Ministry of Foreign Affairs

Final Systems Thinking Report Access to Finance Uganda Horticulture Smallholders

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QUAD TEE

Access to Finance for Horticulture Smallholder Farmers in Uganda

SYSTEMS THINKING APPROACH REPORT

October 2022

CONTENTS

ENGAGEMENT OBJECTIVES

A host of development actors in emerging markets have spent more than 60 years experimenting with approaches to providing farmers with access to financial services, all with minimal impact.

However, a renewed drive at the beginning of the 21st century to connect farmers to financial services has ushered in a new "era of farmer finance." Stakeholders from the separate silos of agricultural development, financial inclusion, information and communication technologies for development have found common ground in bringing the tools of financial empowerment to smallholder farmers.

The key to this is understanding the complex interactions that happen between access to finance actors, including the supporting functions.

For this engagement/project, the consultancy adopted a systems-thinking approach and mapping to explore and add additional insights around obstacles to access to finance for horticulture smallholder farmers when developing new programs. The final objective was to propose interventions.

The assessment brings to light the current state of the financial market system; the key stakeholders, supporting functions, barriers and potential tradeoffs and shares the results of a systems mapping process, undertaken with the goal of identifying program focus areas and actions for the Dutch Ministry of Foreign Affairs.

The **overall aim being to improve access to finance for horticulture smallholder farmers,** in particular youth and women.

Purpose Phase 1:

- The purpose of this assignment was **to gain better insights into barriers for financial access in the horticulture sector in Uganda, and to map and analyse the complexities within the system** around the (lack of) access to finance for horticulture smallholder farmers. In this phase, root causes and enablers/ leverage points were identified, in order to thoroughly understand the access to finance for the horticulture smallholder farmers' landscape in Uganda.

Purpose Phase 2:

- The outcomes of phase 1 **provided a thorough understanding of the root causes and persistent challenges resulting in the lack of access** to finance for horticulture smallholder farmers in Uganda.

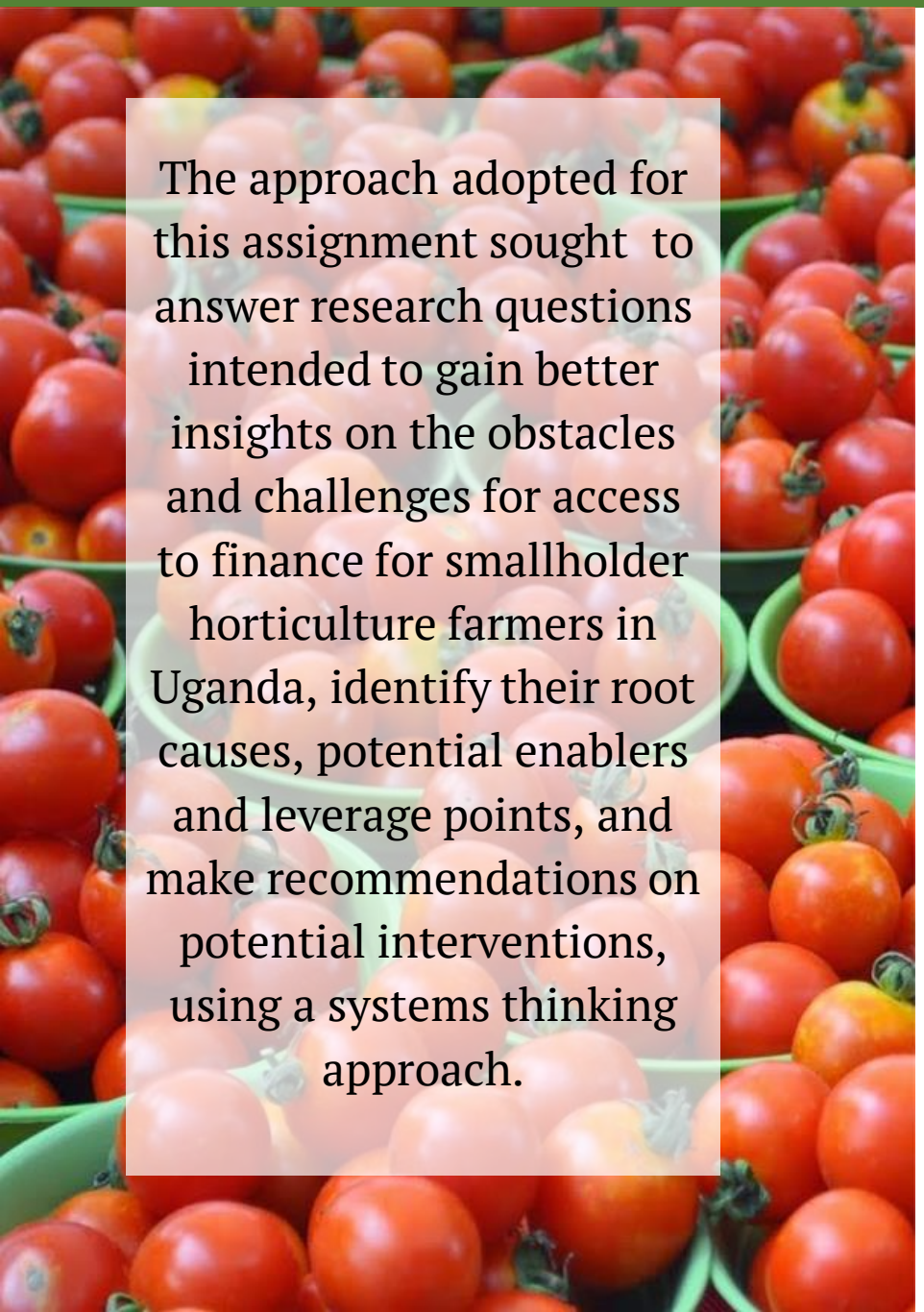
+ Identify Interventions:

- Based on these, the next step **identified interventions that trigger key leverage points and** then **address the identified local needs and crucial bottlenecks.**

+ Insights- economic growth and job creation:

- Additionally, insights were made into the possible impact on economic growth and job creation from the interventions that are selected.

APPROACH AND METHODOLOGY



The approach adopted for this assignment sought to answer research questions intended to gain better insights on the obstacles and challenges for access to finance for smallholder horticulture farmers in Uganda, identify their root causes, potential enablers and leverage points, and make recommendations on potential interventions, using a systems thinking approach.

The following methodology was deployed:

A. Scoping: Understanding of the context, deliverables, defining the system under review and limitations.

B. Preparatory: Initial stakeholder assessment, preparation of interview templates and tools, work-plan finalization. This followed systems thinking training training by Metabolic and customization of the tools to the approach.

C. Literature review: Gathering information from a broad scan of literature and data, the included policy documents, research papers, programme reports, among others

D. Interviewed key stakeholders; A range of stakeholders working to address the needs of smallholder farmers in Uganda, were targeted for interview. They range from formal financial institutions, including state banks, commercial banks and microfinance institutions; to non-financial institutions, including mobile network operators and value chain actors; to informal or community-based financial institutions, including SACCOs, money lenders, credit cooperative organisations, among others and farmers.

E. Validation and intervention ideation workshop: Type of participants: guests ranged from financiers, farmers, input providers, development sector players, government representatives, and other agricultural players.

F. System mapping: Mapping the causal relationships using Kumu and evaluating potential leverage and risks associated with the different elements in this systems map

G. Intervention exploration: Using the systems map to look for feedback loops and leverage points , evaluating a long list of potential interventions with an eye on risks for trade offs or co-benefits

H. Documentation and Report writing: Internal and external peer review, presentation to PADEO and EKN, and other stakeholders.

OVERVIEW OF THE AGRICULTURE SECTOR - Global Context

GLOBAL CONTEXT

Agricultural development is critical to achieving the Millennium Development Goal of reducing poverty and hunger. With a growing global population and an estimated 850 million people worldwide who are undernourished, it is expected that the demand for food will continue to increase. At the same time, food price spikes in recent years have intensified global concerns about current levels of agricultural production. These trends have resulted in a spotlight on food security and agricultural development and on the role of financial institutions in increasing agricultural producers' access to finance.

