

Service Delivery Model Analysis

AgroLog (Ginger, Nigeria) Case Report

September, 2022

Disclaimer

Note that this Service Delivery Model was being designed at the time of the analysis. The report explores possible ways of strengthening the service delivery to smallholder farmers and collaborating with financial service providers to achieve value chain-wide synergies. The analyses provided are based on projections and assumptions; only limited actual data was available.

AgroLog has used the results of this report to inform its strategy and business model, but cannot be held accountable for meeting any targets included in the report.

If you are interested in more detailed information, [please contact us](#).

Relevance of SDM Analysis



Smallholder Livelihoods

Agriculture, including forestry, plays a key role in the well-being of people and the 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 the global food supply. To earn adequate livelihoods without contributing to environmental degradation, farmers need access to affordable high-quality goods, services, and technologies.



Service Delivery Models

Service Delivery Models (SDMs) are supply chain structures that provide farmers with services such as training, access to inputs, finance, and information. SDMs can sustainably increase the performance of farms while providing a business opportunity for the service provider. Using IDH's data-driven SDM methodology, IDH analyses these models to create a solid understanding of the relationship between impact on the farmer and impact on the service provider's business.




Insights and 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 catalyse innovations and investment in service delivery that positively impact people, planet, and profit.



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Executive Summary

Agrolog is an early-stage aggregation, processing and trading venture. They source from a growing base of ginger farmers with dedicated Service Centers at the core of their operations



STRATEGY

Objectives: Agrolog is a newly established agribusiness company specializing in the production and trade of wet and dry ginger, logistics, various agricultural investments, and farm management. Their objectives are to:

- Reach 45,000 farmers (+50%) by 2025
- Increase farm productivity from 8 Mt/year to 20+ Mt/year
- Create traceability and implementation of aflatoxin to align with EU quality requirements

Organization & partners: AgroLog aspires to expand their team by hiring an extension officer for every 200 farmers. AgroLog works together with input providers, FSPs, and development organizations and governments to deliver a range of services to their farmers

Sourcing channels: AgroLog sources wet ginger from community and block farmers in 12 LGAs across Kaduna State. Wet ginger is processed at the Service Center, stored at AgroLog's central warehouse, and sold to exporters and manufacturers



SERVICE DELIVERY MODEL

Farmer Engagement: AgroLog's extension officers work with village heads, women leaders, and youth reps. to select the right farmers in the community to work with

Service package: Farmers receive a comprehensive service package, including GAP and financial literacy training, mechanization, and pre-financing of inputs, to ensure timely access to adequate high-quality inputs

Service Centers: AgroLog sources ginger and provides services through its Service Centers, which play a pivotal position in AgroLog's future role in the ginger value chain. These Centers are envisioned to become self-sufficient ginger processing business units while receiving capacity building from AgroLog

Gender equality: AgroLog collects gender-disaggregated data, provides gender-sensitive services (finance and bank accounts), and continues its farmer base that majority consists of women and youth

Agrolog is projected to generate substantial profits as they scale up benefitting from untapped potential in the region. Processing is adding significant value to local ginger value chain.

	OBSERVATIONS	SUGGESTIONS FOR IMPROVEMENTS
Profitability	<ul style="list-style-type: none"> EBT is projected to increase which is driven by rapid growth in sourcing volumes, larger margins due to higher quality processed ginger, and operating a relatively low cost model. A collaboration with an FSP start-up enables AgroLog to offload some of its input prefinancing and trade financing, thereby reducing its interest expenses. 	<ul style="list-style-type: none"> Review assumptions on sourcing volumes, margins and costs of the model as these might be too optimistic. Continue collaborating with the FSP to ensure the loans are being rolled-out as it brings great benefits in terms of financial savings for Agrolog and timely access to affordable finance for farmers. Rely on IDH program team for continued convening
Service Centers	<ul style="list-style-type: none"> AgroLog sources ginger and provides productivity enhancing and processing services through its Service Centers. These centers are envisioned to become self-sufficient, managed by FOs, while receiving capacity building from AgroLog. Farmers within and outside AgroLog's supply base are allowed to access to services from these centers The installed capacity of the Service Centers is more than sufficient to accommodate AgroLog's farmer base. Excess capacity is built as Agrolog envisions serving other farmers in the region. 	<ul style="list-style-type: none"> Start more accurate demand forecasting in order to source adequate ginger volumes, beyond the minimum required recovery volumes. Consider paying premiums to buy excess supply from farmers Sourcing larger quantities from fewer farmers can greatly enhance efficiency. Co-invest with public funder a Service Center Development Program. The aim will be to build professional and financial capacity of FOs to ensure they can take responsibility of the Service Centers. Develop clear transition roadmap for gradually handover from Agrolog to FOs.

The farmer business case is positive but unproven. Pre-financing needs to be optimized for block farmers. It is advised to monitor farmer performance and adjust services, as necessary.

	OBSERVATIONS	SUGGESTIONS FOR IMPROVEMENTS
Farmer business case	<ul style="list-style-type: none"> Both community and block farmers can increase their income from cultivating ginger. <ul style="list-style-type: none"> Community farmers increase their incomes from 2,400 USD/farm per year to 5,200/farm in 5 years time. They benefit from higher yields due to adoption of GAP. Block farmers, growing ginger only one season, see their income increase from 1,400 to 4,200 USD/farm. Block farmers growing two seasons, could earn up to 10,500 USD/farm Annual expenses for community, one-season and two-season block farmers are 1,400 USD, 3,300 USD and 8,300 USD on average, respectively. Block farmers rely on more expensive rhizomes, input and mechanization. Block farmers growing two seasons incur irrigation expenses, and can, with their second season, benefit from harvesting and selling ginger during the off-season. Input prefinancing for community farmers enabling them to invest into their farms without being strapped for cash Block farmers do still have to make substantial investments, leading to peak negative cash position of 2,000 USD for a one-season farmer in Jun-Aug, and 3,000 USD in Mar for a two-season farmer 	<ul style="list-style-type: none"> Closely monitor farmer training attendance, application of GAP and performance. Use data to inform decision-making and (re)design of service package. Leverage data collected by FSP to understand farmer lending behaviour and service demands. Develop and roll-out a farmer segmentation and graduation approach based on key farmer characteristics. Segmentation allows for more tailored and ultimately more effective services. Graduation, coupled with the right incentives (e.g., discounts and/or premium), can improve the loyalty of farmers to Agrolog. It also encourages farmers to keep investing and performing better. Review the business case for block farmers. Currently block farmers are worse off compared to community farmers due to significantly larger expenses. They also face cash-constraints hindering them to make the necessary investments in their ginger farms Consider adding the option to expand the loan to block farmers on a needs-basis, while respecting the collateral requirements from the FSP and banks. This would allow block farmers to take up additional finance for currently uncovered investments.

Agrolog introduced centralized ginger processing, which is relatively new in the region. If the FSP collaboration works, this could become a blueprint for other aggregators in the country.



Ginger processing



Exit strategy towards farmer ownership



FSP collaboration

Situation

Ginger production is widespread in Nigeria, especially in Kaduna state. However, farmers mostly sell unprocessed ginger, fetching them low prices. Farmers generally do not have access to processing capacity.

Agrolog is currently investing in, owning and operating the Service Centers. Farmers are able to access them and pay a service fee for services and processing.

Agrolog provides input prefinancing to farmers and has to bear the sourcing working capital between offtake and being paid by their buyers. Most banks are unwilling or unable to finance smallholders.

Innovation

Agrolog aims to change this by developing one-stop-shop Service Centers, equipped with production enhancing, warehousing and processing facilities. These are currently not available to farmers.

Agrolog seeks to transfer the ownership and responsibility of the Service Centers to farmer cooperatives. Agrolog can then focus on aggregation, transportation and trading.

Agrolog is working with an FSP start-up to co-develop tailored SHF lending solutions. These loans are designed to cover farmer service cost, provide suitable repayment terms and affordable interest.

Desired outcomes

Dry, processed ginger can earn 270 USD/MT as compared to 160 USD/MT for wet ginger. Farmers will be able to capture a larger share of the value.

Farmers improve their independence and bargaining power, capturing a larger share of the value. Besides, Agrolog can increase efficiency by focusing on core competencies.

Agrolog can improve their cashflow and reduce their finance expenses. Farmers can get more tailored financial products at better rates.

The Service Delivery Model

Understanding the SDM's strategy, business model and financial performance

The SDM | AgroLog aims to transform the Nigerian ginger market by full filling the European ginger market requirements in order to increase farmer income and business performance

Goals & Aspirations

AgroLog aspires to:

- *Secured supply/demand* – secure the supply of ginger to its warehouses and maintain the current and future needs for its clients' demand
- *Sustainable supply* – increase the sustainability and quality of its sourced ginger to align with its corporate values, clients' requirements, and international standards
- *Efficient supply* – ensure an efficient supply with the use of its existing infrastructure of warehouses, Service Centers, and smallholders AgroLog sources from

Goals per 2025

- Reach 45,000 farmers (+50%)
- Source and provide services through 10 Service Centers
- Increase farm productivity from 8 Mt/year to 16 Mt/year to increase household incomes by 40%

Where to Play

To secure ginger supply

- AgroLog creates and maintains year-round relationships with farmers, through its Service Centers and block farms, helping farmers to increase their yield and securing farmer loyalty to AgroLog

To secure sustainable supply

- AgroLog provides a mixed set of services that fit the local environment, its farmer needs, and technical feasibilities
- AgroLog trains smallholders to prevent harm to the environment and to enable compatibility with the requirements
- AgroLog advances its infrastructure with the capacity building of Service Centers and the establishment of block farms

To secure efficient supply

- AgroLog adapts agri-tech possibilities ranging from tech-driven management platforms, IT infrastructures, and ginger-related value addition activities on farm-level

How to Win

Secure supply/demand

- Revisit service offering and segmentation to/of community and block farmers
- Establish market price based contractual agreements with coops and block farmers on ginger off-take, backed by off-take agreements with upstream ginger exporters

Sustainable supply

- Commence the certification process to combat ginger contamination and closely and digitally monitor and evaluate the compliance of farmers and coops to certification standards and policies.
- Engage experienced and highly skilled agronomists and extension officers to effectively run the out grower program

