialized.
- To overcome land constraints on own production, GaDA plans to pilot an SHF outgrower model from 2026, initially engaging 20 farmers supported with basic seed, fertilizer, and training.

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Stakeholders (1/2) | GaDA's multiplication model relies on a multi-actor ecosystem with aligned incentives

Actor	Legal status	Function (within this model)	Revenue model (within this model)	Incentive to participate (Within this model)
Smallholder Farmers (SHFs)	Individuals	• Participate in outgrower schemes to multiply maize seeds and supply GaDA	• Income from multiplied seeds	• Stable Markets for seeds • Improved livelihoods through higher incomes, access to quality seeds, training and finance
Hibret Fire Cooperative Union	Cooperative	• Leases GaDA's land to multiply seeds • Processes harvested seeds for GaDA	• Revenue from multiplied seeds • Revenue from processing facility	• Stable income from seed sales • Strengthened cooperative capacity
Bayer Ethiopia	Limited Company	• Supplies proprietary maize seed varieties and technical assistance to GaDA for multiplication	• Revenue from sale of multiplied seeds	• Access to high-quality, standardized maize seeds multiplied at scale, increasing market reach
Financial Service Providers	Limited Company	• Provide loans to SHFs for purchasing inputs to support production	• Interest from loans provided	• Business growth through increased loan disbursements

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Stakeholders (2/2) | GaDA's multiplication model relies on a multi-actor ecosystem with aligned incentives

Actor	Legal status	Function (within this model)	Revenue model (within this model)	Incentive to participate (Within this model)
South Ethiopian Seed Enterprise (SESE)	Government enterprise	• Supplies basic seeds • Contracts GaDA for seed multiplication	• Income from sale of multiplied seeds	• Expanded certified seeds supply • Additional income stream from multiplied seeds by GaDA
Government Certification Agency	Government Regulatory Body	• Certifies seed quality and approves varieties	• N/A	• Ensure seed quality and compliance with national standards
Extension Agents (Gov't)	Public Sector Workers	• Support the 20 SHFs with technical guidance during production season	• Monthly top-up from GaDA	• Increased local engagement, capacity building and supplemental income
Agricultural Research Institute	Public Research Institution	• Provides expert trainers to GaDA for SHF seed multiplication training	• Paid training fees	• Knowledge dissemination and institutional collaboration
Commercial Bank of Ethiopia	Financial Institution	• Potential funder for GaDA's modernization strategy	• Interest on loans	• Support agricultural modernization

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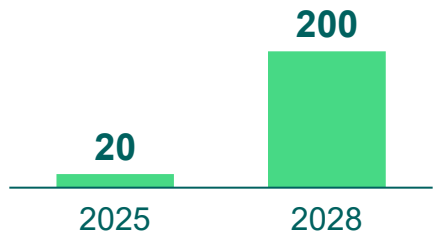
Farmer segments | Maize production in the Gamo zone is characterized by rainfed, low-input smallholder farming systems

	Baseline grain farmers	Improved grain farmers	Seed multiplication farmers
Description	Farmers using low-cost seed varieties, producing mainly for subsistence and selling limited surplus on the open market.	Farmers using GaDA's improved seed varieties, achieving higher productivity and selling surplus maize grain on the open market.	Farmers producing certified maize seed under contract, selling their full marketable surplus back to GaDA **under a buy-back arrangement**.
Challenges	• Limited access to finance and mechanization • Dependence on rainfall • Limited adoption of improved and regenerative practices	• Limited access to finance and mechanization • Dependence on rainfall • Limited adoption of improved and regenerative practices	• Limited access to finance and mechanization • Dependence on rainfall • Limited adoption of improved and regenerative practices • *Additional constraints due to strict certification, quality control, and monitoring requirements*
Scale	NA	NA	

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Farmer relationships | GaDA engages a limited number of farmers through a structured, contract-based outgrower model

Selection

Farmers are selected based on land ownership (minimum 0.5 ha), irrigation access, and proximity to GaDA for supervision. Priority is given to farmers without prior union membership to avoid overlap with existing seed arrangements.

Contracting

GaDA plans to contract SHF seed farmers under adapted agreements specifying pricing, input provision, quality standards, delivery obligations, and buy-back conditions. These contracts are critical to managing quality risks and ensuring reliable seed supply.

Outreach

GaDA engages farmers through community-based demo plots and in-person training at its farm, allowing farmers to observe seed multiplication practices and requirements before participation.

Segmentation

As this is a pilot, GaDA does not yet apply a formal farmer segmentation strategy. In future phases, segmentation based on irrigation access could support differentiated support and enable multiple production cycles per year.

Graduation

There is currently no graduation model for SHF seed farmers. Given the technical intensity of certified seed production, GaDA plans to retain the same contracted farmers through 2028, subject to performance and compliance with agronomic standards.

Data collection

For the SHF pilot, data is collected by extension agents and analyzed at aggregate level to monitor performance, compliance, and learning for potential scale-up.

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Services | GaDA is developing a new service offering for seed multiplication which includes input provision and access to finance, to enable certified maize seed multiplication

Category	Service	Impact	Implementation	Revenue model	Status
Training & information	**GAP training**	Improved yields and quality compliance	GaDA (with support from IDH)	Indirect through higher quality seeds	Ongoing
	Digital training	Improved decision-making and adoption	GaDA (with government extension agents)	N/A	Planned
Inputs	**Basic seeds & Agrochemicals**	Higher seed yields and consistency	GaDA	Indirect via higher quality improved seeds	Planned
Financial services	**Short-term loans**	Input affordability and cash flow	GaDA (with financial institutions like Selam MFI)	Interest on loans	Planned
Equipment & labor	**Mechanization**	Efficiency and timely operations	Mechanization Service Providers	Rental/service fees	Planned
Market access	**Offtake contracts**	Guaranteed offtake and price reference	GaDA	Margin on seed/grain sales and contract fulfilment	Planned