An estimated 500 million agricultural smallholder farmers (SHFs) farm up to two hectares of land, with 2 billion to 2.5 billion people living in these SHFs households worldwide (Hazell 2011 and Christen and Anderson 2013). These SHFs also play a key role in increasing food supply, more so than large farms in poor countries, and increasingly supply large conglomerates and corporations with inputs for their products (Carroll et al. 2012).

Despite their socioeconomic importance, SHFs tend to have little or no access to formal credit, which limits their capacity to invest in the technologies and inputs they need to increase their yields and incomes and reduce hunger and poverty, both their own and that of others.

OVERVIEW OF THE AGRICULTURE SECTOR – Ugandan Context

UGANDAN CONTEXT

Uganda is a country driven predominantly by the agriculture sector, which was responsible for 24% of GDP in 2021/2022. The Uganda Bureau of Statistics (UBOS) estimates that the sector employs over 80% of the labour force and provides half of export earnings. The proportion of the household members engaged further increases to 90% when focusing solely on the female population and to a lesser extent 38% for the youth household members. Uganda produces a wide range of agricultural products including matooke, maize, beans, groundnuts, millet, sorghum, cassava, sweet potatoes and numerous horticultural crops, which account for 93% of Uganda's crop planted area.

It is estimated that SHFs (those with an average farm size of 2.5 hectares or less) constitute 85% of the farming community, with the majority engaged in smallholder agriculture (MoFPED & EPRC, 2019). UBOS National Agricultural survey 2020 estimates this number to be 7.4 Million smallholder households working on an average of 1.35-2.5 hectares of land.

The horticultural industry more than ever before has emerged as a promising sector for increasing incomes and jobs for participating smallholder farmers, improving the nutrition of the people, diversification of exports, provision of raw materials for agro-based industries and creating employment, especially for the youth. The horticulture sector contributed 14.4% of the national GDP for FY21/22, producing about 5.8 million tons per year (worth US$35 million).
The sector accounts for 85% by total number of agricultural products shipped out of the country annually. These include fruits such as bananas, passion fruits, pineapples, avocados, among others and vegetables such as hot pepper, eggplants, okra and chilies exports.
The horticulture sector offers good opportunities for increasing resilience and climate-smart agriculture through high productivity and efficient resource utilization. Horticultural products are one of the fastest growing local and export sub-sectors in the country (estimated at 20% per annum).

These trade flows support rural employment and economic development given that a wide range of horticultural crops are produced throughout the year with practically no irrigation or fertilizer, the few that are accessing fertiliser and chemicals were experiencing quality issues, and leading to over use. In addition, it also provides the potential for high returns/income due to the high value of horticulture products (high economic returns per unit of land), estimated between 50% - 80% profit margin (depending on the vegetable or fruit selected). The sector also attracts a high level of women and youth involvement due to low land requirements and short maturing periods.The Agricultural survey 2018, estimates 90% of female population are engaged in agriculture activities and 38% youth.

Despite their significant contribution to the economy of Uganda, farmers, particularly SHFs, face major constraints in their access to finance. The Bank of Uganda in 2020 reported that only 12.2% of total banking sector loans and advances were to the agricultural sector which represents an increase of 4% points from 2018.

OVERVIEW OF THE HORTICULTURE SECTOR IN UGANDA

Ugandan horticultural exports for fresh fruits and vegetables have shown steady growth in the last 2 decades from an estimated 5,600 tones (worth approximately US$5.6 million) was exported by 23 companies to producing about 5.3 million tonnes per year (2021) exported by 65 companies. (Ministry of Agriculture animal industry and fisheries). The country is the second largest producer of fresh fruits and vegetables in sub-Saharan Africa, after Nigeria (Dijkxhoorn, Youri et al., 2019). Export destinations include to the EU, Middle East and the COMESA region. On average fruit and vegetable exports account for approximately 5% of total exports.

Smallholder growers are scattered all over the country and dominate the supply chain of horticultural produce. Vegetables are produced in all districts of Uganda, while fruit production is centred in the southern, central and eastern regions.
Producers of horticultural crops in the country are generally dependent on other actors in the value chain and tend to have limited control over input and produce prices. The majority of small-holder farmers depend on rain-fed production which constrains supply. This has led to deficit and bumper harvesting seasons which translate into fluctuating farm gate prices throughout the year.

Although the processing of fruits and vegetables is almost non-existent in Uganda, there is good long-term potential for it. Small market niches exist for solar-dried banana, pineapple, mango, papaya, and chilli as well as passion fruit juice and concentrate. Because of Uganda's dependence on airfreight for extra-regional horticultural exports, the sector is restricted to very high-value products that can support the cost of air freight.
Importance is given to the development, multiplication and dissemination of high-yielding varieties of horticultural crops and the production of seeds and planting materials. The potential of the Fruits and Vegetables sector to significantly contribute to poverty alleviation through income generation activities in both rural and urban areas is considered to be very high.

The horticulture industry generates a significant number of jobs in Uganda. The ecosystem of off-takers/farms directly employs more than 10,000 permanent staff;

The sector is estimated to benefit 2.5 million people while 1.5 million households benefit from exports, border trade and domestic trade of fruits and vegetables.

The government of Uganda has pursued a number of policies and strategies under the Plan for Modernization of Agriculture, to improve production, productivity and market access and horticulture is among the 12 priority commodities identified and selected for focused investment in the long term . with this in plan the value of horticultural exports could grow to the US $70-100 million per year, based on products that are already being exported in relatively small quantities. Although the processing of fruits and vegetables is almost non-existent in Uganda, there is good long-term potential for it. Small market niches exist for solar-dried banana, pineapple, mango, papaya, and chilli as well as passion fruit juice and concentrate. Other market opportunities include the high demand in the domestic market as the country progresses to middle-income status with high population growth and urbanization rates.

The potential of the horticultural sector to significantly contribute to poverty alleviation through income and job generation activities in both rural and urban areas is considered to be very high. However the potential for horticulture is far from being realized due to many challenges; the sector is characterized by weak producer-market linkages; limited use of quality inputs and a lack of irrigation infrastructure – rendering production vulnerable to climatic extremes and pest infestations.

Sector growth is also impaired by the lack of quality packaging capabilities, insufficient storage facilities, poor post-harvest handling practices, shortage of agricultural credit, high freight costs, the lack of all-weather feeder roads in rural areas and limited knowledge of modern production practices. Ugandan producers often find it difficult to meet sanitary and phytosanitary standards required to export goods to the export markets. Despite the country being the second largest producer of fresh fruits and vegetables on the continent ,Horticulture productivity is still is low compared to potential and current demand.

Reference: aBI Development Limited: HORTICULTURE INVESTMENT FEASIBILITY STUDY (October 2021)

OVERVIEW OF FINANCIAL SERVICES IN UGANDA

Uganda's financial sector is categorised in a tiered framework.

- **Tier I** constitutes 26 commercial banks;
- **Tier II** has 4 Credit Institutions;
- **Tier III** has 5 MDIs with
- **Tier IV** has over 2,000 MFIs and SACCOs. All institutions are regulated by the Bank of Uganda with additional regulation to oversee Tier IV financial institutions by the Microfinance Regulatory Authority.

There is a diverse range of financial institutions that provide financial services to Uganda's agricultural sector, some state-owned and some private. However, there are also informal sources of finance, such as family and friends, self-help groups, and village savings and loan associations (VSLAs) (UN, 2018).

Financing the Agriculture Market System:

- There has been increased interest in the agribusiness sector over the past couple of years and opportunities for financing exist from different sources. However, it's important to note that most of the formal credit going to the agricultural sector was provided by commercial banks (IMF, 2020). key contributing banks to this portfolio include; Pride Microfinance Bank, Opportunity Bank, Centenary Bank, DFCU Bank, PostBank, Equity bank and FINCA. Nevertheless, it has been observed that the agricultural sector still attracts considerably less financing from the formal financial sector compared with other sectors such as industry (36% share of total credit) and services (52%) (EPRC, 2020). This is relatively low given that the sector contributes a significant 23% to the country's GDP and employs approximately 70% of the population. This is partly due to the often low return on agricultural investment due to the numerous risks that are involved in agribusiness activities.