Efficient supply



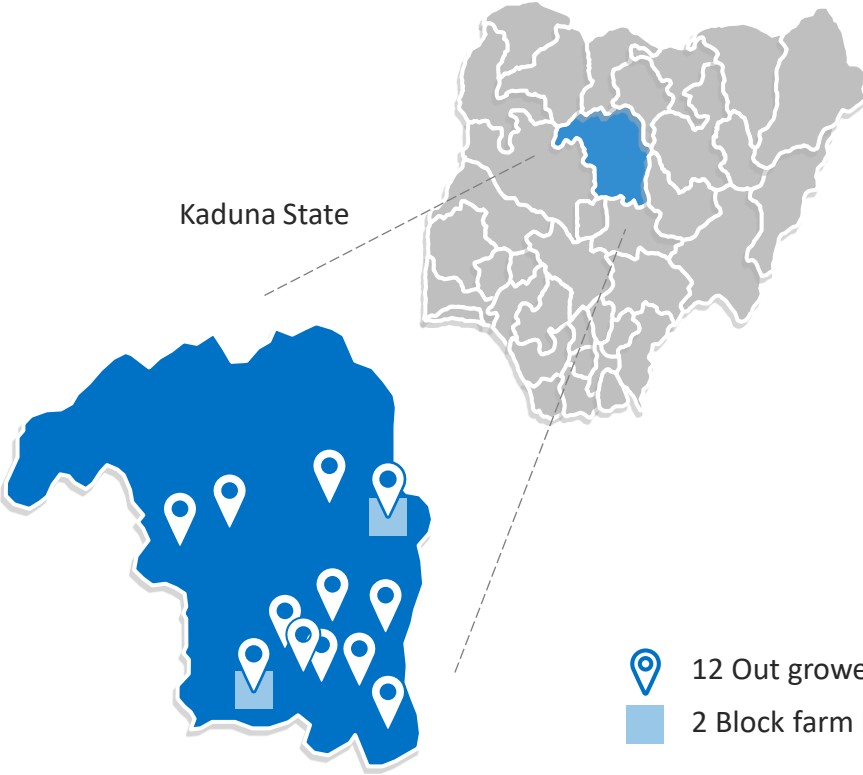


- Create new partnerships with local banks, off-takers, and input suppliers while showcasing the potential to transform the business.

Capabilities Required

Critical capacities

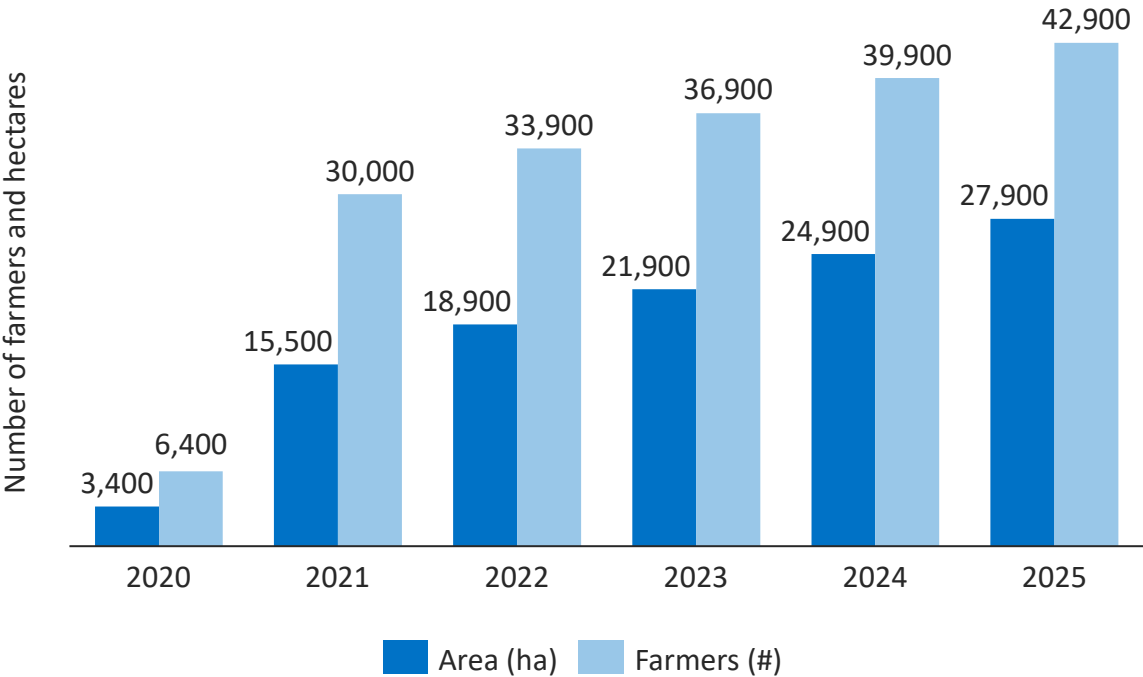
- Knowledge and expertise in smallholder service provision, to sustain productivity and mitigate risks due to degenerative soils and climate change
- Network and collaboration with government, other VCPs, and exporters to ensure off take, cost efficient service provision, and alignment with policies and standards
- Knowledge and expertise on how to establish and manage block farms
- Access to available land to be used for establishing block farms
- Ability to pay market prices to farmers to increase/secure farmer loyalty
- Ability to provide digital and banking solutions to increase traceability, sustainability, and access to finance
- Ability to model and analyze the financial and environmental output of (to be) implemented interventions on Farm and Service Centers level

The SDM | AgroLog’s operations are predominantly centred in Kaduna State, where the organization sources from both community farmers and block farms

Farmer Segments		Scale actual / projections	
<div><div></div><div>Community farmer</div></div> <div><ul style="list-style-type: none">Located in 12 local government areas within Kaduna StateAccess to input on credit and mechanization for land sanitizing and preparationAgroLog will off-take at least the equivalent amount of credit outstanding in ginger volumeFarmers cultivate ginger on 0.5 at the start and expand to 1.0 ha after one yearGinger cultivation only during the wet season</div>	<div><div></div><div>Block farmer</div></div> <div><ul style="list-style-type: none">Located in Matankadi, Kagarko Local Government, in Kaduna State with an irrigation facilityAccess to all services partners with AgroLog through an MoU100% off-take by AgroLog for prevailing market priceAllocation of 0.5 ha per farmer of land in the block farmGinger cultivation in both dry and wet season with the use of flood irrigation during the dry season only</div>	<div><div><div></div>12 Out grower LGAs</div><div><div></div>2 Block farm LGAs</div></div>	

The SDM | AgroLog aims to increase its community farmer base by 50% and block farming area a four fold, which enables AgroLog to meet sourcing targets and reach impact goals

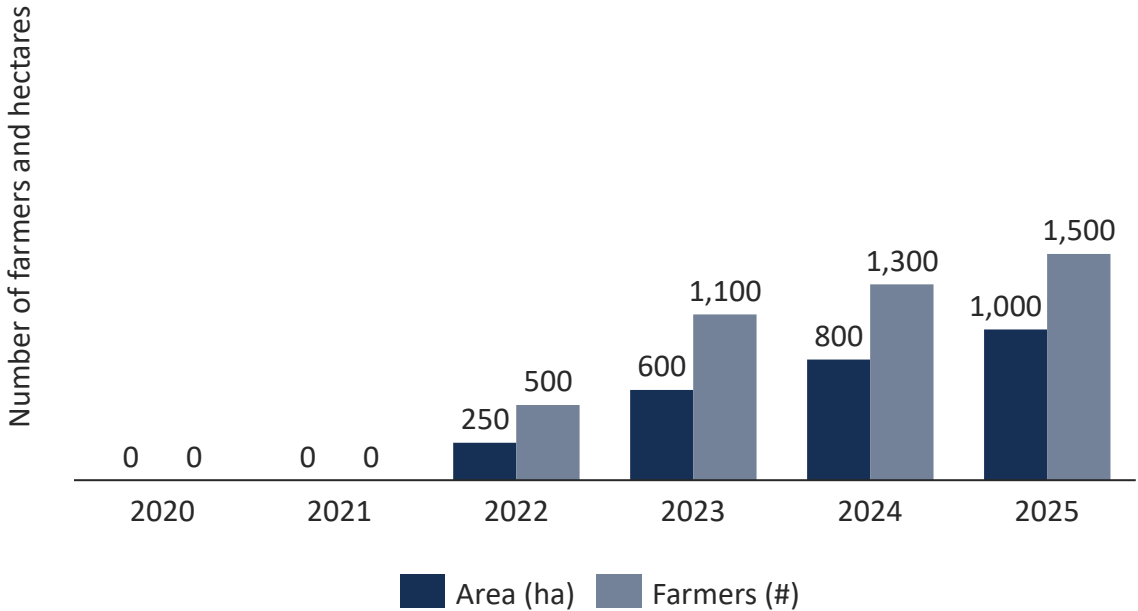
Scale of community farmers



- AgroLog aims to increase its community farmer base to up to 42,900 farmers by 2025, which is challenged by the need for farmers to transition from funding to credit based ginger cultivation

* Projected to onboard 30,000 farmers per year, of whom 10% continue after one year
** Projected to onboard 1,000 farmers per year, of whom 20% continue after one year