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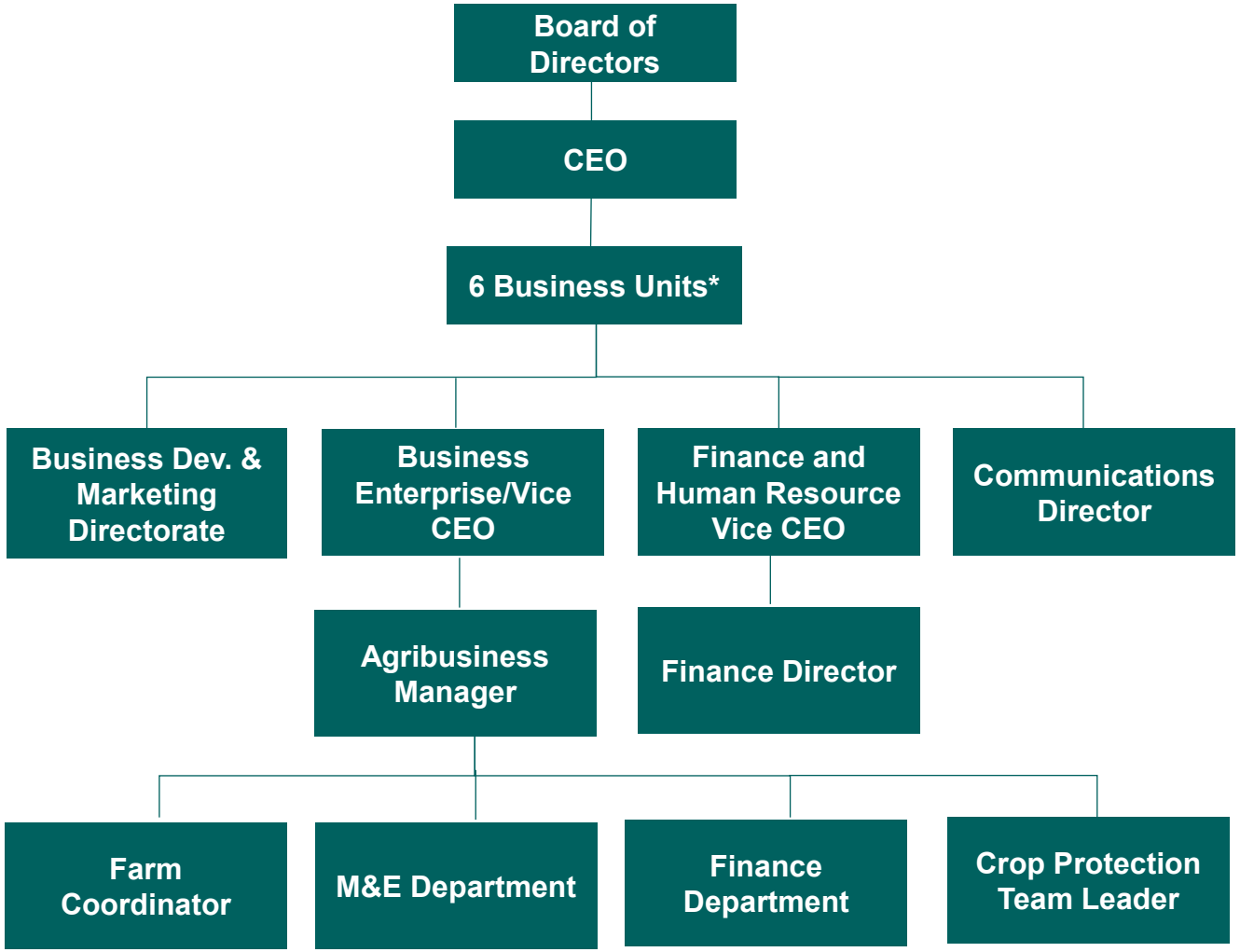
Organizational structure | GaDA has a centralised and hierarchical organisational structure led by a board of directors with the CEO overseeing all 6 business units



- GaDA operates as a dual-wing entity: a business enterprise and a charity wing, with the agricultural business unit being the largest and most active.
- It is led by a board of directors, with the CEO overseeing all 6 business units. Each unit is managed by a dedicated manager responsible for daily operations.
- GaDA employs ~1,000 staff, including permanent and casual workers, with 35% female representation and two business units led by women
- The organization is committed to filling vacant leadership positions, increasing women's representation to 50%, and strengthening audit and compliance systems.
- Over 800 workers are engaged on the farm, with a gender ratio of ~60% female and 40% male

Sources: 1) Program documents (*) Agriculture, Dairy farm, Hotel, Garage, Crocodile ranch & Construction

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Organisational capacity | GaDA has a solid governance and control foundation, with targeted gaps for scaling farmer engagement

	Score	Observations
Governance and legal structure	High	GaDA is governed by an independent 11-member board meeting twice annually. Governance structures are in place, though female representation is limited (1:11). GaDA operates under a 2021–2025 strategic plan and is developing a new plan for 2026–2030.
Human resources	Medium	GaDA has HR policies in place, though these are largely informal and embedded within guidelines. A new CEO was appointed five months ago, marking a recent leadership transition. Grievance mechanisms exist, but no formal employee satisfaction surveys are conducted.
Financial management and internal control systems	High	GaDA operates with an accounting system and produces monthly financial statements. Annual external audits are conducted. They have an annual master budget, but there may be inconsistencies across business units. While there is no consolidated business plan document, profitability plans exist for each unit, guiding their financial operations.
Organisational management	Medium	GaDA has internal and external communication systems supported by a communications department and a small ICT team. Some reliance on personal devices and unlicensed software remains, and current agribusiness staffing levels may be insufficient for planned expansion
Target customer management	Medium	GaDA plans to engage 20 farmers in its seed multiplication pilot and has developed strict selection criteria. While dedicated staff are assigned, formal systems for farmer feedback and data management are not yet in place and will be critical for scaling engagement.

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Enabling environment (1 of 2) | Contextual factors shape the feasibility and cost of scaling a smallholder-focused seed production model

Category	Situation	Impact on business model
Technology	• Smartphone adoption in rural Ethiopia remains low, with most SHFs relying on basic feature phones • Connectivity constraints limit the use of digital tools for training, reporting and traceability	• GaDA can rely on USSD/SMS-based farmer communication, voice calls and offline-first digital tools for extension, seed monitoring and aggregation • Low tech farmer engagement models reduce cost of adoption and ensure inclusion of SHFs during scale up
Natural environment	• Increasing climate unpredictability affects maize seed yields • Pest pressure (Larger Grain Borer) is a rising threat, requiring timely scouting and coordinated response	• Seed production requires closer agronomic supervision, especially around flowering windows. • GaDA can differentiate itself by offering climate-smart advisory and field-monitoring that ensure seed quality
Infrastructure	• Poor rural roads elevate seed evacuation costs and can compromise seed quality if evacuation from SHF is delayed.	• GaDA can partner with cooperatives or cluster groups for centralized aggregation points, lowering logistics costs and improves timely seed movement
Labor & workforce	• Farm labour is seasonal in nature and has challenges such as labour shortages, high costs, and cultural constraints	• There is an opportunity to upskill the existing youth and women in seed production protocols
Financing	• Access to basic seed and fertilizers is inconsistent, delays reduce the window for efficiency • SHFs have limited access to working capital, making input acquisition difficult	• GaDA can strengthen reliability by offering timely input packages, bundles with credit-recovery through guaranteed buy back

Opportunity | Neutral | Risk

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Enabling environment (2 of 2) | GaDA can leverage contextual strengths and manage key constraints to scale an efficient SHF-led seed production model