Agricultural finance - demand and supply:

- There are no precise numbers on the demand for agricultural finance in Uganda. A very rough estimate by UBOS -UNHS 2019/2020 suggests only 16% of the households sought loans/credit from banks. 24% of adults sought loans from other services providers, other than banks. The percentage of SHFs with access to finance is equally difficult to quantify. According to estimates, even promising approaches to expanding smallholder lending, such as value chain finance, are reaching fewer than 10% of SHFs, primarily those in well-established value chains dedicated to higher-value cash crops like coffee and maize.

The challenges to increasing access to finance are numerous and well documented:

- Financial institutions that are interested in serving this market face myriad risks and challenges associated with agricultural production and lending, including seasonality which affects the payment capacity of farmers, high transaction costs, plant diseases, and market access. While these challenges apply to agricultural lending in general, they impinge more on horticulture smallholder lending in particular, given the relatively higher transaction costs and perishability of products. However, if horticulture production has the potential to provides higher returns and tends to be more assured if the production environment is more controlled, ie

EKN's inquiry into agricultural finance:

- Against this background, EKN/PADEO engaged a consultancy through diverse partnerships to obtain insights into the challenges of agricultural finance for horticulture farmers. Amongst other benefits, the outcomes of this work have been a better understanding of the different market segments in agricultural finance, and of the roles (actual and potential) of different stakeholders in addressing agricultural finance for horticulture SHFs issues.

QUAD TEE

SYSTEMS THINKING APPROACH & STAKEHOLDERS ENGAGED

SYSTEMS THINKING APPROACH TO OBSTACLES IDENTIFICATION, ROOT CAUSE ANALYSIS AND INTERVENTION DESIGN

The engagement utilized the systems thinking approach, which requires shifting the way that you think about problem identification (obstacles to access to finance in horticulture) and solution building (intervention design).

Consideration for the access to finance system was given to the different elements that were considered relevant. These elements were tagged into different categories depending on their influence on the demand-side, supply side and enabling environment continuum. Tags included: Farmers (demand), FSP's (Financial Service Providers - supply), Market, Input Provider and Regulatory.

The elements were further grouped into various types such as: financial, regulatory and institutional policies & strategies, information & skills gaps, market access, productivity and business mode).

We utilized the Kumu template and system to map out the various elements. Ug Kumu excel. In order to understand and document why the access to finance system was leading to certain outcomes, we looked at the type of relations between documented elements by making connections depending on how one element influenced the other, both at the direct effect as well as indirect effects. Connections were made depending on how the different elements were interacting, either strengthening one another or countering each other.

Once the obstacles to access to finance were identified, we applied the systems thinking approach in the analysis in order to identify the actual root causes of the obstacles.

SYSTEMS THINKING APPROACH

From the outset,, this engagement was designed to utilize the Systems Thinking Approach under pilot by PADEO:

Programmatic Approach for Sustainable Economic Development (PADEO) is a pilot program focused on applying a new systematic approach to achieving goals outlined in SDG 8: promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

This engagement is part of the first phase of the PADEO program focuses on gaining insights around some persistent challenges of smallholder access to finance, observed in the horticulture sector in Uganda. The objective is to understand the root causes of those challenges, as well as the role of involved stakeholders and opportunities to contribute to positive long-term impact.

PADEO arranged for our team of experienced agrifinance consultants and practitioners to be trained on the application of the Systems Thinking Approach by METABOLIC. The team provided the tools and guidance for executing the approach. We thereafter updated our research methodology and tools to align with the systems thinking approach.

WHAT IS A SYSTEM?

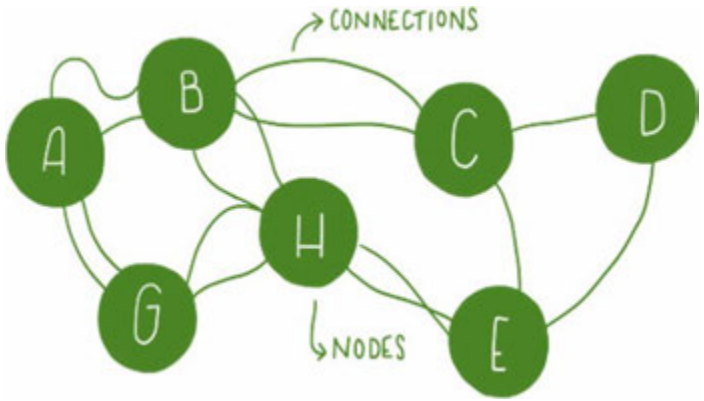
"A system is a set of interacting or interdependent components forming an integrated whole".

Key thing to consider for a system is the different elements that are relevant (policies, technologies, people, organisations etc.) But to really understand why a system is leading to certain outcomes we need to look at the type of relations between these elements, how one element interacts and influences the other, as well as direct and indirect effects. Further consideration is given to elements strengthening one another or countering each other.

"Systems theory is a framework which can provide tools for thinking about problems within the context of a system. One key insight within systems theory is that the outcomes or impacts of a system are ultimately caused by its structure. Behavioural patterns are rooted in systemic structures such as biophysical conditions, markets, and political institutions, which are in turn influenced by the mental models and perceptions that guide our decision-making and the establishment of structures."

WHAT IS SYSTEMS THEORY?

 # We limited our system to 'access to finance for SHFs in horticulture'. Our scope was limited to those interacting or interdependent components concerning our problem of lack of access to finance. Actors included SHFs on the demand side, financial service providers on the supply side, and other actors in the system such as input providers, off-takers, government, development actors, FinTechs, etc.
We defined various elements depicting the obstacles, root causes, enablers and leverage points as the nodes; and also made connections based on identified interactions. ***# See Systems Maps***



Reference: ***Metabolic (2018) Using Systems Thinking to Transform Society, The European Food System as a Case Study, Erin Kennedy, Eva Gladek, Gerard Roemers - Commissioned by WWF Netherlands***

STAKEHOLDERS ENGAGED

A cross-section of stakeholders in the system (actors in access to finance for SHFs in horticulture) were interviewed during the engagement. These were broadly categorized into the demand side (farmers), supply side (finance providers - formal and informal), enabling environment (government, donors and development sector actors), and non-traditional players (fintechs). These included:

PADEO Actors

- Embassy Kingdom of Netherlands (EKN)
- Sustainable Economic Development Department (DDE)
- Netherlands Enterprise Agency (RVO)

Ministry of Agriculture Uganda (MAAIF)

Sector Enablers

- FSD Uganda
- aBi Finance and Development
- Dutch Entrepreneurial Development Bank – FMO
- Bank of Uganda
- World Bank
- US Agency for International Development (USAID)

Other Development Actors

- One Acre Fund
- Technoserve
- SOLIDARIDAD

District Government Agencies

- Masaka DCA

Smallholder farmers

- (Individual and Groups)

Agri associations

- Uganda Agribusiness Association (UAA)
- Kayunga FLE SACCO
- Hortifresh

Off-takers

- Tropical Dynasty
- KK Fresh Produce
- Enimiro
- Local market traders / informal buyers

Input Providers

- Local agro dealers
- Balton Uganda
- Kickstart International
- PROTEEN Organic Inputs
- BioBloom Organic Fertilizer

Commercial Banks

- Centenary Bank
- Equity Bank
- DFCU Bank
- Stanbic Bank
- Vision Fund
- UGAFORDE