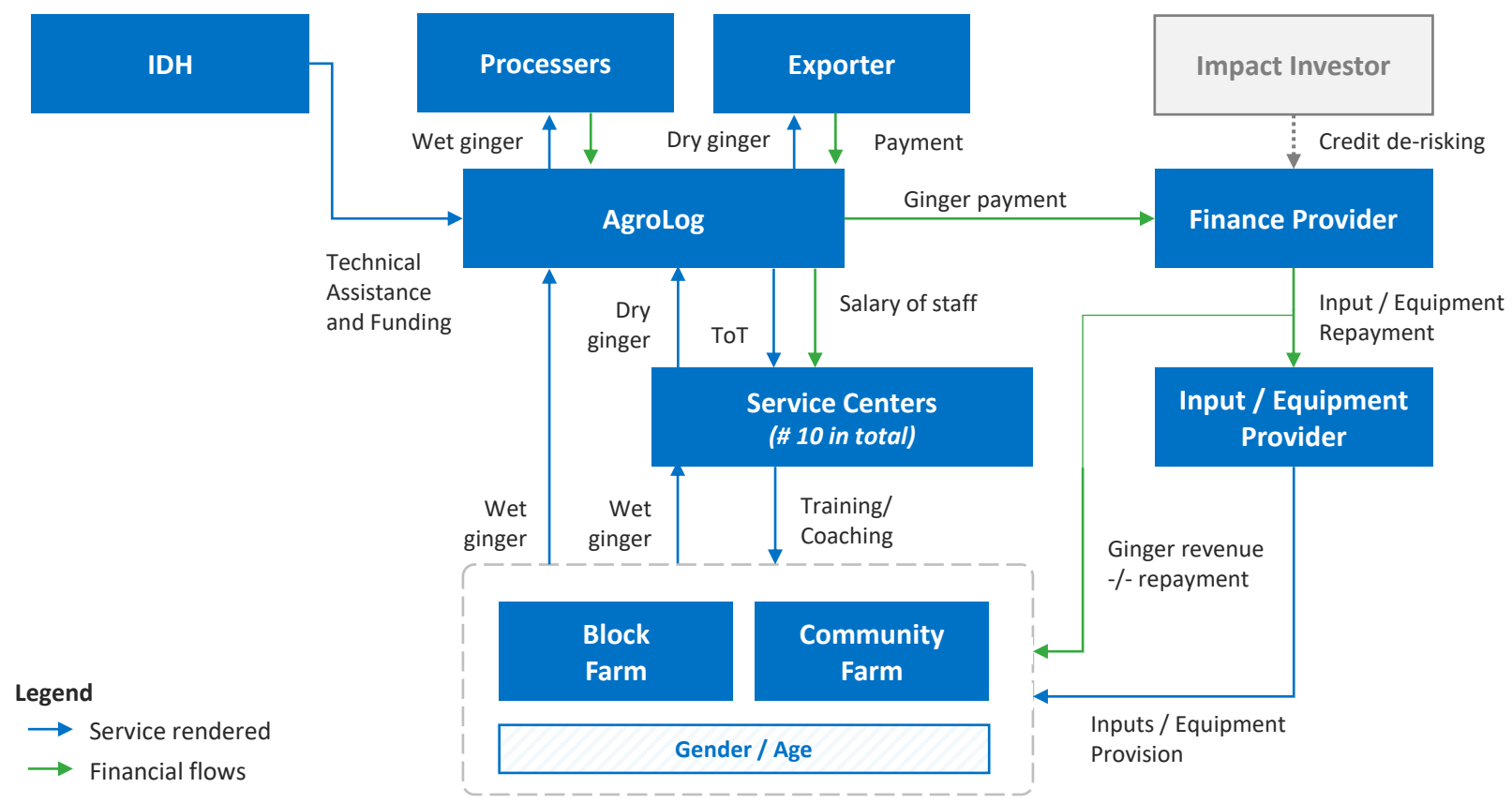
Scale of block farmers



- From 2022 onwards, AgroLog operates block farms in different areas of Kaduna State. By increasing the total area of the block farms, AgroLog aims to increase the number of farmers to work with, which enables AgroLog to increase their overall impact




The SDM | Service Delivery Model Ecosystem

Flow of goods and services between actors (as per 2022)






- I. The AgroLog SDM is a combination of training, inputs, mechanization, and access to the market
- II. AgroLog emphasizes value-adding through the sourcing and processing of wet ginger and sales of both wet and dry ginger through its 10 Service Centers that are located LGAs in Kaduna State
- III. The SDM was found by a three-year MasterCard input subsidy program, in which farmers received subsidies as an incentive to cultivate ginger
- IV. AgroLog is currently engaging with a Financial Service Provider (FSP) to enable farmers to change from subsidy to credit for their ginger operations

The SDM | Given that AgroLog works with different stakeholders in its ecosystem, AgroLog's operations should adequately aligned with multiple potentially conflicting interests

Stakeholder	Function (within SDM)	Revenue model	Incentive to participate
 AgroLog Ltd.	<ul style="list-style-type: none"> Value chain investor Sources and processes wet ginger beans and exports dry ginger products 	<ul style="list-style-type: none"> Margin on ginger sales Margin on service provision 	<ul style="list-style-type: none"> Increase and secure sustainable ginger supply, by achieving sustainability goals, transform the sector, accelerate progress, and contribute to alleviation of poverty in rural communities.
 Financial Service Provider	<ul style="list-style-type: none"> Blends investment with advice and resource mobilization to help the private sector advance development 	<ul style="list-style-type: none"> Payment of interest and commissions by Service Centers and farmers 	<ul style="list-style-type: none"> Attract new agri-customers Increase experience on business with smallholders and Service Centers. Capture savings made by smallholder farmers, and increase farmers access to banks services and products
 IDH (Project lead)	<ul style="list-style-type: none"> Accelerate/scale up sustainable trade with impact-oriented coalitions; Develop business solutions to poverty by linking people to information, capital and markets; 	<ul style="list-style-type: none"> None Advice fee 	<ul style="list-style-type: none"> Increase experience on business with smallholders and Service Centers Bring into practice the results of the SDM Analysis and test innovative interventions Showcasing the commercial viability of smallholder service and sourcing

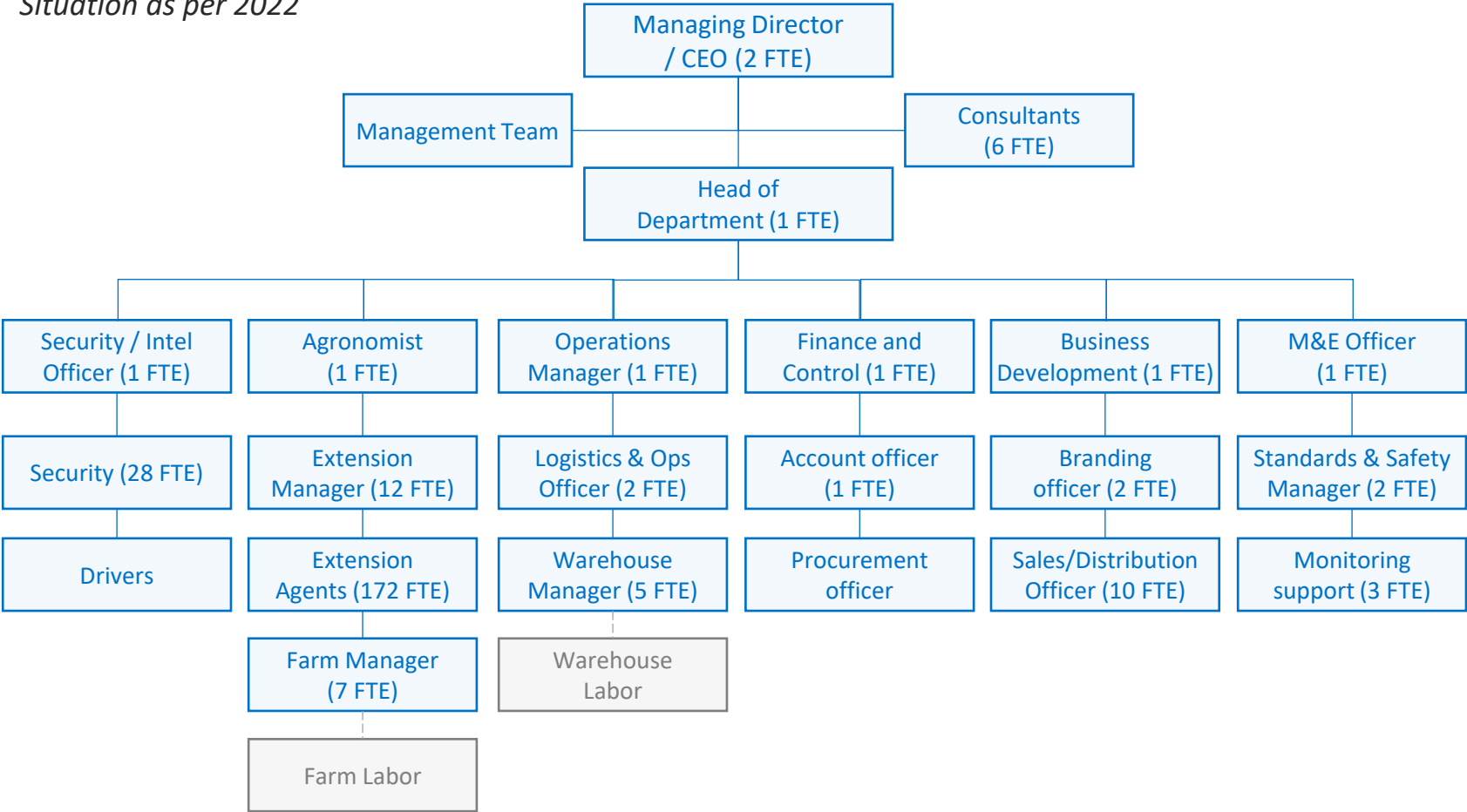
The SDM | Given that AgroLog works with different stakeholders in its ecosystem, AgroLog's operations should adequately aligned with multiple potentially conflicting interests

Stakeholder	Function (within SDM)	Revenue model	Incentive to participate
 Service Centers	<ul style="list-style-type: none"> Managed by AgroLog Supplies members with services and agro-inputs to improve farmer productivity and livelihoods 	<ul style="list-style-type: none"> Margin on dried ginger 	<ul style="list-style-type: none"> Increase and secure ginger supply Receive training and build management capacity, increase access to finance and woman empowerment
 Government	<ul style="list-style-type: none"> Governmental organizations Contributes to regulation, stabilization and development of the ginger sector in Nigeria 	<ul style="list-style-type: none"> N/a 	<ul style="list-style-type: none"> Catalyses the development of the ginger value chain in Nigeria Promote a diversified economic model for new generation farmers
 IITA (Project Leads)	<ul style="list-style-type: none"> Research institute to assess the possibility of creating sustainability certificates 	<ul style="list-style-type: none"> None Advice fee 	<ul style="list-style-type: none"> Increase experience on business with smallholders and Service Centers. Bring into practice the results of research

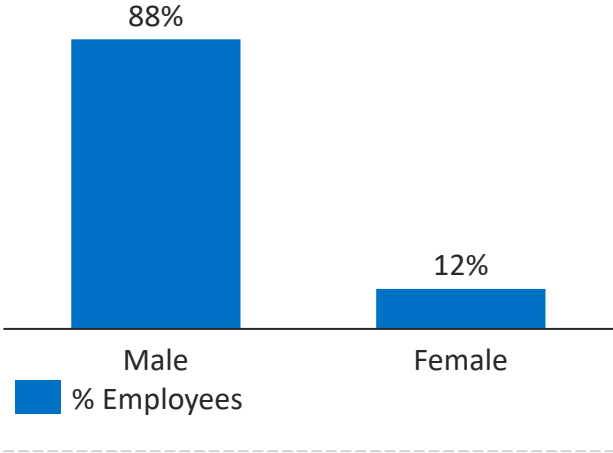
The SDM | Having pivotal management and operational positions filled, AgroLog has a strong employee base to operate the organization on both strategic and operational levels

ORGANOGRAM

Situation as per 2022



GENDER RATIO



- I. AgroLog aspires to expand its SDM team by hiring one extension officer to 200 farmers

The SDM | Leveraging an infrastructure of service centers/extension officers, AgroLog could improve its SDM by segmenting/graduating farmers based on to be collected/analyzed data



Outreach

- AgroLog operates 10 Service centers and sources from 12 LGAs. The Service Centers are used as sourcing and service provision hubs.
- Extension officers operate directly with farmers AgroLog sources from and try to reach out to other farmers.