Category	Situation	Impact on business model
Trading System	• SHFs typically sell produce through informal channels, often at lower prices due to limited bargaining power	• Direct engagement with the SHFs enables GaDA to set clear quality parameters and give better prices
Pricing & competition	• Limited maize seed companies operate locally, but competition increases during sourcing seasons.	• GaDA may adopt quality-based premium pricing for lock in SHFs for seed production • Reliable payment terms and training strengthen farmer retention against competitors
Institutional stability	• Seed certification processes can be slow, inconsistent or capacity constrained	• Requires close coordination with regional seed authorities for timely inspection and certification
Land tenure	• The land tenure system gives only user right in Ethiopia. The system is customary in nature and cannot be sold or exchanged, which makes it largely stable[1]	• As land may not be used as collateral, alternative mechanisms for de-risking for financial service providers can be explored
Social norms	• Gender roles influence participation in training and labour-intensive seed production tasks. • Youth have higher mobility and willingness to adopt new practices but often lack assets and land.	• Integrating women into quality control roles and youth into field operations support strong compliance and community buy-in. • Socially-inclusive farmer engagement improves trust, reduces

Sources: Land Use Policy (2024)

Opportunity | Neutral | Risk

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SWOT | GaDa is well positioned to scale a commercially viable maize seed business while improving supply reliability through a dual production model (Own farm + SHF)

	Helpful	Harmful
Internal	**Strengths** • Established regional presence with longstanding community trust and strong acceptance in the Gamo Zone • Capital-efficient expansion model using contracted farmers and partner processing, allowing GaDA to scale seed volumes without heavy upfront investment in land • Two annual production cycles for maize seeds enabled by irrigation • Strong technical and agronomic expertise in high quality improved maize seed varieties	**Weaknesses** • Scaling potential is constrained by limited access to working capital and financing • Government-set seed prices restrict flexibility limiting GaDA's ability to adjust margins
External	**Opportunities** • Rapidly increasing demand for improved maize seeds nationally • Large untapped farmer base offers room for cluster formation • New service-offerings such as input credit and bundled agronomy services can deepen farmer loyalty	**Threats** • Climate volatility, erratic rainfall and pest pressure increase production risks • High farmer borrowing costs and labour financing burdens may deter SHF participation in seed multiplication • Side-selling driven by higher grain prices • Fragmented farmer plots and weak rural infrastructure

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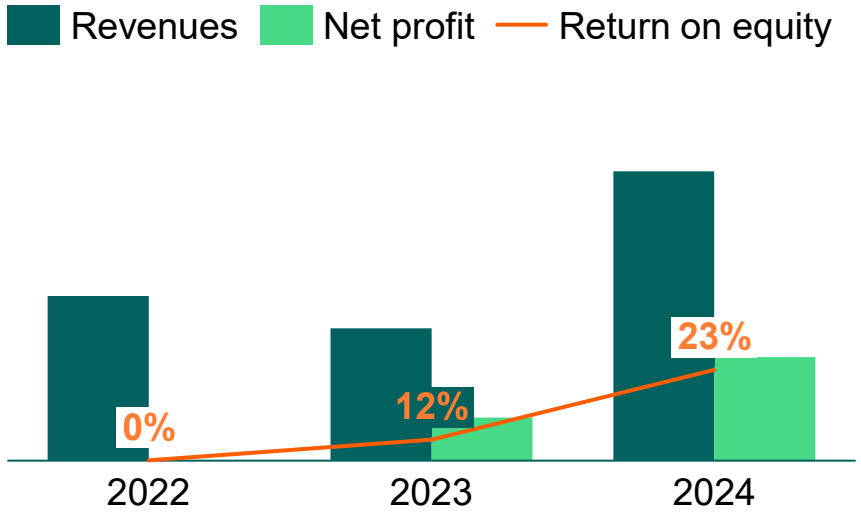
Business Case

Financials | GaDA's stable liquidity and efficient working capital use indicate sound financial management and readiness to support larger farmer networks

Revenue and Profitability ('000 USD /year)



- After a dip in 2023, GaDA's revenues more than doubled in 2024, while profit margins strengthened from X% to X%.
- There was a profitability surge from near break-even in 2022 to $X in 2023, and further to $X in 2024, reflecting improved cost management and operational efficiency.

Leverage and liquidity

	2022	2023	2024
Current ratio	3.0	2.8	3.2
Working capital turnover ratio	3.1	2.5	2.7

- GaDA maintained a strong liquidity position(current ratio) across all three years consistently ~3.0. The slight dip in 2023 reflects the revenue decline that year.
- GaDA remains financially stable and capable of meeting its short-term obligations.
- The working capital turnover ratio decline from 2022-2023 indicates that working capital was used less efficiently in 2023.

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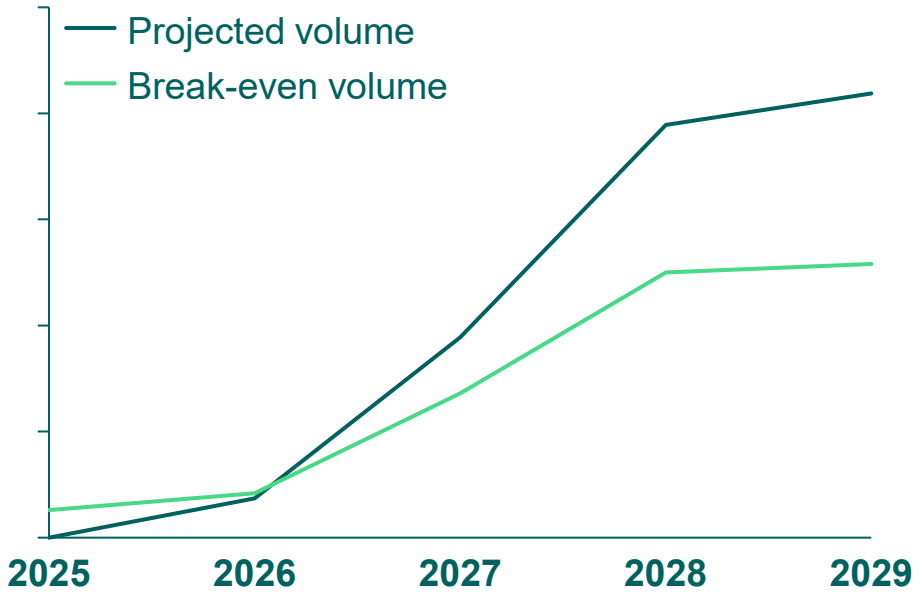
Scale | GaDA nears a break-even inflection point in 2026, with scale required to offset higher unit costs and drive profitability from 2027 onward

Estimated volume of maize seed sourced (Mt)



Number of farmers	0	20	100	200	200

- GaDA integrates SHFs into its maize seed sourcing model to diversify supply beyond its own farm and meet rising demand across the woreda (districts).
- By 2029, SHF sourcing reaches roughly X Mt, driven by farmer productivity improvements resulting from GAP training and an expansion in the number of farmers.
- Scaling from 0 to 200 SHFs lifts supply resilience and enables GaDA to expand beyond the limits of its own farm.
- GaDA reaches profitability from 2027 onwards as sourced volumes start exceeding the required break-even volumes.
- From 2027 onward, rising volumes generate significant margin uplift, and economies of scale lower the cost per ton, making the SHF sourcing model financially sustainable.