SACCOs

- Mpigi Kwagaliza Farmers SACCO,
- Nazigo Sacco

Digital Service Providers

- eMata
- Simbuka
- Pata Sente
- MTN MoMo
- Tugende
- GnuGrid Ichuli CRB

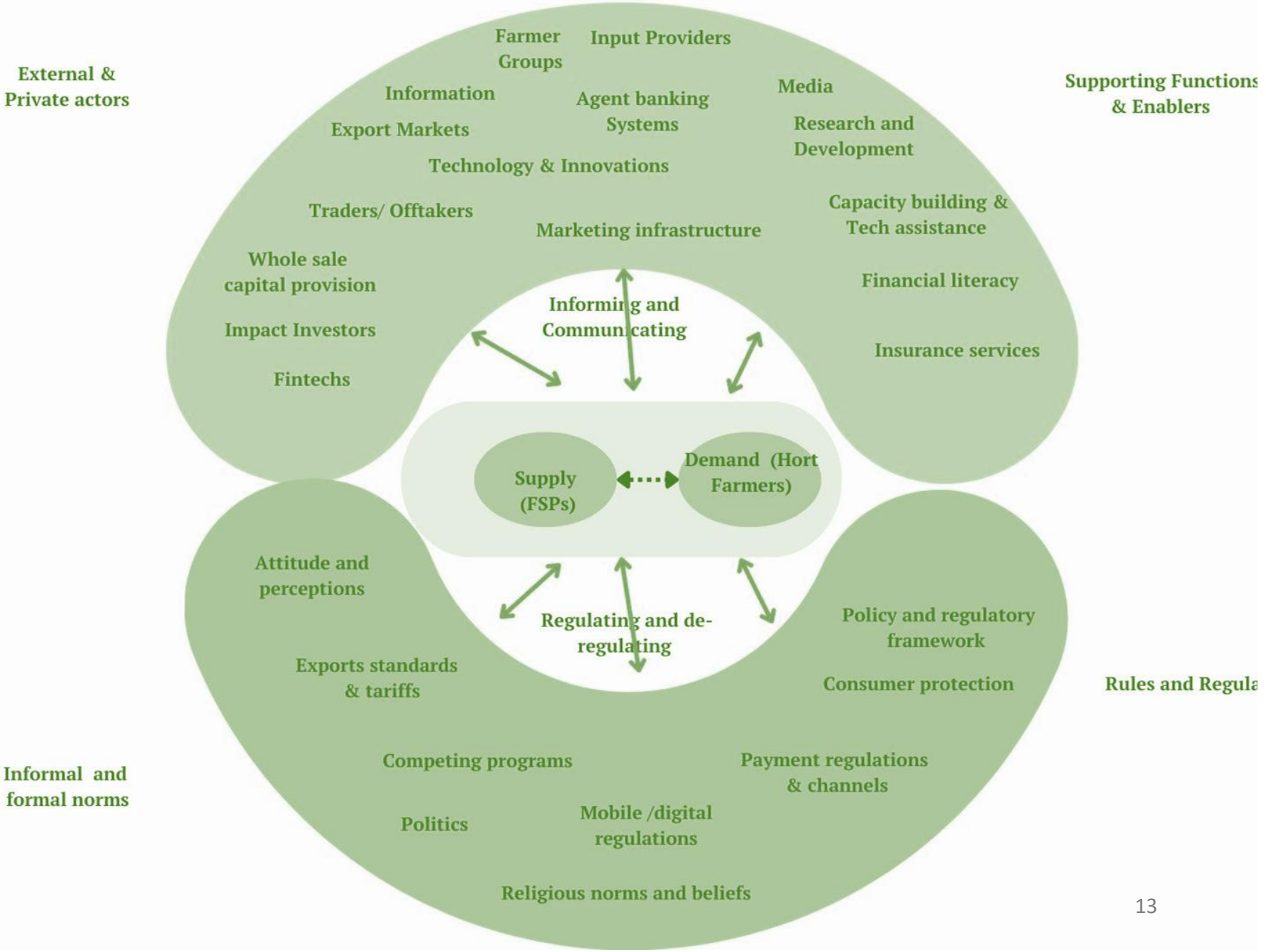
Money Lenders

Other Funders

- Pearl Capital
- Bid Capital

STAKEHOLDER MAPPING - ACCESS TO FINANCE SYSTEM ACTORS

- Based on the systems assessment exercise, a financial services market map has been developed to understand the various functions of the market system that can play a catalytic role in the financial market for smallholder farmers in Uganda.
- All the mentioned stakeholders/functions included at the right hand side are critical for the financial services market system to operate for agriculture growth for smallholder farmers, especially for women and youth. However, analysis explained in this document highlights a few of these that are critical to the PADEO objective of unlocking financial services to smallholder farmers in horticulture sector in Uganda.
- Furthermore, we explore the supporting functions, rules and norms presented in the next section to understand the various actors that are active in this system in Uganda and influence the agriculture financial services market system for smallholder farmers.



QUAD TEE

ACCESS TO FINANCE FOR HORTICULTURE SHFs:

- → OBSTACLES & CHALLENGES
- → ROOT CAUSE ANALYSIS
- → POTENTIAL ENABLERS

UNDERSTANDING OBSTACLES TO ACCESS TO FINANCE (1 of 6)

Smallholder Horticulture Farmers

From literature, Inclusive financial markets should allow smallholder access and make use of a full range of financial services. This presupposes that SHFs know their financial needs; have information on and understand the financial services being offered; are able to access, select, and use the services that meet their needs; and are protected against abusive practices by providers. At the same time, FSPs understand the characteristics and potential of smallholder farming clients, offer services that meet their needs, have viable business models that allow them to grow and innovate, and act responsibly toward all customer segments, competitors, and the environment. However, in reality, these may not be the case

Below are the key constraints identified through this study that prevent an efficient match between demand and supply of financial services, limiting access, use and quality of available services to smallholder horticulture farmers. Summary of Key characteristics include the following:

Demand-side barriers/ characteristics; From the demand side, the study observed **Low demand for formal financial services** horticulture SHFs still hold a strong perception that the formal financial services and providers are targeting more wealthier clients, and thus often intimidated by formal bank facilities that they may assume are not intended for them or by staff that may not treat them with respect. Field level research reported incidents of unfair treatment, and thus fueling further distrust and fear toward formal financial institutions. A financial relationship is based on trust, which is difficult to establish if clients perceive a wide gap between themselves and the provider. Lack of trust is also one of the factors limiting the demand for formal financial credit and other services beyond credit like savings. Key underlying causes for the observed misperceptions and knowledge gaps around the small holder position in the market persist range from **cultural and social factors** , **Lack of information on providers and services, Limited financial capabilities; to smallholder farmer capacities /uncertainties that additional capital will be used productively.**

Supply-side constraints; Many FSPs are addressing the particular needs of smallholder financing. More especially the lower tier FSPs (MFIs, SACCO & VSLA), who have specialised in serving the rural consumers (mainly SHFs) and as a consequence created working relationships with SHFs, gaining their trust and meeting some of their financial needs. By showing that SHFs are willing and able to pay for financial services, lower tier FSPs have demonstrated that inclusive financial services can be provided sustainably and commercially. Increasingly the big banks and impact Investors are venturing into the smallholder financial services space. Mobile network operators (MNOs) and FinTechs are increasingly involved in providing financial services to SHFs as technological innovations have also opened new opportunities to reduce costs and increase outreach. However constraints facing FSPs continue to impede a more adequate supply of financial services for the SHFs, including the following; **Actual risk of agriculture lending**; **Limited institutional capacity; Weak value proposition for SHFs, Costs of lending – high**, **underdeveloped delivery channels**, **Limited incentives to innovate, Lack of capital** among others

Supporting functions and rules and norms; Many constraints that appear to be either demand- or supply-side in nature usually have their roots in the supporting functions, rules, and norms that shape financial services markets. Therefore, supporting financial inclusion requires not only an understanding of the supply and demand exchange, but also an understanding of how this exchange is shaped by rules and supporting functions present in the market. Typical supporting functions in the Uganda financial services market include information services, skills and capacity-building services, coordination mechanisms, capital providers, market infrastructure and policy.

The following list highlights some of the constraints as well as opportunities linked to supporting functions found in the Ugandan financial services market: **Limited market information, Underdeveloped skills and capacity development services. Weak or inefficient industry-level coordination**. **Restrictive, and unresponsive regulatory frameworks, Weak supervisory capacity, Political intervention by the government**.

MAPPING OF OBSTACLES AND OPPORTUNITIES (2 of 6)

Following in depth interviews with various stakeholders in the system, various obstacles and challenges influencing access to finance for SHFs in the horticulture sector in Uganda were identified. These were broadly categorized into various categories depending on the financial, social, regulatory, skills based, information gaps, business model issues as well as market or productivity related. The engagements also help identify some opportunities, root causes, enablers and potential interventions. These were documented in the KUMU.io. Some of the obstacles are listed below.