Selection

- Both block farmers and community farmers are selected using by extension officers
- The extension officers work with village heads, women leaders, and youth representatives to select the right farmers in the community to source from and/or to become part of the block farm



Contracting

- Although not formally on paper, AgroLog commits to block farmers who are in the SDM to buy 100% of their cultivated wet ginger for the prevailing market price
- Community farmers are required to at least supply the value of input/labor they have bought on credit to AgroLog



Segmentation

- Farmers are scattered on smaller plots (community) or connected as larger ones (block). There is no farmer segmentation approach guiding service tailoring
- AgroLog is interested in developing a segmentation approach for service provision



Graduation




- AgroLog currently doesn't have a graduation approach to incentivize farmers who are part of the SDM
- The graduation approach is to be developed after AgroLog has made their farmers transition from the subsidized to the finance cultivation model






Data collection

- AgroLog extension officers use ComCare to register farmers. The moment the farmer is registered, the farmer is in the system with his/her GPS coordinates and picture of the farm(er).
- AgroLog registers the volume of inputs and ginger used/sourced with quality is tracked per Service Center (not farmer)

The SDM | The provision of inputs, training, and financial services are aimed to enable the farmer to reach feasible productivity levels, while mitigating becoming cash constrained

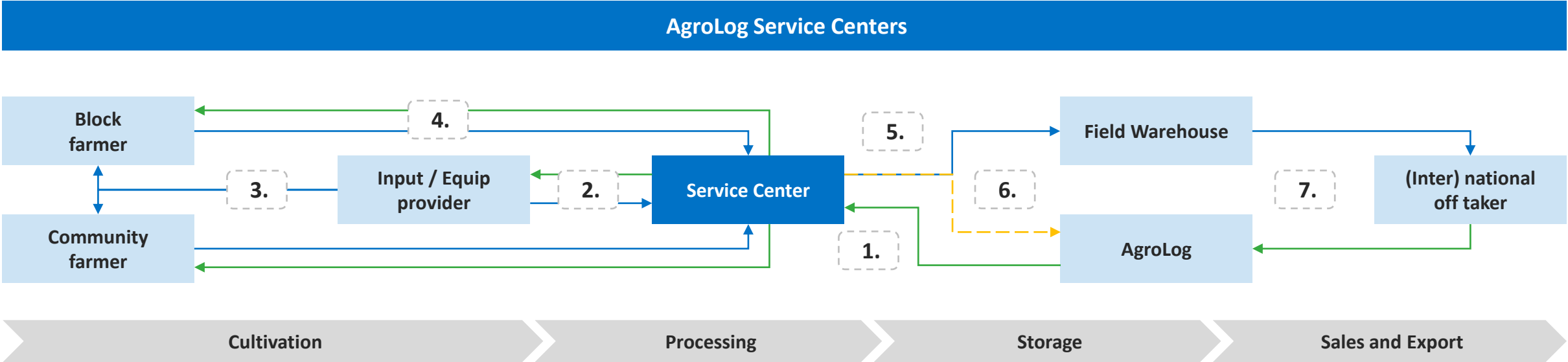
<div> <div></div> <div>Currently provided</div> </div> <div> <div></div> <div>To be developed</div> </div>			
Services	Delivery mode	Impact	Revenue model
 <p>Inputs</p>	<ul style="list-style-type: none"> ■ Fertilizer, crop protection, seed, rhizomes, machineries for pre- and post harvest handling, 	<ul style="list-style-type: none"> ■ Increased productivity ■ Reduced aflatoxin ■ Increased revenue from dried ginger / harvested ginger during low-season 	<ul style="list-style-type: none"> ■ Facilitated by AgroLog, financed by an FSP, repaid by farmers during harvest time, covered by increased sourcing volumes
 <p>Training</p>	<ul style="list-style-type: none"> ■ Demo plots, Training of Trainers, Farmer training through Farmer Field School ■ Certification 	<ul style="list-style-type: none"> ■ Increased productivity ■ Reduced aflatoxin ■ Merchandizing of the implementation of GAP 	<ul style="list-style-type: none"> ■ Paid by AgroLog and funded by IDH, covered by increased sourcing volumes
 <p>Financial Services</p>	<ul style="list-style-type: none"> ■ Facilitation of opening bank-accounts ■ Provision of finance and insurance ■ Pension/Healthcare Fund 	<ul style="list-style-type: none"> ■ Overcome cash constrained positions and cover potential defaults from climate shocks ■ Dampen cash out shocks 	<ul style="list-style-type: none"> ■ Facilitated by AgroLog, financed by an FSP, repaid by farmers during harvest time, covered by increased sourcing volumes

The SDM | Mechanization, transportation, and market access are aimed to capture income from value adding activities such as slicing, drying, and decreasing harvest loss

Currently provided		To be developed	
Services	Delivery mode	Impact	Revenue model
 <p>Equipment & Labor</p>	<ul style="list-style-type: none"> ■ Sorting, cleaning, splitting, drying, bagging, weighing through Service Centers ■ Irrigation for block farms 	<ul style="list-style-type: none"> ■ Increased productivity ■ Increased revenue from dried ginger / harvested ginger during low-season ■ Increased traceability 	<ul style="list-style-type: none"> ■ Facilitated by AgroLog repaid by farmers during harvest time, covered by increased sourcing volumes
 <p>Post-harvest Services</p>	<ul style="list-style-type: none"> ■ Transport from block farm and village (community farm) 	<ul style="list-style-type: none"> ■ Decreased time between harvest and processing, enabling sales of Category A instead of C 	<ul style="list-style-type: none"> ■ Paid by AgroLog covered with increased sourcing volumes and achieving higher sales price
 <p>Market Access</p>	<ul style="list-style-type: none"> ■ Contractual off take guarantee for market price ■ Warehousing system to connect supply, demand, storage, and transport 	<ul style="list-style-type: none"> ■ Secure increased sourcing volume of wet ginger ■ Decreased time between harvest and processing 	<ul style="list-style-type: none"> ■ Facilitated by AgroLog repaid by farmers during harvest time, covered by increased sourcing volumes

The SDM | Service centers play a pivotal role in AgroLog's SDM by functioning as the linking pin for capturing income from value-adding activities and service provision

→ Service rendered → Financial flows → Data/Information



- 1. AgroLog establishes one Service Center per LGA
- 2. Each Service Center is equipped with cultivating, harvesting, and processing assets, see [center analysis](#)
- 3. Service Center facilitate access to high quality inputs and services through affiliated input and equipment providers
- 4. Block and community farmers repay the received input, mechanization, and equipment with wet ginger to the Service Center. Volume beyond the outstanding credit is paid directly through the Payrail by AgroLog
- 5. At the Service Center, the wet ginger is timely sliced, dried, and bagged, to ensure ginger is possible to be sold as high quality, see [SDM Performance](#)
- 6. Dried ginger is transported to AgroLog's field warehouse and registered on AgroLog's platform ComCare
- 7. Dried and stored ginger is sold from the field warehouse by AgroLog to (inter) national off takers

The SDM | AgroLog should further formalize its sustainable practises by continuing and implementing its SDM strategy and performing audited M&E

1 The Sustainable Spices Initiative (SSI)

The Sustainable Spices Initiative -SSI is a global platform that brings together companies from the spices, herbs, dehydrated vegetables and food industry and retail, who are willing to develop a collective strategy and take a leading role towards the sustainable production, processing and global trade of the these ingredients.

Currently fulfilled To be achieved After all is achieved

2 Benefits of becoming member

Front runners	Strategy
Being part of the frontrunner group building sustainability to drive transformative processes towards more sustainable value chains, starting at the farm level.	Co-determine strategic agenda for the SSI Global platform and contributing to local SSI initiatives
Piloting	Intelligence
Investing in sustainable supply and piloting projects with suppliers.	Participating in collective platform for learning and sharing best practices.

3 Steps towards SSI



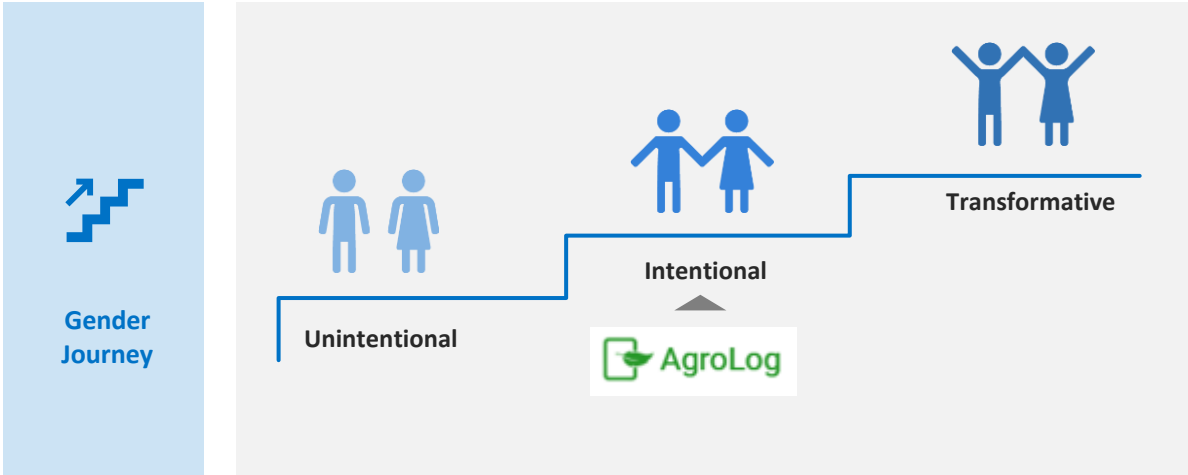
The SDM | AgroLog is gender intentional through selecting and serving gender equally but could improve its gender intention by formalizing a gender strategy and policies