Higher break-even volumes in 2025 reflect initial set-up costs incurred prior to farmer onboarding and volume generation

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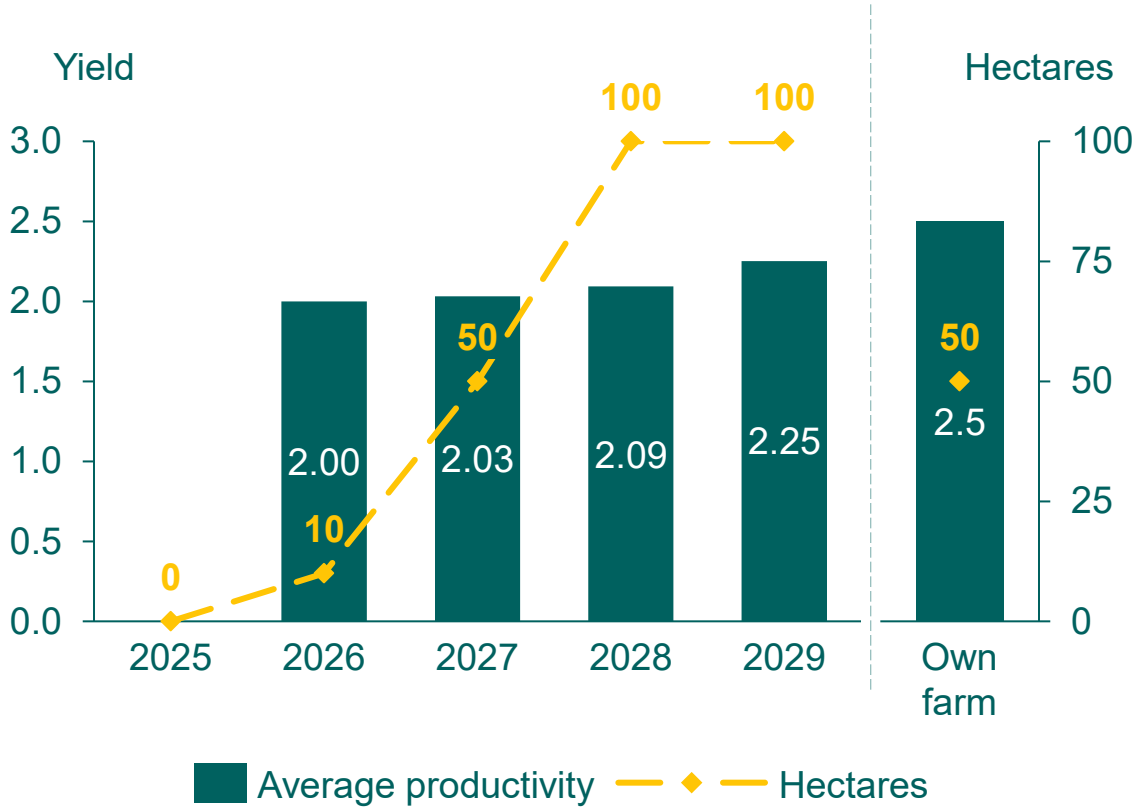
Growth Model | Outgrower expansion increases total seed output through acreage growth, even as per-hectare productivity remains below own-farm levels

Hectarage and average yield (Mt/ha), outgrowers vs. own farm



- GaDA's own farm sets the productivity benchmark, achieving ~2.5 mt/ha across 50 ha under tightly controlled seed multiplication conditions, with 2 production seasons per year
- The SHF outgrower model scales by expanding total cultivated area as more farmers are integrated into seed production
- Individual SHF plots are capped at ~0.5 ha, due to seed multiplication requirements limiting per-farmer output relative to GaDA's own farm
- SHF productivity starts lower but improves steadily over time, with farmers achieving ~2.0 mt/ha in their first year and graduating to ~2.5 mt/ha after 4 years.
- SHF are integrated in successive cohorts, starting at modest productivity levels and improving over time as they build capacity and familiarity with seed multiplication practices
- While smallholder yields remain below own-farm performance on average, the expanding land base enables GaDA to unlock higher total seed volumes and diversify production beyond its fixed 50 ha

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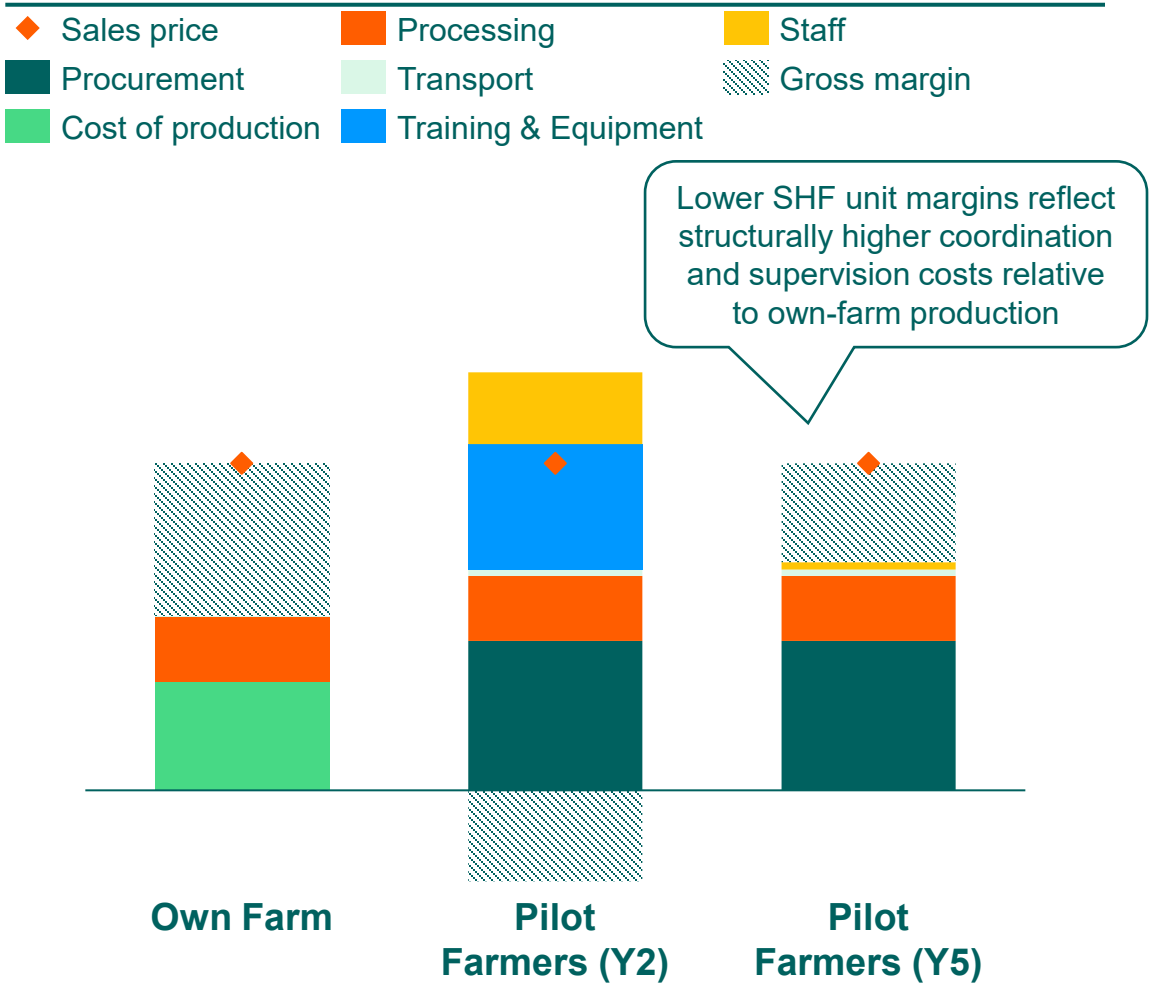
Unit economics | GaDA's own farm remains most profitable at X USD/Mt (X%). Farmers are initially lossmaking at X USD/Mt (-X%), but have potential to grow to X USD/Mt (X%)