	OBSTACLES	OPPORTUNITIES
SOCIAL	➢ Diversion of funds (Farmer) ➢ Gender (women less aware of products, lower uptake) (Farmer) ➢ Farmer's low tolerance to change (Farmer) ➢ Proximity, trust, and existing relationship (Farmer) ➢ Lack of loyalty between farmers and aggregators (Market)	➢ Financial education/ literacy ➢ Interventions at policy and industry level to enhance enforcement of contracts - bridge trust and build loyalty ➢ Digitization as tool to reduce human interaction ➢ Organize farmers into solid economically viable groups or cooperatives - trust and loyalty
FINANCIAL	➢ High cost of production inputs (Farmer) ➢ High Direct cost of credit (interest rate, negotiation fee) (Farmer) ➢ Indirect cost of credit (transaction costs) (Farmer) ➢ Low value of assets owned by farmers - as collateral (Farmer) ➢ Lack of capital or funds for on-lending, especially for rural financiers (FSP) ➢ Alternative priorities for loan officers (FSP) ➢ Farmer ability to pay (fluctuating) (farmer) ➢ Farmer repayment capacity (fluctuating) (FSP) ➢ Actual risk of agriculture, particularly with farmers (FSP, Farmer) ➢ Agricultural risk mitigation mechanisms (e.g. Insurance) (FSP, Farmer)	➢ Climate smart financing ➢ External assistance in strategic grants ➢ Risk mitigation facilities such as credit guarantees. ➢ Technical assistance funds to support FSP's reach out to farmers ➢ Insurance - capitalization, risk mitigation for agric risk, ➢ Research and data analytics to ➢ Digitization as tool to optimise cost of lending ➢ Organize farmers into solid economically viable groups or cooperatives - manage cost per unit
MARKET ACCESS	➢ Perishability of horticulture products (Farmer, Market) ➢ Marketability and Competitiveness of horticulture products (Market)	➢ Unmet demand in key markets especially Europe ➢ Infrastructure funding e.g. cold storage facilities ➢ Value addition
PRODUCTIVITY	➢ Produce quantity reliability & consistency (Farmer, Market) ➢ Low level of investment in sector (Farmer, FSP, Market)	➢ Organize farmers into solid economically viable groups or cooperatives - including advocacy at Policy level . Interventions on improving quality standards

MAPPING OF OBSTACLES AND OPPORTUNITIES (3 of 6)

	OBSTACLES	OPPORTUNITIES
INFORMATION SKILLS	➢ Inadequate farmer knowledge in agronomy (Farmer) ➢ Credit scoring mechanisms (Farmer) ➢ Awareness of marketing channels (Farmer) ➢ Awareness and exposure to financial services (Farmer) ➢ Digital awareness and literacy (Farmer) ➢ Farmers records to support lending decisions (Farmer) ➢ Ability to demand and negotiate appropriate financing options (Farmer) ➢ Tech skills/capacity for agricultural lending (FSP) ➢ Design of agrifinance products (FSP) ➢ Business processes engineering (FSP) ➢ Agrifinance product availability (FSP) ➢ Segmentation of farmers (value chain, size) (FSP)	➢ Tailor made technical assistance ○ Product design and development ○ Supporting FSP's build credit scoring capabilities ○ Marketing and delivery of ag-finance products to farmers ➢ Strategic alliances with other actors supporting skill development at FSP and farmer levels ➢ Incubation/mentoring spaces for SHFs and other players
REGULATORY	➢ Swamps/wetland conversion to agricultural land (Farmer) ➢ Inadequate availability of formal identification documents -esp youth and women (Farmer) ➢ Low client/Farmer protection (Farmer) -leading to exploitation ➢ Existence of competing public and development programs (FSP) ➢ Quality of production inputs (Input Provider)	➢ Advocacy initiatives between public and development sector
BUSINESS CASE/MODEL	➢ Inadequate or over- reliance on external support (risk share, TA, etc) (FSP) ➢ Low trust from FSP's to farmers(FSP) ➢ Number of farmers engaged in horticulture production (FSP) ➢ Level of aggregation for horticulture farmers (FSP) ➢ Costs of lending to farmers (FSP) ➢ Lack of or poor farmer credit score (Farmer, FSP) ➢ Many FSP's not oriented to serving farmers (FSP) ➢ Low demand for formal credit by farmers (FSP) ➢ Digital technology adoption by FSP's (FSP, Farmer) ➢ Non-financial services at FSP (embedded services) (FSP, Market) ➢ Produce quality and hygiene standards (FSP, Market)	➢ Huge captive market for FSP's and other actors ➢ Formalization of rural providers like VSLAs and SACCOs ➢ Exploit digital opportunities and support emerging Fintechs ➢ Development Impact

Click below to

Full list of elements - obstacles, root causes, connections in Kumu Template

Kumu.io Project
https://kumu.io/pkweheria/access-to-finance-for-horticulture

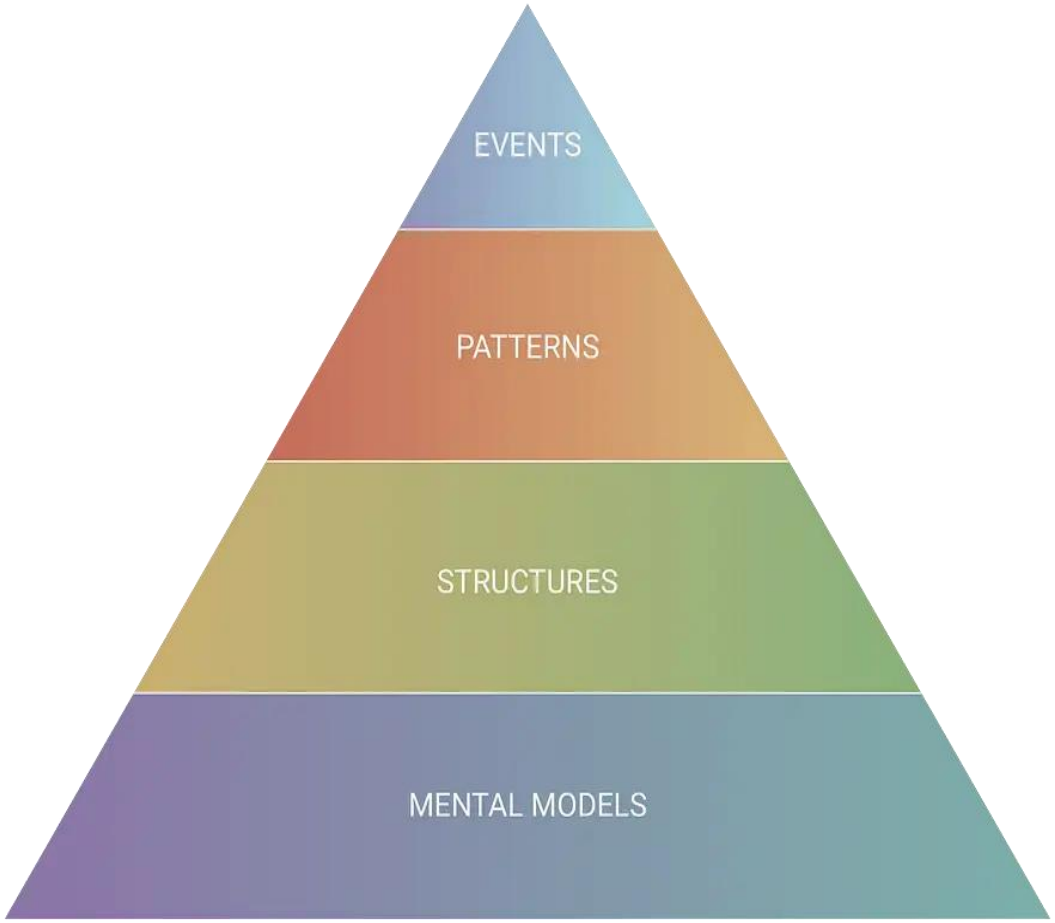
ROOT CAUSE ANALYSIS (4 of 6)

Addressing only the symptoms of a problem often results in that problem recurring. Addressing deeper, root causes can create more meaningful, long-term impact. The "pyramid" or "iceberg" model (adapted from Metabolic system thinking guidelines) describes this conceptually. Mental models, or paradigms, are the foundation of our system. We try to codify these mental models in our economic, social, political, or physical structures. These structures give rise to patterns of behavior. In turn, these patterns produce events - positive or negative impacts

Shifting from a linear thinking approach (connection between cause and effect is obvious and easy to trace) to a systems thinking approach (where relationship between cause and effect is indirect and not obvious). The idea is to optimize the the system, fo our case financial system for smallholder horticulture farmers, by improving relationships between the parts, and ultimately avoid quick fixes which have unintended consequences (such as burden shifting or increasing problem on long term). In addition, a structure for a few key coordinated changes in the access to finance system would be recommended that can produce systems change.