Category	Status	Observations
Gender Strategy Is gender equality a strategic goal for AgroLog which is communicated in documents?	PARTLY	<ul style="list-style-type: none"> Although AgroLog strategically selects female farmers to source from and to provide services to, the company has not developed a formal gender strategy on how to be transformative in the long run
Data Collection Does AgroLog collect data on staff or customers / farmers disaggregated by gender?	YES	<ul style="list-style-type: none"> AgroLog extension officers use ComCare to register farmers. The moment the farmer is registered, the farmer is in the system with his/her GPS coordinates and picture of the farm(er)
Inclusive workplace Does AgroLog have policies or practices to make the workplace inclusive for both women and men?	PARTLY	<ul style="list-style-type: none"> AgroLog has a formal code of conduct to ensure ethical behaviour and organizational integrity. However, there could be improvements to ensure and potentially enforce inclusivity for both women and men
Inclusive consultation Does AgroLog speak to or consult both male and female customers (farmers) to learn about their different needs and preferences when designing a product	YES	<ul style="list-style-type: none"> AgroLog speaks to both male and female farmers to ensure services are in line with their needs. AgroLog implements a positive discrimination towards onboarding more women and young compared to men
Inclusive tailoring If services are tailored based on customers' needs and preferences, does AgroLog tailor these based on how needs may be different for men/women?	PARTLY	<ul style="list-style-type: none"> Services are tailored to the cultivation of ginger, where there is a positive discrimination towards onboarding women and youth on the SDM to align with organizational values and donor requirements
Independence and control over resources Does AgroLog provide services that allow women to have more independence and control over resources or move into roles in which they can gain more value?	YES	<ul style="list-style-type: none"> AgroLog envisions a collaboration with an FSP to ensure women have access to a bank-account and a mobile money wallet, with which they can have more control over their on resources

The SDM | AgroLog is gender intentional through selecting and serving gender equally but could improve its gender intention by formalizing a gender strategy and policies

Gender Assessment

JOURNEY ON GENDER INTENTION LADDER



- Current situation**
- AgroLog is gender intentional. The company has taken steps to understand the different needs and constraints of women and men in its internal process with the goal of ensuring both women and men have access to resources.
 - Although AgroLog strategically selects female farmers to source from and to provide services to, the company has not developed a formal gender strategy on how to be transformative in the long run.
 - AgroLog maintains a gender disaggregated farmer database and seeks to understand the unique needs and preferences of the male and female farmers they work with.

Possible measures to be taken

INTERVENTIONS / KPIs

Best practices to implement in becoming transformative

- Document the gender strategy for clarity on goals and agenda. Establish KPIs (e.g., targets on the number of male and female farmers you are aiming to reach), develop a roadmap to get there and allocate resources to monitor and measure gender goals.
- Promote an inclusive workplace for staff by developing comprehensive internal gender policies, approved by the management, and ensuring that these are periodically disseminated to all staff.
- Use sex disaggregated data collected to inform service delivery to farmers e.g., track sex disaggregated farm level metrics such as yield and income to understand gaps and need for services and skills.
- Inclusive tailoring of services by identifying women’s needs and preferences in view of training times and location to ensure their participation.

Potential KPIs to monitor on the gender journey

- Number of women benefitting from improved working conditions
- Number of women with reduced living wage gap
- Number of women with access to and control over income
- Increase in income for women
- Increase in the number of women accessing services

Business case





Assessing AgroLog's business case and opportunities for improvement

For business sensitivity reasons, we have excluded the pages of 'The business case' chapter from the report.

Impact case

Assessing farmer impact and opportunities for improvement

Segmentation | AgroLog's farmer base is segmented in community and block farmers, where the latter cultivates two instead of one season per year

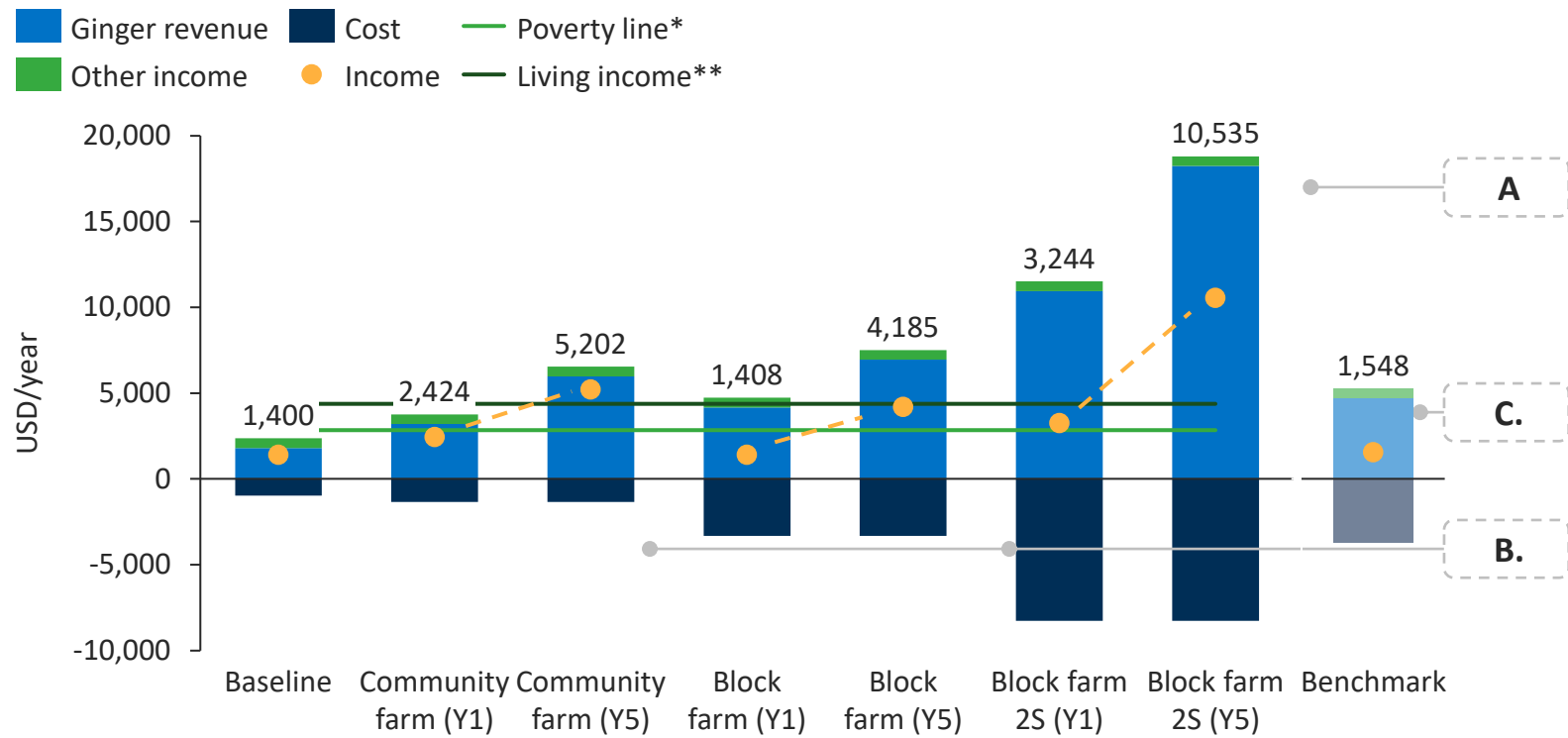
				
Distinctive characteristics*	Baseline**	Community farmer	Block farmer (1-Season)	Block farmer (2-Seasons)
Ginger land-size	1 hectare	1 hectare	1 hectare	1 hectare
Number of seasons	1 per year	1 per year	1 per year	2 per year
Current yield	10,000 kg/ha	15,000 kg/ha	15,000 kg/ha	15,000 kg/acre
Rhizomes for replanting	3,500 kg/ha	3,500 kg/ha	N/A	N/A
Own consumption	N/A	N/A	N/A	N/A
Farmgate price high season	0.28 USD/kg	0.28 USD/kg	0.28 USD/kg	0.28 USD/kg
Farmgate price low season	0.45 USD/kg	0.45 USD/kg	0.45 USD/kg	0.45 USD/kg
Share of low season sales	0%	0%	0%	50%
Cost of production	974 USD/ha/year	1,338 USD/ha/year	3,327 USD/ha/year	8,262 USD/ha/year
Farmer practices				
Harvesting	Manual	Manual	Mechanized	Mechanized
Land sanitizing, planting, cultivating	Manual	Mechanized	Mechanized	Mechanized
Rhizomes	Normal	Normal	Micro tubers	Micro tubers
Fertilizer / Crop protection	N/A	NPK + Crop protection	Organic, NPK, Crop protection	Organic, NPK, Crop protection
Irrigation	No	No	Yes	Yes

* Assumptions are based on the 2021/22 season. Prices and costs are converted from NGN to USD using an exchange rate of 480 GHS/USD

** A Baseline farmer is a farmer not receiving services from AgroLog. An SDM farmer is a farmer that does receive services from AgroLog

Living Income Gap | Implementing GAP and utilizing the services in AgroLog’s SDM, both community and block farmers are enabled to close the living income gap with ginger income

Poverty and living income gap per farmer segment USD/year



- A. All farmer segments are able to increase their income from ginger, mainly driven by using part of the ginger produce for replanting purposes and an increase in productivity due to mechanization, irrigation, and the cultivation of two seasons
- B. Only community farmers and 2 season block farmers are able to earn a living income, indicating the cost of intensive ginger cultivation by block farms is only effective if ginger is sold at high prices during the period of low ginger supply (April – June)
- C. Compared to the Benchmark***, community and the baseline farmer have considerably lower costs of production, mainly driven by lower labor and input costs, see [here](#)