Sourcing channel gross margin (USD/Mt produced)



- GaDA pays a 15 percent premium above the maize grain price for seed, to incentivise farmers to shift land from grain to seed production and secure sufficient seed supply.
- As a result of low starting yields and high training and supervision costs, the smallholder channel is loss making with -X USD/Mt (-X%) in year 2 of the pilot.
- By year 5, higher farmer yields and reduced training costs lift smallholder profitability to X USD/Mt (X%), narrowing but not closing the gap with own farm production which yields X USD/Mt (X%).
- Own farm sourcing remains the benchmark for cost efficiency and reliability due to GaDA's direct control over production, quality, and timing, but it is constrained by capital requirements and limited scope to expand acreage.
- Smallholder sourcing offers scalability, but seed multiplication adds complexity and limits individual farmer production areas to about 0.5 ha, slowing down the pace at which this channel can expand.

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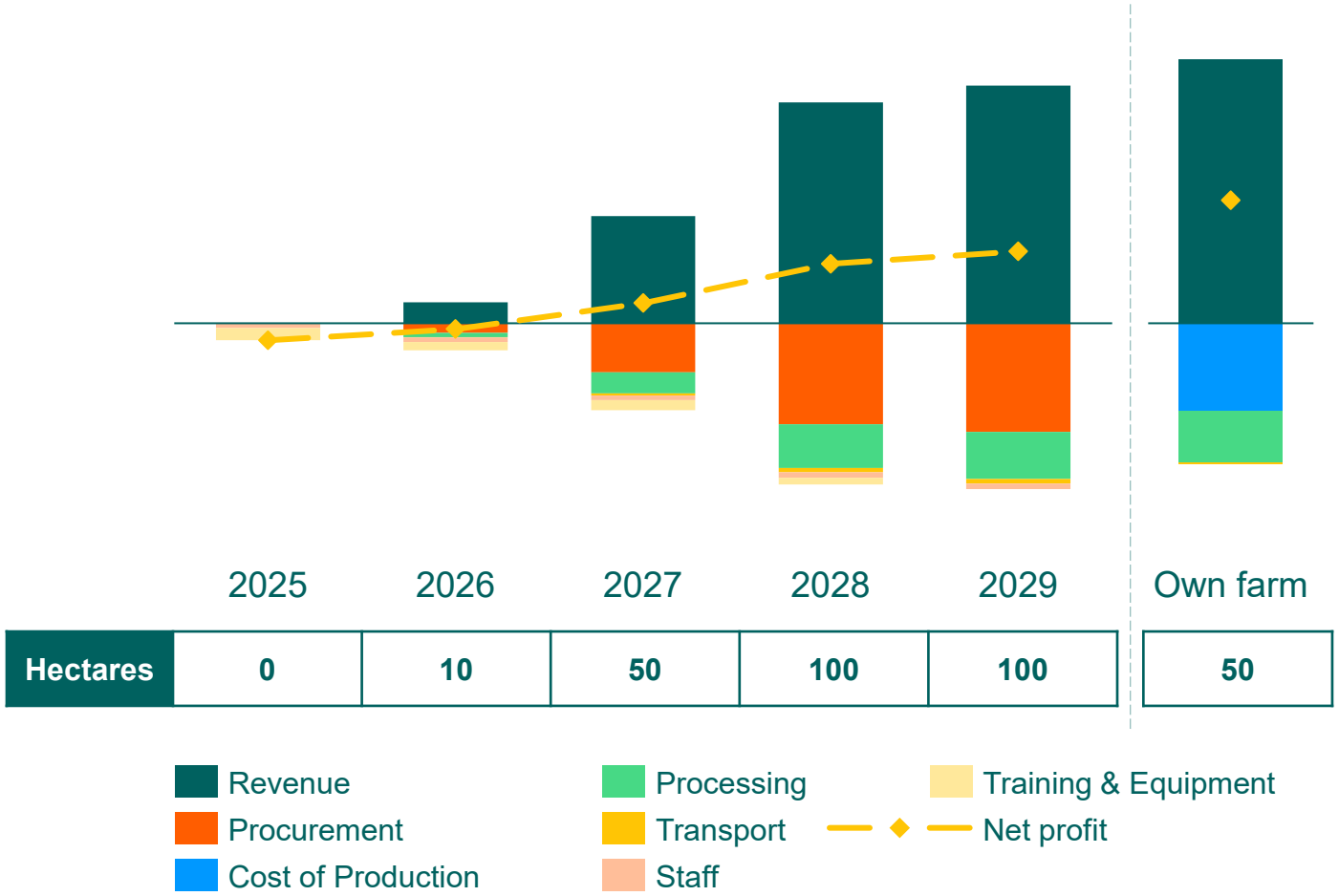
P&L over time | Smallholder sourcing profit grows from USD X to USD X by year 5, offering a less efficient but scalable second channel alongside the area-constrained own farm

Seed production profitability (USD) – Pilot Farmers vs. Own farm



- In coming years, smallholder seed sourcing becomes a meaningful contributor to GaDA's net profit, although it requires substantially more hectares due to lower productivity per hectare.
- Smallholder seed sourcing moves from a USD X loss in Year 1 (a setup year without revenue) to sustained profitability of USD X by Year 5, driven by rising yields and expanding acreage.
- Own farm seed production remains more profitable per hectare due to higher yields, tighter control, and lower operational costs, but is constrained in its ability to scale by fixed land availability.
- Smallholder sourcing therefore provides a scalable second channel, with lower profitability per hectare but strong potential for total profit contribution as farmer numbers and acreage expand.