There is the "four levels of thinking" model, which illustrates these interrelationships. The model shows the hierarchical relationship between four related, but different levels within a system: events (which are impacts or symptoms), patterns (behaviours), systemic structures, and mental models (paradigms) (Maani and Cavana, 2007).

Root causes to obstacles were broken down into events, patterns, structures and mental models.



Adopted from - Metabolic system thinking guidelines.

ROOT CAUSES OF KEY OBSTACLES - SMALLHOLDER ACCESS TO FINANCE (5 of 6)

EVENT or IMPACT	PATTERN	STRUCTURE	MENTAL MODEL
-Low level investment in the sector -Low levels of productivity -Poor produce quantity reliability & consistency	- Inadequate financing to horticulture sub sector -Over reliance on external enablers such as government and donors - High interest rates -High levels of post harvest losses & perishability	-Inadequate agricultural risk mitigation mechanisms -Over reliance on external enablers such as government and donors -limited marketing & financial infrastructure	-Fear of climate changes impacting agri venture negatively -Climate change risk- due to changing weather patterns
-Lack of agrifinance products - tailored to farmers (in horticulture) -Non-customised product marketing targeting farmers	-FSP preference for certain type of value chains (organized like dairy) -Agrifinance loan requirements (stringent) -Leveraging on off takers and other risk mitigating mechanisms to lend to SHFs	-Restrictive credit risk policy requirements -Information asymmetry - SHF credit worthiness & potential -Absence of acceptable collateral by farmers -Underdeveloped / misaligned credit scoring mechanisms for agrifinance	-Limited willingness to invest in smallholder research to support lending decisions -Perceived high risk of agricultural lending -Perceived risk of farmers by FSP -Perceived high cost of inputs. -Farmers inability to service relatively 'high' horticulture investment loans
-Low bankability of SHFs (very informal - little traceability -Low demand for formal credit -Low financing for horticulture sub sector	-Informal credit coping mechanism -Alternative form of financial service - ie selling harvest rights -Lack of financial literacy	-Limited access to finance by SHFs to boost horticulture production. -Informal credit coping mechanism	-Farmers lack of trust in finance service providers - Social and cultural perception/belief around formal credit
-Farmer inability to negotiate and demand appropriate financing options	- Continued low financing for horticulture sub sector -Limited incentives to innovate around models for smallholder financing	-Lack of sustainable business model (Existing banking facilities inaccessible to farmers) -Products not accessible to smallholder farmers	- Perceived high level of poverty among farmers - Low self esteem - farmers - Social limitations
-Savings and other basic financial service lacking	-High cost of capital, - Market imbalance - with high demand for capital vs available supply	-Expensive loan capital for onlending (to SACCOs) -Policy and regulatory limitations	-Low savings culture, poor deposit mobilization by rural FSP's

ROOT CAUSES OF KEY OBSTACLES - SMALLHOLDER ACCESS TO FINANCE (6 of 6)

EVENT or IMPACT	PATTERN	STRUCTURE	MENTAL MODEL
-Horticulture produce quality and hygiene standards -Digital Infrastructure	Low access to finance (A2F) demand side (small-holder's) interventions, most effort is on the supply side	-Marketing infrastructure/system for horticulture products -Low value horticulture produce -limited access to additional working capital	-SHF tolerance to change (preference for local ways or crops)
-Poor design of risk sharing and TA facilities -Inappropriate agrifinance product designed for farmers	-Lack of strategic setup of external support facilities such as technical assistance (TA) and risk share -Lack of diverse capacities by FSP's to serve the different farmer	-Low value proposition -Short-term planning for horizons by enablers -Govt/ development actors	-Low trust of farmers by Financial Service Providers (FSP's) -Short-term planning for horizons at farmer level -Exploitation and profit maximization paradigm
-Low utilization of agrifinance initiatives e.g., guarantee facilities	-Competing development versus government programs - FSP's signing up to numerous programs - some not value adding - Lots of financial inclusion programs	-Nature of horticulture value chains encourages individualism -Govt programs limiting sustainable aggregation of farmers in singular models	-Short term nature of development and government programs - as projects - rather than long term interventions
- Low financing for horticulture	- Lack of collateral -Lack of identification documents - youth, women	-Spousal consent for borrowing	-Cultural practices and social norms (forgeries and briberies i.e. Local Chairman letters)

SUMMARY OBSTACLES, ENABLERS AND OPPORTUNITIES

Summary -Financial sector and access to Agriculture finance:

Commercial banks, the major lenders in the country; Although precise statistics are not readily available, as a group commercial banks represent about 92% of the total private sector credit (World bank report -2019). The rest is financed by credit institutions and MDIs, including SACCO's. However commercial banks prefer safer and more liquid assets, when it comes to agriculture lending credit institutions and MDIs are the most active in lending to agriculture production, representing about 16%, leaving commercial banks with a sizable share of 84%.

Tier 4 financial institutions collectively have extensive rural coverage and are potentially significant delivery channels for agriculture, mainly represented by SACCOs, and possess much wider rural outreach and acceptance than that of formal institutions. They already deliver critical financial services to the smallholder households, while they often benefit from technical services/support in agriculture finance, they have capital shortages.

Commercial banks lending in agriculture- supported by risk management mechanisms; These banks notably are lending to well organised value chains, mostly coffee, tea, maize, dairy and oil seeds. E.g., Centenary bank, Equity and Stanbic lend to coffee farmer organisations that aggregate and sell to bigger off takers. The off takers often act as smallholder appraisal points and as well as guarantors of payments. Lending products include input loans, production loans, and marketing and asset loans, however most banks tend to focus on larger loans. The lending rates usually range from (20-28%). Other risk mitigating mechanisms include credit guarantee schemes.

Borrowing money is common, but mainly from informal lenders; According for FSDU (2018), 46% of Ugandans that had reported borrowing money/ obtaining credit -12 months prior to the survey, indicated that 90% of the borrowers reported using informal credit include (VSLAs, money lenders, credit in form of goods or inputs, friends & family) only 10% borrowed from commercial banks; 3% from SACCOS and the rest from microfinance institutions.

Traders, off takers and horticulture agribusiness companies respond to smallholder financing requirements; For example, traders/brokers provide seasonal/emergency credit to horticulture farmers within their communities, in confidence that the horticulture produce is sold to them. Farmers usually rely on such arrangements due to ease of the transaction and other embedded benefits, such as market and access to quality inputs. Although precise data may not available it's likely that such credit far exceeds that from formal financial institutions as observed from the field research

Small holder households have limited access to financial services; According to the consultant group to assist the poor (CGAP) national survey 2016) only 10% of smallholder farmers in Uganda have bank accounts, but 73% have used mobile money. To buy inputs, 93% pay cash immediately, while 7% have access to credit that allows later payment. About 80% of them sell crops for income and all of them are paid in cash when they sell.