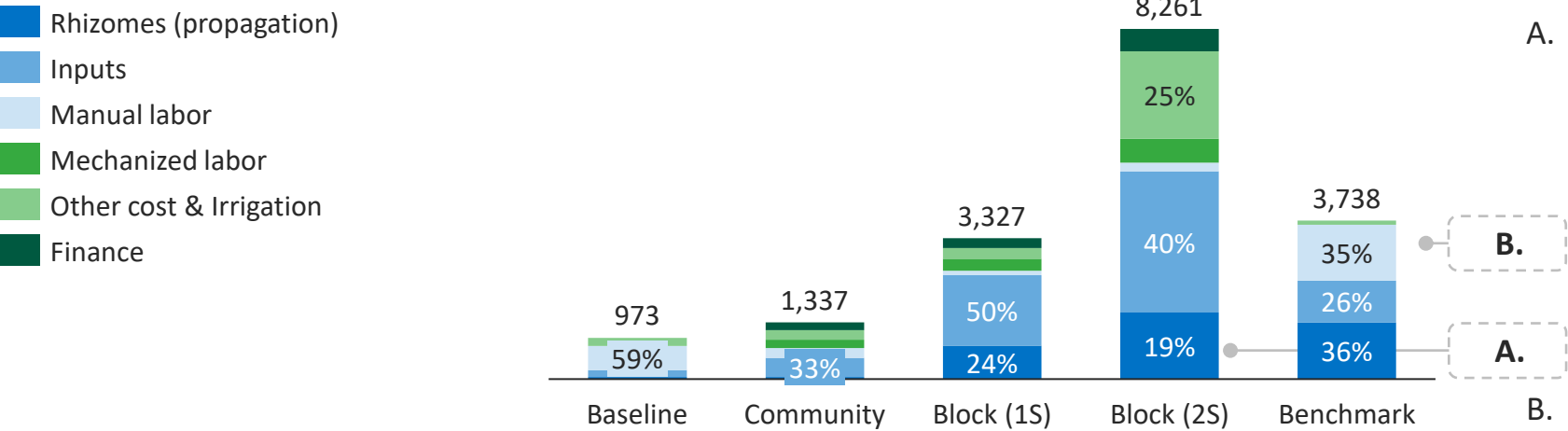
*Data on poverty line is obtained from [World Bank \(2022\)](#)

**The Living Income (LI), see [Anker \(2020\)](#), is an approximate income needed to meet a family’s basic needs including food, housing, transport, health, education, tax deductions and other necessities. The difference between the LI benchmark and actual income is referred to as the living income gap. The living income benchmark depicts a typical family of five members (2 parents and 3 children).

*** Benchmark is based on Ginger Baseline study performed by Fusion Consulting (2022)

Farmer serving cost | Production cost of all segments consists considerably of the cost of rhizomes, where block farms pay fertilizer and leverage lower cost of micro tubers

Cost of production year 1 for ginger cultivation USD/year/Ha



Farm-gate price (NGN/MT)	133,333	133,333	133,333	175,000	-
Marketable surplus (Kg/Ha/year)	6,500	11,500	15,000	30,000	-
Farm size (Ha)	1	1	1	1	1
Number of seasons	1	1	1	2	1
Planting material value (NGN/year)	801,500	801,500	366,400	366,400	640,667
Interest & Insurance charge	N/a	22% / 3.5%	22% / 3.5%	22% / 3.5%	-
Ginger income (USD/farm)	832	1,857	840	2,676	980

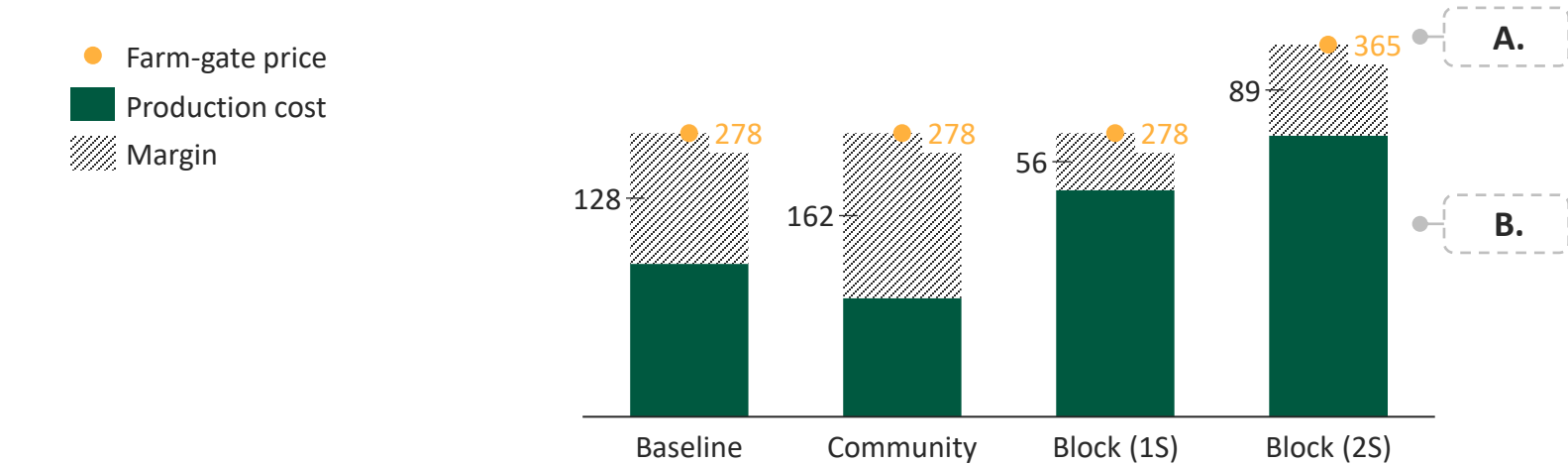
- A. Block farms use micro-tubers as planting materials which reduces the amount and cost of tubers (rhizomes) required per ha/season, due to a higher productivity per kg of micro-tubers. Baseline and community farmers use part of the harvest for replanting, while the Benchmark shows farmers purchase rhizomes on an annual based, similar to the block farms
- B. The majority of the manual labor for the farmer segments is assumed to be performed by the HH, the benchmark shows the contrary, with the cost of 1 hectare existing for 35% of manual labor
- C. The significant increase in input cost for the Block farmer (fertilizer), compared to the community farmer, only starts to be outweighed by additional productivity in year 5, see [here](#)
See annex for the overview of [what items are provided on credit](#)

* Prices and costs are converted from NGN to USD using an exchange rate of 480 NGN/USD ** Other consists of Crop protection, land rent, and transport cost

Production cost | Cultivating low cost micro tubers, block farms earn an increased positive margin compared to the community farmers

Initial (year 1) production cost in USD per MT and % of farm-gate price

USD/Mt



- A. Cultivating ginger for two seasons allows the block-farmer to sell ginger during times of low-supply and high sales prices. However, the additional potential income is lost due to irrigation cost
- B. Community farmers earn the highest margin due to having the lowest cost per Mt and having a similar productivity in year 1 compared to the block farmer. After five years, the difference in margin between community and block farmers decreases from 65% to 34%, due to
- C. With yield projected to increase from 15,000 to 25,000 per Ha/season, both community and block farms are able to increase their margin significantly, see [\[profit & loss analysis\]](#)

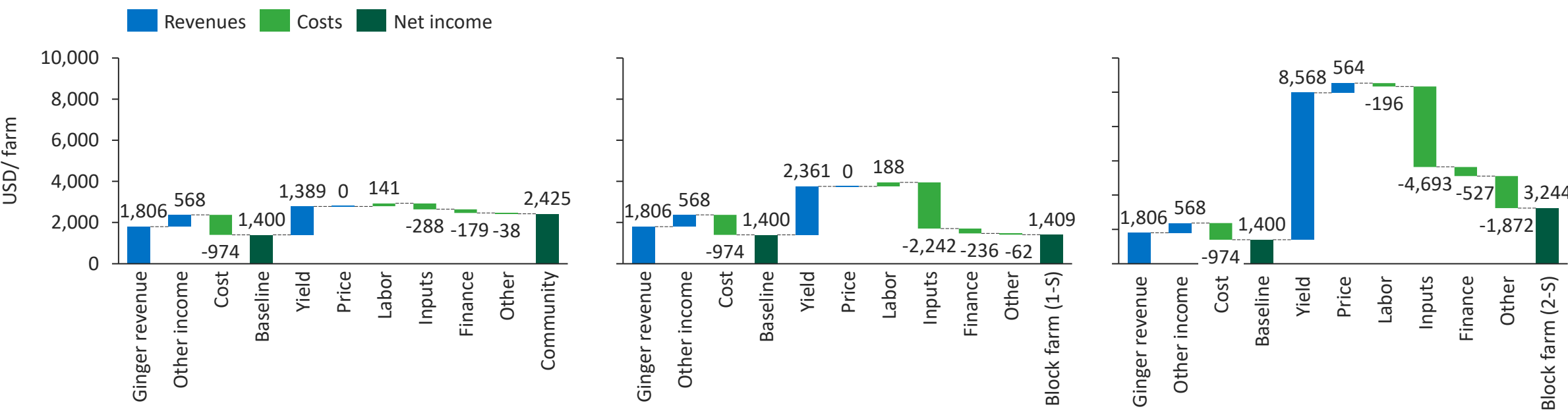
Marketable surplus** (kg/Ha/year)	6,500	11,500	15,000	30,000	A.
Profit (USD/MT)	128	161	56	89	
Profit (USD/Ha)	1,400	2,425	1,408	2,837	
Profit margin (%)	46%	58%	20%	24%	

* Prices and costs are converted from NGN to USD using an exchange rate of 480 NGN/USD

** Performance based on year 1 of each farmer segment

Income drivers | All segments out perform the baseline, due to an increased productivity, which outweighs increased cost of production from mechanization and fertilizer