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Service Delivery Channels | Direct-to-farmer delivery enables stronger control and support quality, while cooperative-based delivery improves efficiency in reaching farmers at scale

	Direct-to-farmer *(Best for depth of support)*	**Cooperative-based** *(Best for scale and outreach)*
Most efficient in contexts where	• Farmer base is small to medium and geographically concentrated • Close quality control, monitoring, and tailored support are critical	• Farmer numbers are large and organized in functional groups • Rapid outreach and lower per-farmer delivery costs are priorities
Strengths	• Strong accountability and visibility into individual farmer performance • Easier identification and support of high-performing farmers	• Enables scale through group-based coordination and peer learning • More efficient delivery of training, inputs, and aggregation
Limitations	• High coordination and monitoring burden • Higher cost per farmer and limited scalability as farmer numbers grow	• Dependence on cooperative governance quality • Reduced visibility into individual farmer performance and outcomes

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Impact Case

Farmer segments | Seed multiplication pilots face 44% higher costs, requiring alignment between financing and price incentives

Characteristics	Baseline grain	Improved grain	Seed
Current yield	2.75 MT/ha	4 MT/ha	2.0 MT/ha
Maximum yield	2.75 MT/ha	5 MT/ha	2.5 MT/ha
Farm size	0.5 ha	0.5 ha	0.5 ha
Farm-gate price	42,000 ETB/Mt	42,000 ETB/Mt	48,300 ETB/Mt
PHL	15%	15%	7%
Services			
Training			GAP
Inputs		Improved seeds*	Seeds Fertilizer, Herbicides
Financial services			Loans
Market Access			Offtake

- Rainfed agriculture dominates in Ethiopia, with small landholdings and limited mechanization constraining productivity[1,2].
- GaDA supports pilot seed farmers with input packages and GAP training to enable certified seed production and yield improvements.
- Despite this support, pilot seed farmers face **44% higher production costs** than maize grain farmers, driven mainly by labor expenses and loan repayments.
- At a 15% price premium over maize grain prices, seed production remains unprofitable, indicating that **pricing and financing terms must align** for positive farmer returns.

** These seeds are sold by GaDA, and not provided as a service*
Sources: 1) Frontiers Rainfed Agriculture in Ethiopia (2025); 2) Tandf Crop Production Paper (2022)

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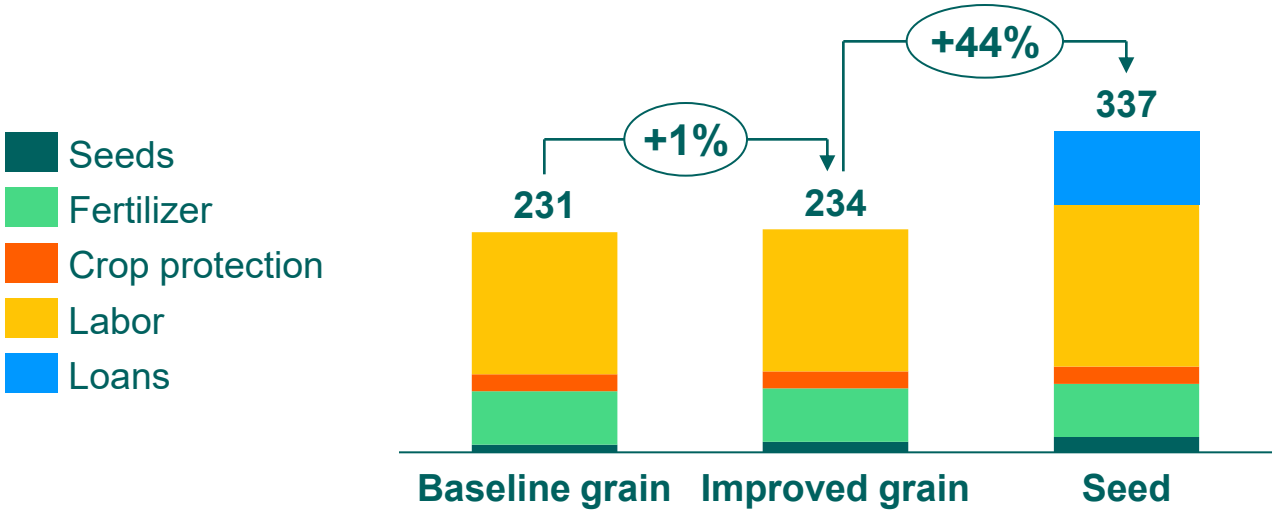
Cost of Production | Higher labour and financing costs drive 44% higher expenses for seed farmers

Cost of service package (USD/0.5ha)



Farmgate price (USD/Mt)	**298**	**298**	**343**
Marketable surplus (Mt/0.5ha)	**0.67**	**1.2**	**0.93**
Farm Size (Ha)	**0.5**	**0.5**	**0.5**

- GaDA provides inputs (seed, fertilizer, crop protection) as an in-kind loan, recovered from the sale of produce, reducing upfront cash constraints for seed farmers.
- Under the outgrower model, farmers absorb land access, on-farm labour, and day-to-day field operations, shifting part of production costs off GaDA's balance sheet.
- Labour costs remain the responsibility of farmers and are financed through loans, making labour the largest recurring expense for seed farmers.
- Interest on labour loans accounts for ~23% of total production costs, resulting in **up to 44% higher service expenses** for maize seed farmers compared to grain farmers.