KEY ENABLERS NOTED INCLUDE

INFRASTRUCTURE

- Digital aggregation and marketing platforms *(Market, Farmer)*
- Level of penetration digital payments *(Market)*
- Digital infrastructure *(FSP)*
- Incubation/mentoring spaces for SHFs and other players *(FSP)*

INFORMATION SKILLS

- Data/research support for lending decisions
- Farmer traceability system (financial & activities) *(Market)*

MARKET ACCESS

- Value addition on horticulture produce *(Market)*
- Access to high value produce markets

FINANCIAL

- Access to basic financial services (ie. savings) *(FSP, Farmer)*
- Rural financing mechanisms (i.e., SACCOs) *(Farmer)*

BUSINESS CASE/ MODEL

- Enabling ecosystem players for FSP's (i.e., offtakers) *(FSP)*
- Life span for horticulture sector development plans (*FSP)*
- Agriculture lending strategy for FSP's *(FSP)*
- Market linkages and facilitation (*FSP, Market, Farmer)*
- Market led production (*Market, Farmer)*

QUAD TEE

DEEPENING OUR UNDERSTANDING OF ACCESS TO FINANCE FOR HORTICULTURE FARMERS SYSTEMS MAPPING

- Feedback loops
- Sample Maps and Presentations
- Intervention Ideas and Recommendations
- Sample metrics from systems mapping tool: Kumu

DEEPENING OUR UNDERSTANDING ACCESS TO FINANCE - FEEDBACK LOOPS

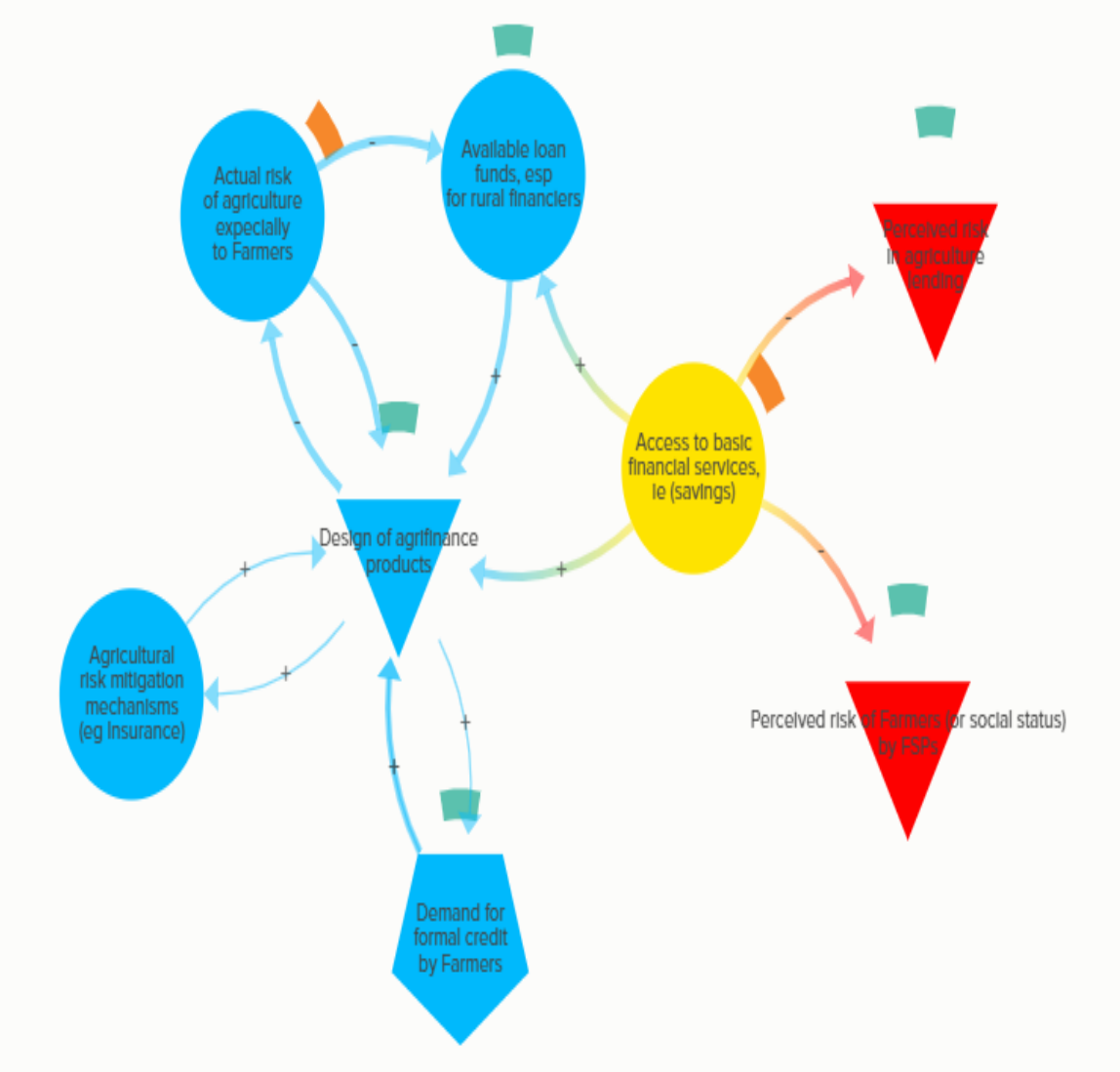
A critical part of systems thinking is understanding and acting on feedback loops - for example by breaking out of reinforcing feedback loops, like poverty traps, which keep us locked into undesirable outcomes. On the other hand, reinforcing feedback loops can also be leveraged to create systemic change from smaller coordinated actions. Looking for feedback loops can help us identify how to create significant impact with minimal effort, or help us flag risk areas that could result in unintended consequences

Design of customised agrifinance products, for example, can trigger a reinforcing virtuous cycle- when farmers realise that bank "X" is serving great financial products that speak to their exact needs and solve the equation for their agribusinesses, these will have a positive influence on demand for formal credit. This can trigger even other banks to innovate and provide even more tailor made products. Increased demand will consequently lead to increased levels of investment in design of tailored agrifinance products for farmers and provider level.

Design of tailor made products for smallholder farmers will also have a positive influence in the financial services market by reducing the actual risk of agriculture especially to farm. In return, this reduces the uncertainties on available lending capital especially for the rural financiers, definitely having a positive reinforcing for further improvements in design of agrifinance products.

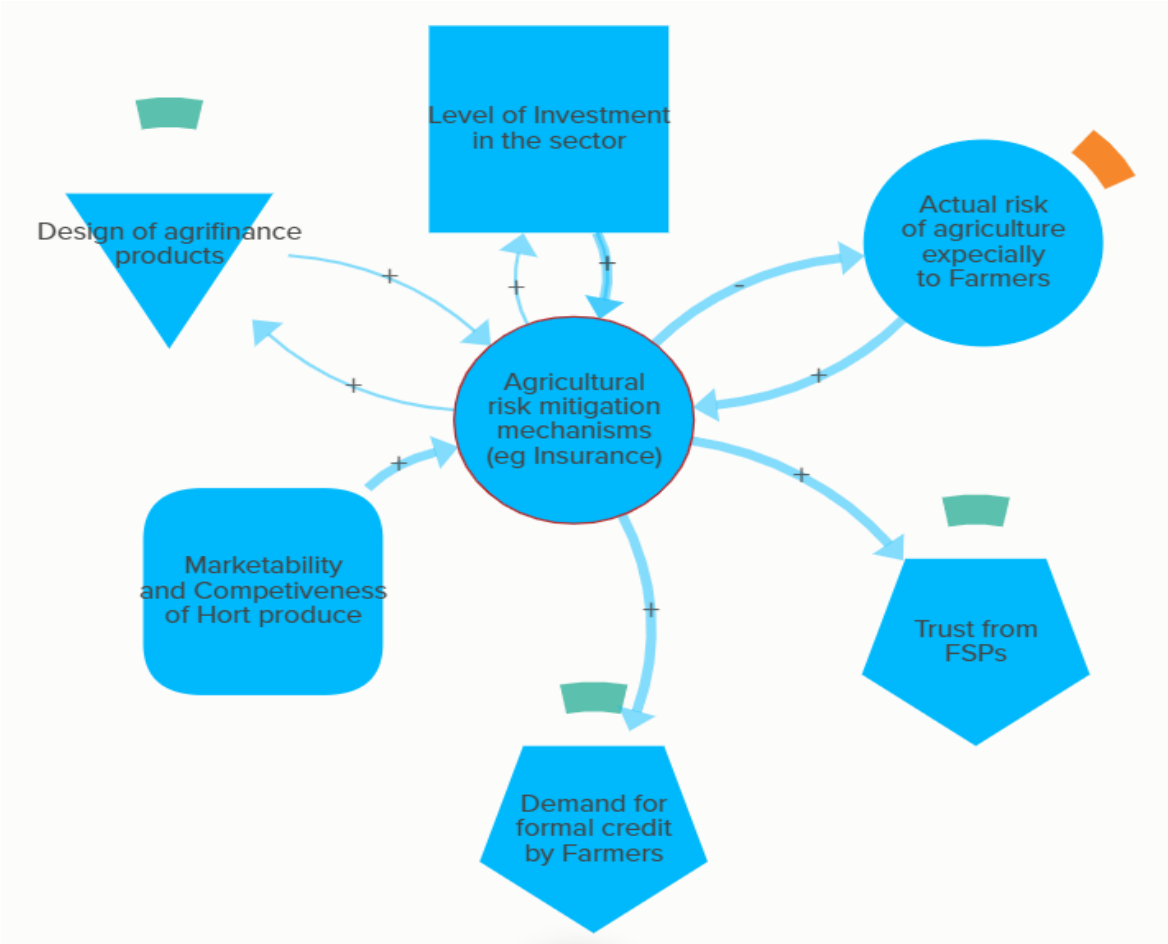
Adoption of digital financing solutions, can attract FSPs costs of lending to small holder farmers, because formal financial institutions cost their credit products depending on the risks involved and also the much it takes to deliver the credit to farmers. Digital technology is one great way of reducing these costs as evidenced by the feedback loop. More innovations lead to less costly financing and vice versa. External support also cost shares risk and increasing the support to financial institutions directly leads to the less costly financial products. See cost of lending map, next page