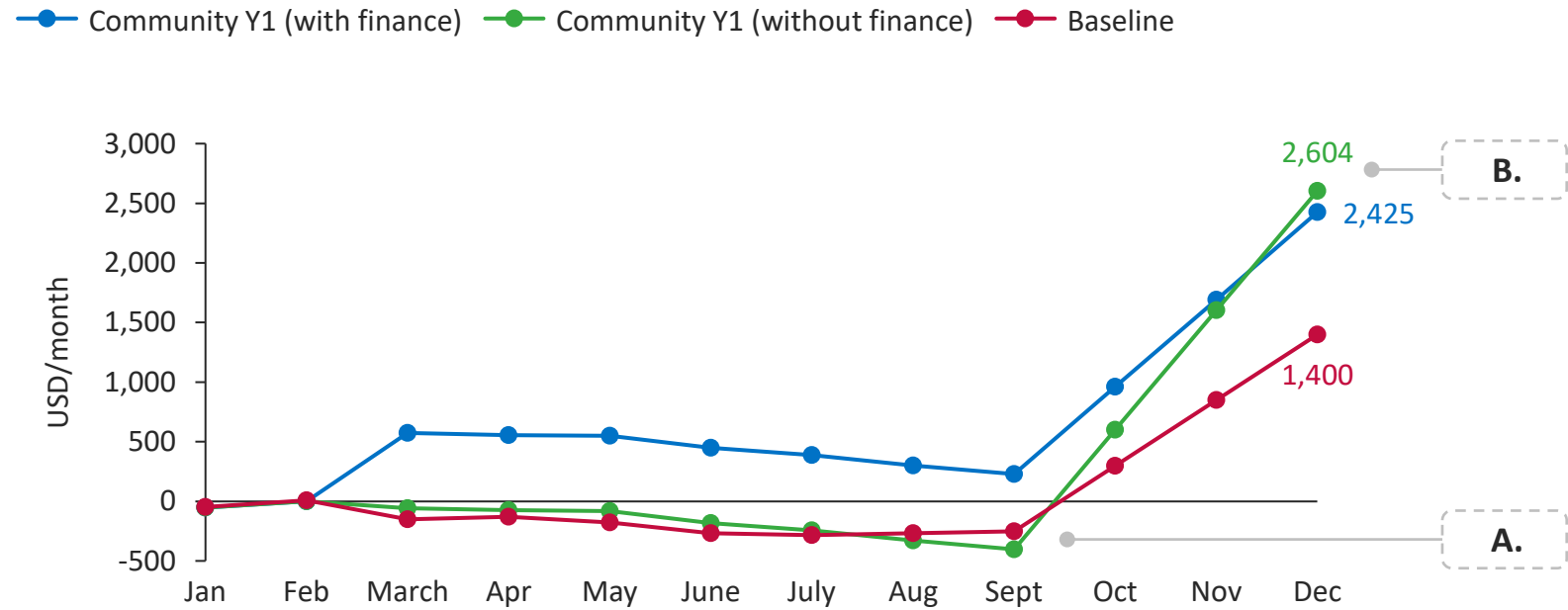
Ginger income and revenue drivers per segment USD/year



- Compared to the baseline farmer, the community farmer is able to achieve a positive return mainly driven by an increased production, which is driven by the application of GAP and inputs and utilization of mechanized harvesting
- Compared to the baseline farmer, the block farm is able to yield a positive return with one season only, which is driven by the application of GAP and inputs and utilization of mechanized harvesting
- Access to mechanized labor, high quality inputs and irrigation enables the block farmer to cultivate 2 seasons, which significantly increases the productivity per Ha per year

Cash flows | Current credit portfolio is not sufficient to prevent farmers becoming significant cash constrained, although the community farmer is able to mitigate constraints after 5 years

Initial (year 1) cumulative net cash flow for ginger farmers per month * USD/year



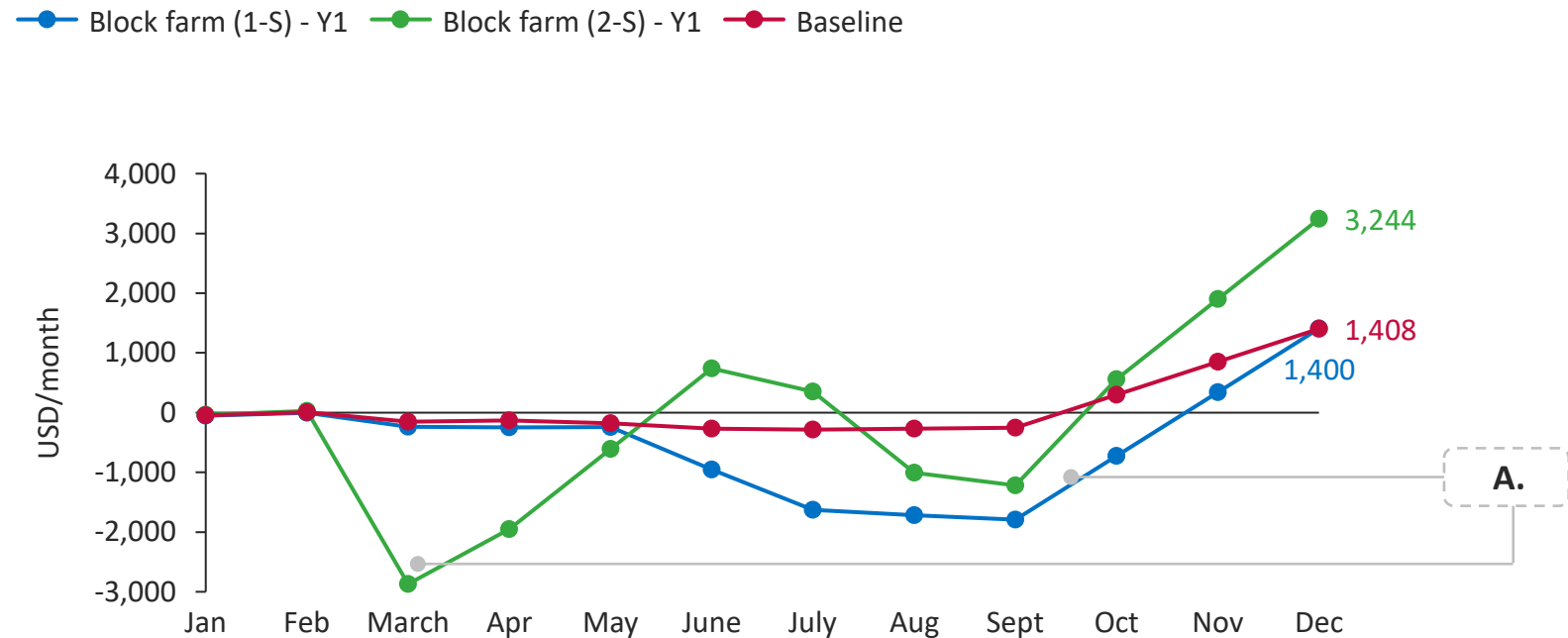
- A. Received finance for inputs, mechanized labor and land use in March is sufficient to mitigate the risk of becoming cash constrained between March and September, which is one month before harvest starts
- B. Community farmers who do not have rhizomes, but want to initiate ginger farming, face an initial investment of \$1,700/Ha for which there are no sufficient cash flows
- C. Productivity and annual income surpassing the living income benchmark after five years of cultivating within the SDM, showing the possibility to slowly increase the credit-line to community farmers as there is an increased certainty of farmers being able to repay while earning sufficient income



* Projected farmer cashflows do not factor in household expenses such as school fees, medical expenses etc. These expenses could lead to a different result if considered.

Cash flows | Leveraging cash surplus from the first season, only block farmers who cultivate two seasons can reduce the number of cash constrained months significantly

Initial (year 1) cumulative net cash flow for ginger farmers per month * USD/year



- A. The Block farm requires additional funding to ensure no cash constrained positions are faced during the first year, due to major expenses of micro-tubers (rhizomes) and organic fertilizer, which is not funded by AF, see [cost of production](#)
- B. Cultivating 2 seasons provides the block-farmer a positive position in June and Octo-Dec in year 1 (cash surplus), whereas the block farmer cultivating 2-seasons in year 5 only becomes cash constrained during Jan – Apr

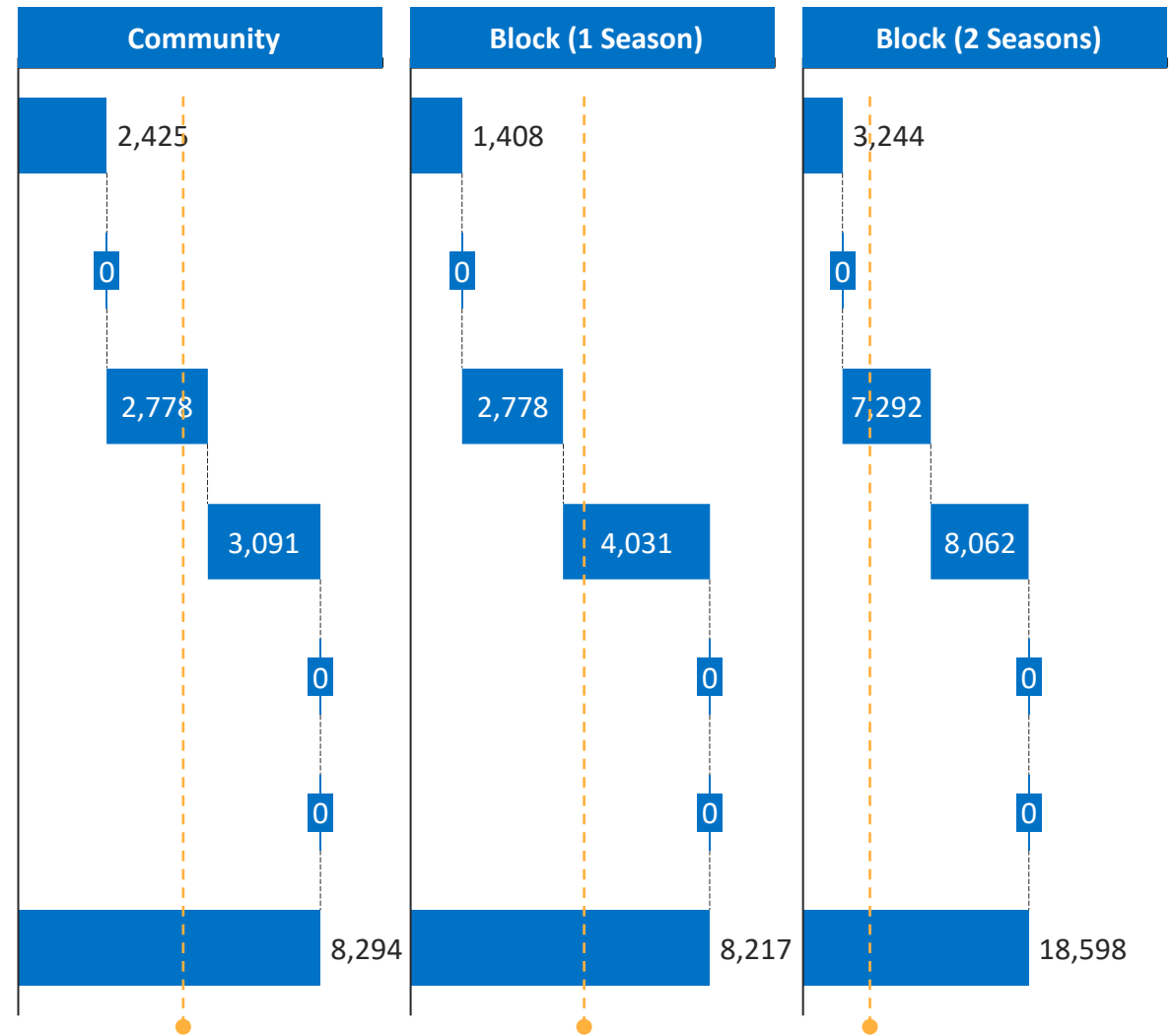


* Projected farmer cashflows do not factor in household expenses such as school fees, medical expenses etc. These expenses could lead to a different result if considered.