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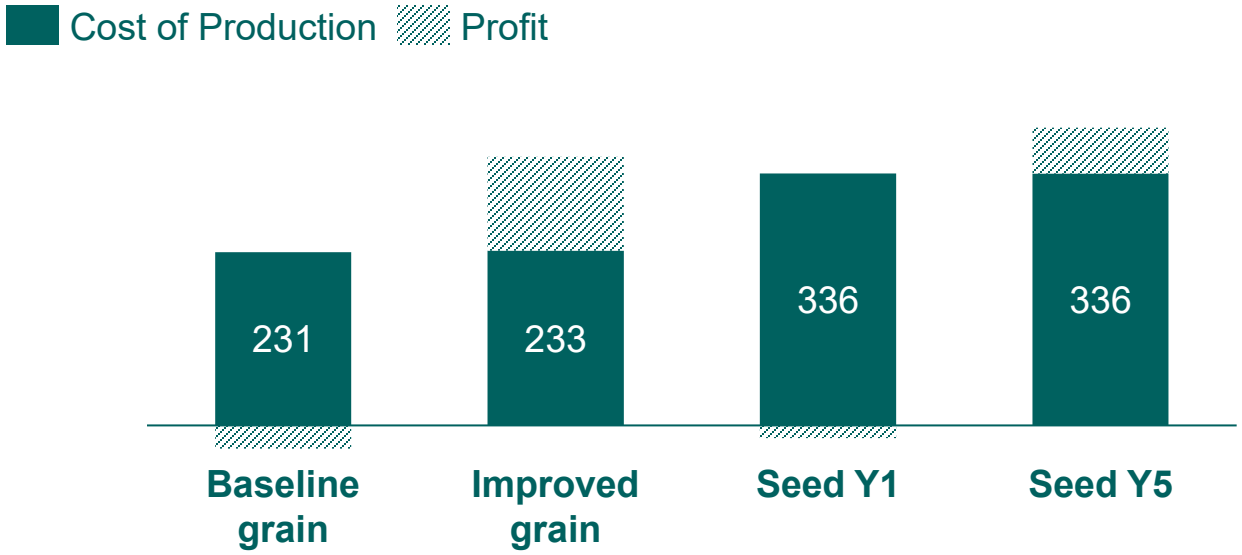
Profitability per half hectare | Maize seed farmers move from early losses to positive returns over time, but remain less profitable than maize grain farmers

Cost of production and profit (USD/0.5ha)



	Baseline grain	Improved grain	Seed Y1	Seed Y5
Yield (Mt/ha)	2.75	4.0	2.0	2.5
Revenue (USD)	199	358	319	397
Expense (USD)	231	233	336	336
Profit (USD)	-31	125	-17	61

- Seed farmers transition from a loss of $X in Year 1 to a profit of $X in Year 5, reflecting a $X net improvement over time.
- Profit growth is driven by higher marketable surplus, increasing from ~0.93 Mt to ~1.16 Mt per farm, supported by improved agronomic practices and GAP training.
- Despite these gains, seed farmers' Year 5 profits remain below those of maize grain farmers, indicating a persistent competitiveness gap.
- Interest costs on labour loans absorb a significant share of margins; without loan interest, seed farmers would earn $X in Year 5, more than double current profits.

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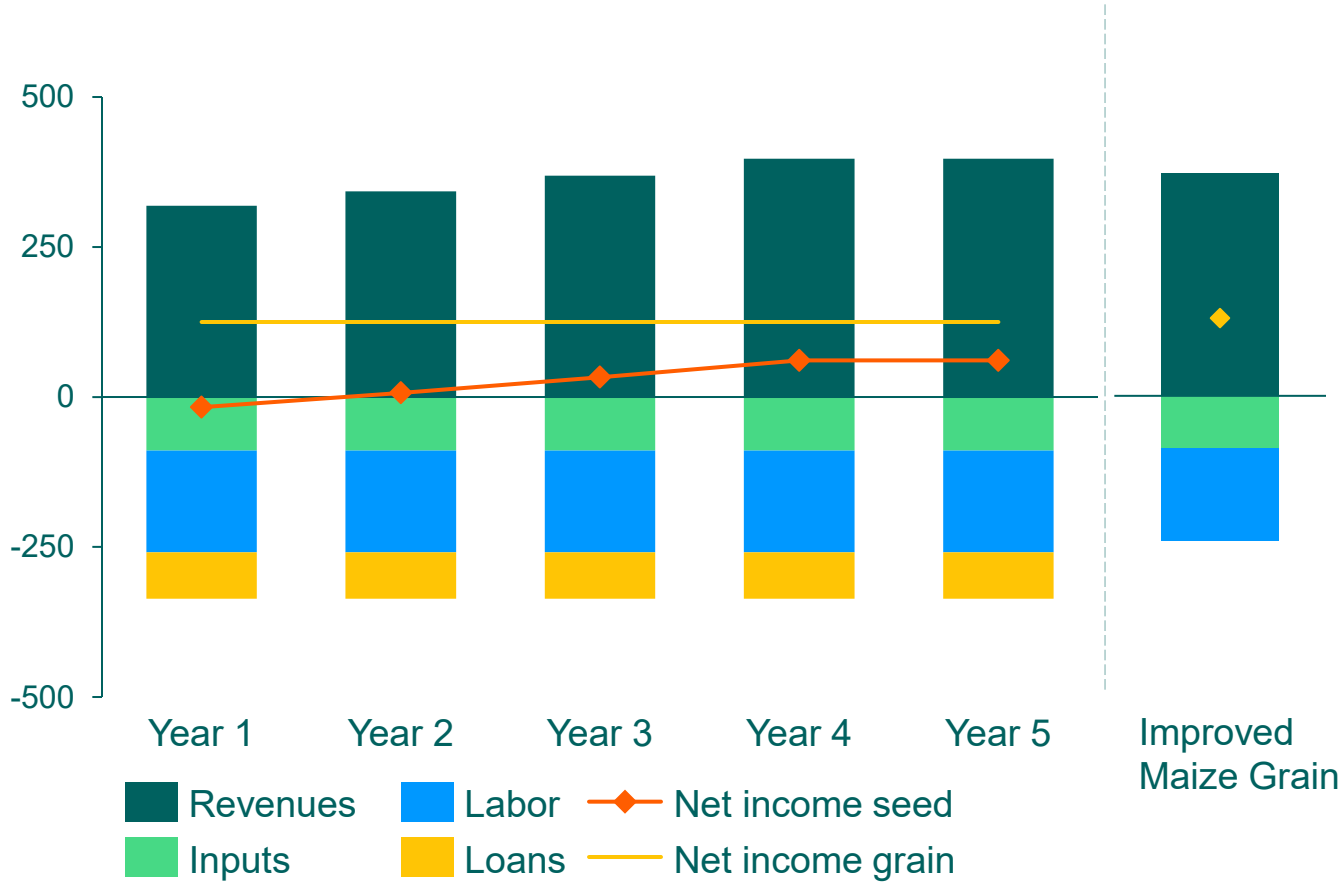
Farm P&L | Under current pricing conditions, maize seed farming remains less profitable than maize grain over five years

Profit and loss for a five-year period (USD/0.5ha)



- Seed multiplication farmers see income improve over time as yields increase, moving from a loss of **$X in Year 1** to a profit of **$X from Year 4 onwards**.
- Despite these improvements, cumulative profits over five years remain **materially below** those of maize grain farmers under current price and cost conditions.
- In Year 4, seed farmers still earn **approximately $X less per 0.5 ha** than maize grain farmers, despite higher productivity and service support.
- This persistent profitability gap is driven primarily by higher production and financing costs, rather than yield performance.