Living Income Drivers | Community and block farmers are able to reach a living income by leveraging GAP, using inputs on credit, and selling dry processed ginger during April – June

Feasibility		Change to close living income gap:
Unlikely	Likely	
Current income (USD/year)*		
Production area	Current ginger land-size and required change	<ul style="list-style-type: none">There is no feasible change in production area, due to the intention to mitigate the risk of deforestationRe-allocating land to ginger cultivation might make farmers reliant on ginger and vulnerable to shocks
Productivity	Current productivity per Ha and required change	<ul style="list-style-type: none">Feasible productivity is projected at 25Mt per Ha/season, which is 5 Mt less compared to what is required for the community and block farmer to close the gap
Price (value add)	Current price incl. premium and required change	<ul style="list-style-type: none">Without changing the moment of sales, a potential feasible change in price comes from the margin distribution from Service Centers, see [profit analysis], of 130,749 NGN/Mt
Cost of Production	Current cost of production per Ha and required change	<ul style="list-style-type: none">There is no feasible change in the cost of production, due to the intention to stimulate farmers to move away from subsidy to credit based ginger cultivation
Diversified income	Current non-ginger income and required change	<ul style="list-style-type: none">Further research should be done to see whether net income from intercropping outweighs loss of off-farm labor income, and can be linked to current market demand
Feasible income (USD/year)		

* Current income calculated on income from year 1
 LIB = USD 4,380



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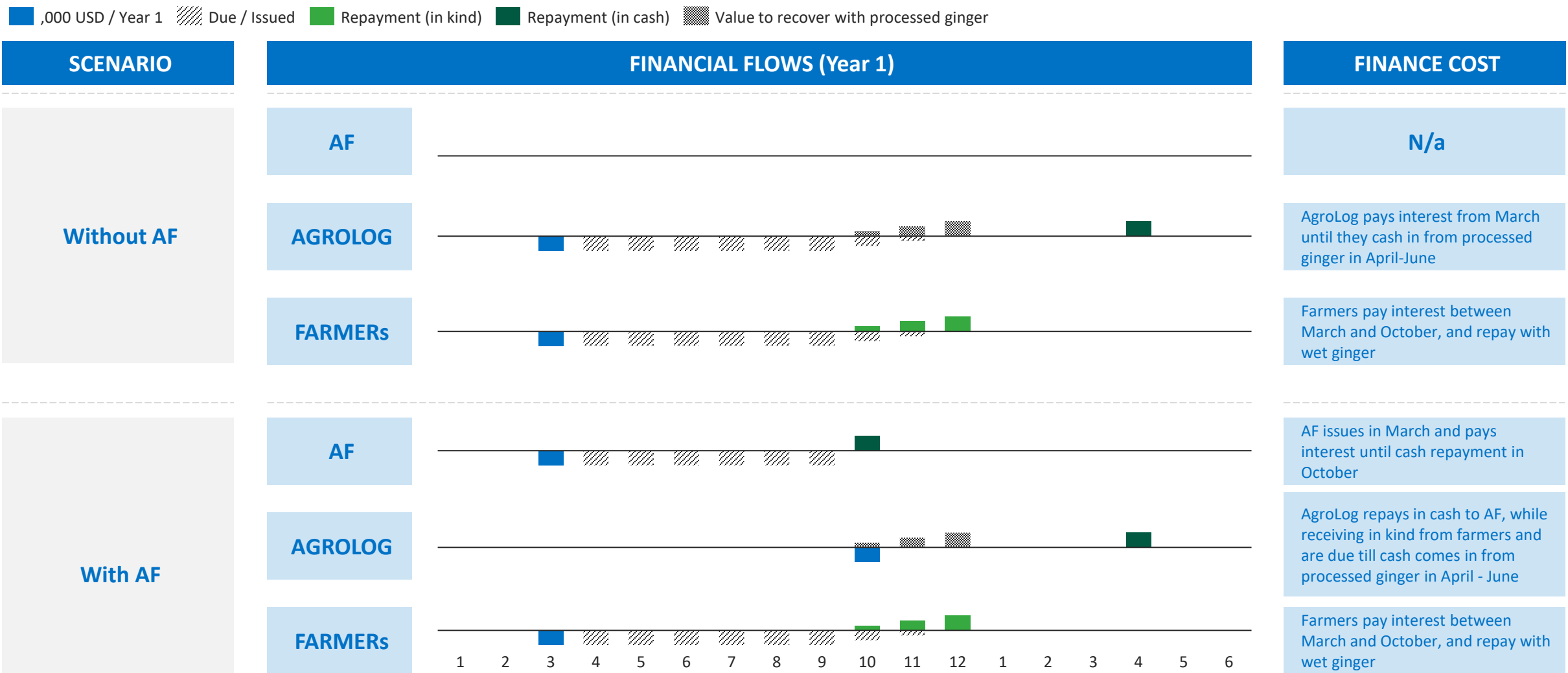
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Annex

Key assumptions and background information

Assumptions | Financial flows with and without Financial Service Providers



For business sensitivity reasons, we have excluded the pages of 'Assumptions – SDM level' chapter from the report.

Assumptions | Farm level (1/4)

Variable			Baseline	Community	Block farm (1-S)	Block farm (2-S)
Farm size			3.7	3.7	3.7	3.7
Cultivation ginger	Ha		1.0	1.0	1.0	1.0
Cultivation non-ginger	Ha		2.7	2.7	2.7	2.7
Number of season	#/year		1	1	1	2
Productivity						
Year 1	Kg/Ha/season		10,000	15,000	15,000	15,000
Year 5	Kg/Ha/season		10,000	25,000	25,000	25,000
Propagation	Kg/season		3,500	3,500	0	0
Own consumption	Kg/year		0	0	0	0
Bag size	Kg/bag		60	60	60	60
Sales price (NGN/bag)	Oct – Dec		8,000 (100%)	8,000 (100%)	8,000 (100%)	8,000 (50%)
	Apr – June		13,000 (0%)	13,000 (0%)	13,000 (0%)	13,000 (50%)
Other income	Other crop income	65,181 NGN/ha/year	176,751	176,751	176,751	176,751
	Non crop income	NGN/year	96,032	96,032	96,032	96,032

Assumptions | Farm level (2/4)

Variable	NGN/unit	NGN/unit	Baseline 1	Community	Block farm (1-S)	Block farm (2-S)	Financed
Manual labor		Days/Ha/season					
Land preparation		2,000	50	0	0	0	0%
Planting		3,500	20	0	0	0	0%
Fertilizer application		2,500	1	2	2	2	0%
Herbicides application		1,500	1	2	2	2	0%
Pesticides application		1,500	0	2	2	2	0%
Aflasafe application		1,500	0	2	2	2	0%
Mulching application		3,000	3	5	5	5	0%
Weeding		2,000	15	10	10	10	0%
Harvesting		2,500	25	25	0	0	100%
Mechanization		Days/Ha/season					
Land preparation		30,000	0	1	1	1	100%
Planting		25,000	0	1	1	1	100%
Ploughing/Harrowing		40,000	0	1	1	1	100%
Harvesting		40,000	0	0	1	1	100%
Inputs							
Seed sorting	Days/Ha/season	1,000	8	8	3.7	3.7	100%
Seed treatment	Kg/Ha/season	750	4	4	1.8	1.8	100%
Seed propagation	Bags/Ha/season	208	65	65	29.7	29.7	100%

Assumptions | Farm level (3/4)

Variable	NGN/unit	NGN/unit	Baseline 1	Community	Block farm (1-S)	Block farm (2-S)	Financed
Rhizomes	Kg/Ha/season	229	3,500	3,500	1,600	1,600	0%
Fertilizer	Bag/Ha/season						
Organic fertilizer		1,500	10	10	400	400	0%
NPK		12,000	3	6	6	6	100%
Crop protection							
Herbicides	Litre/Ha/season	1,500	2	4	4	4	100%
Pesticides	Litre/Ha/season	1,000	0	4	4	4	0%
Aflasafe	Kg/Ha/season	1,200	0	10	10	10	100%
Other							
Mulch	Bundles/Ha/season	200	100	500	500	500	0%
Transportation (bulk)	NGN/Ha/season	5,000	0	1	1	1	100%
Transportation (indiv.)	NGN/Ha/season	2,000	1	0	0	0	0%
Equipment	#/farm						
Rake	2 years	1,500	2	0	0	0	0%
Cutler	2 years	2,000	2	0	0	0	0%
Plough	5 years	5,000	1	0	0	0	0%
Hand hoe	5 years	3,000	10	0	0	0	0%
Knapsack	3 years	6,000	2	2	2	2	0%
Basin	3 years	4,000	5	0	0	0	0%
Bags	1 years	200	108	285	343	687	0%

Assumptions | Farm level (4/4)

Variable	NGN/unit	NGN/unit	Baseline 1	Community	Block farm (1-S)	Block farm (2-S)	Financed
Land rent	NGN/Ha/year	50,000	1	1	1	1	100%
Irrigation	NGN/Ha/season	400,000	0	0	0	1	0%
Finance							
Loan	Yes/No		No	Yes	Yes	Yes	
Principle	Yes/No		N/a	See %	See %	See %	
Interest	Yes/No		N/a	22%	22%	22%	
Insurance	Yes/No		No	Yes	Yes	Yes	
Principle	Yes/No		N/a	See %	See %	See %	
Premium	Yes/No		N/a	3.5%	3.5%	3.5%	

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