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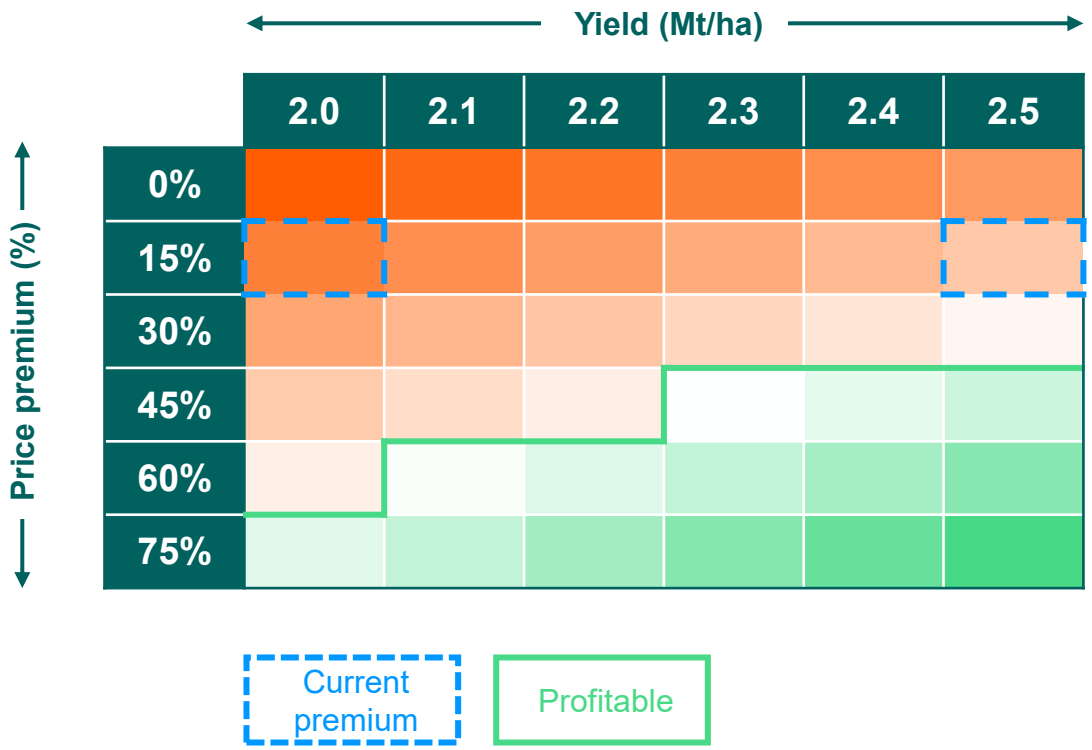
Sensitivity analysis | Seed farming only outperforms maize grain at higher price premiums, since current pricing leaves seed farmers ~$X to ~$X behind

Income difference between improved grain and seed farmers (USD)



- The sensitivity analysis compares **seed farmer income relative to maize grain farming** across different yield levels and price premiums, showing under which conditions seed production becomes financially attractive.
- Under GaDA's current pricing conditions, seed farmers earn **approximately USD X less per 0.5 ha** than maize grain farmers at initial yield levels (~2.0 Mt/ha).
- Even as yields improve toward ~2.5 Mt/ha, seed farmers continue to earn **around USD X less per 0.5 ha** than maize grain farmers under current price premiums.
- A **substantial price premium above maize grain prices (approximately ~X%)** is required for seed farming to outperform maize grain farming across a realistic yield range.
- This indicates that **productivity gains alone are insufficient**; farmer incentives only shift when yield improvements are combined with higher price premiums or alternative incentive structures.

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IDH Annual Report (2024)

Farmfit Insights Hub

This report was created using think-cell

Thanks

IDH would like to express its sincere thanks to Gamo Development Association (GaDA) for their openness and willingness to partner through this study. By providing insight into their model and critical feedback on our approach, GaDA is helping to pave the way for service delivery that is beneficial and sustainable for farmers and providers

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5

Annex

Learning questions

With this IBA, we aim to answer the following questions:

Topic	Question
Context	• To what extent does the enabling environment inhibit/facilitate Gamo Development Association (GaDA's) service delivery to SHFs? • What are barriers and enablers for GaDA to establish contract farming for maize grain production with SHFs? • What are barriers and enablers for GaDa to establish seed multiplication with SHFs?
Business Model	• What inefficiencies exist across the key supply chain processes of GaDA? • What services can GaDA provide to improve their offering so as to have the largest and quickest positive financial and social impact ? Which ecosystem players can GaDA leverage for efficient service provision to farmers? • What incentive structures can be adopted to increase the effectiveness of the model? What are the key risks involved and how can they be mitigated? • What skills and training are needed to strengthen the capacity of company staff and key partners? How effective are the decision-making processes and capacities within cooperatives/unions that the company engages with? • What is GaDA's investment need, and how ready is it to attract and manage external investment?
Business Case	• What is the optimal scale maize seed, maize grain and sunflower required to make GaDA financially viable, and as such ensure its sustainability? • Which sourcing channel - contract farms, cooperative/unions, auction - offers greater efficiency in terms of cost, reliability, and quality of supply?

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Learning questions

With this IBA, we aim to answer the following questions:

Topic	Question
Business case (contd.)	• Which service delivery channel - direct-to-farmer or through cooperatives - offers greater efficiency in reaching and supporting farmers? • What is the business model of GaDA (Revenue streams: Sunflower, maize grain and maize seed) and what is the business case for each? How can GaDA offer services in a commercially viable way (direct, cooperatives/unions)? What is the expected financial impact from provision and scaling of such service provision?
Impact Case	• What are general SHF characteristics? What is the average land area that an individual SHF will cultivate? What services (financing, inputs, irrigation etc.) do SHFs have access to? What proportion of the SHFs' practice rain-fed agriculture vs irrigated ? • How would SHFs rate their knowledge of financial products? What are the awareness levels like towards climate change/climate shocks and being prepared for more extreme weather patterns? Are farmers willing to diversify their crop production ? • What segmentation criteria can be used to effectively segment farmers based on their characteristics, behaviours, and needs to tailor support and services more effectively? What services could be provided to SHFs to improve productivity and income/profitability? • What is the current income of SHFs in maize production and what income improvements can be gained from optimizing production?

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Farmer assumptions

Variable	Unit	Baseline Maize Grain	Segment Maize Grain	Maize Seed
Farm size	Hectares	0.5	0.5	0.5
Yield	Mt/hectare	2.75	4.00	2.00
Post-harvest losses	%	15%	15%	7%
Home consumption	Kg	500	500	0
Volume sold to GaDA	%	0%	0%	100%

Source: IBA Tool, based on assumptions from program team

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