Design of customized agrifinance products

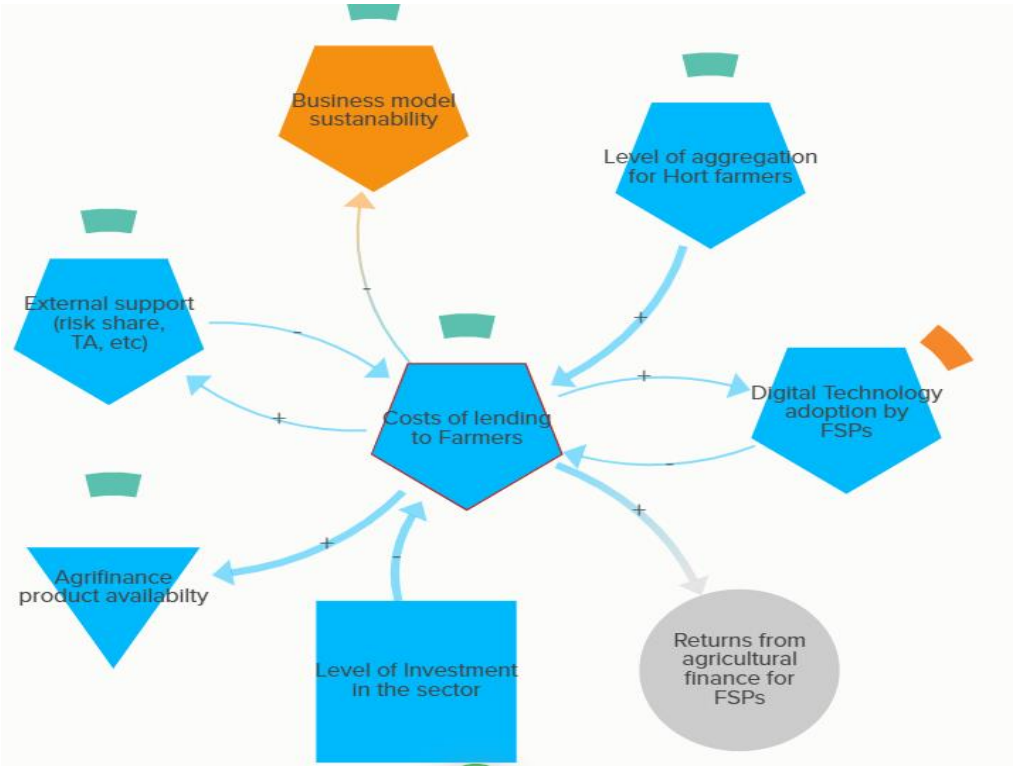


DEEPENING OUR UNDERSTANDING ACCESS TO FINANCE - FEEDBACK LOOPS

Smallholder farmers and financiers in the agricultural sector, encounter risks, whether real or merely perceived, resulting in serious averseness to increasing investments in horticulture sub sector. Consequently many farmers have been denied funding on the pretext that agriculture is too risky. Scaling up agricultural risk mitigating mechanisms will reduce the actual risk of agricultural financing, and will reinforcing positive influence on design of agrifinance products and the level of investment in the financial and the horticultural production in Uganda. Having risk mitigating mechanisms will likely yield high payoffs in terms of smallholder welfare and risk management for farmers and creditors, and will thus enable overall gains in horticulture productivity and commercialization.

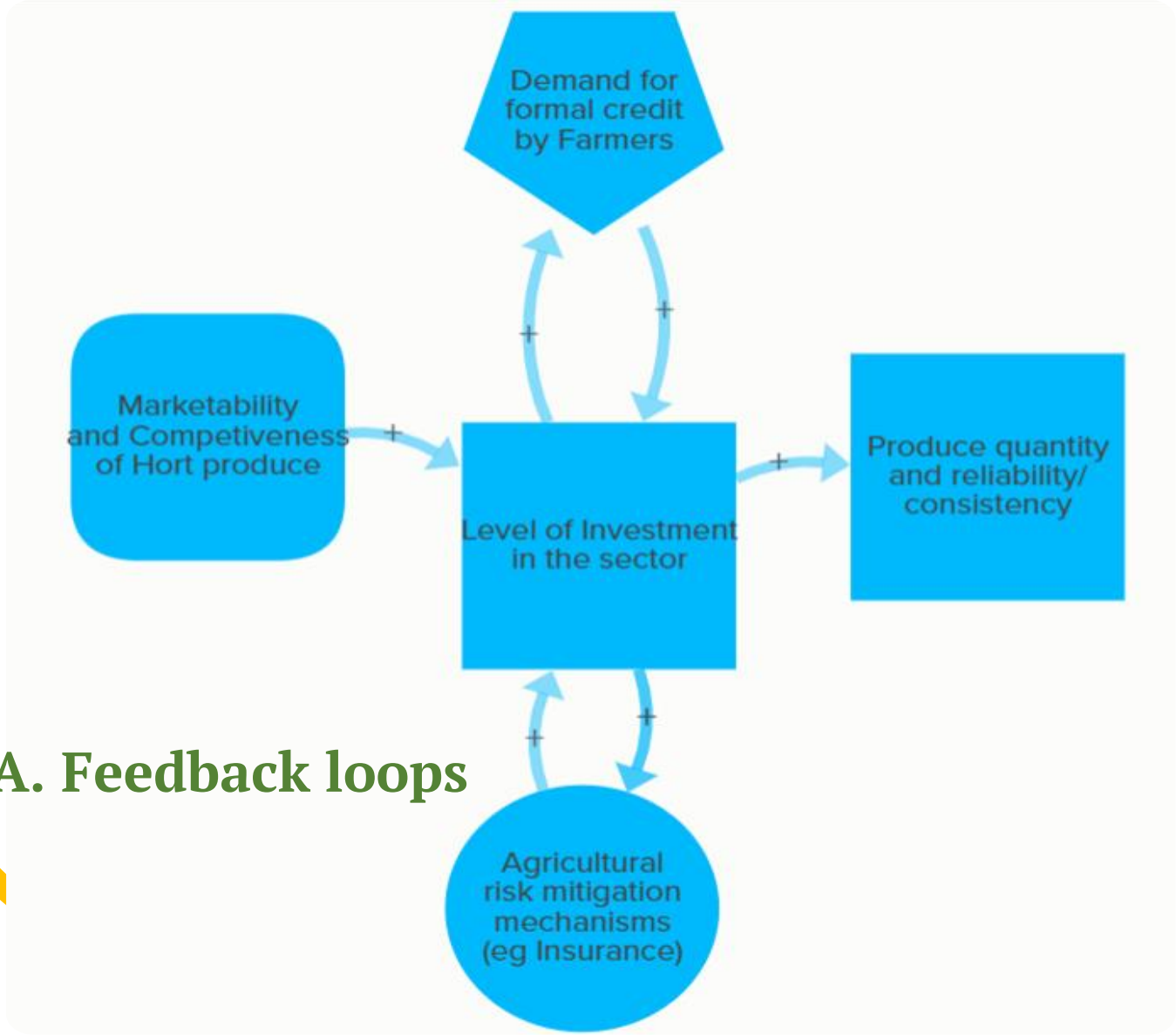


Cost of Lending



Formal financial institutions cost their credit products depending on the risks involved and also the cost it takes to deliver the credit to farmers. Digital technology and external risk support are is some of the ways to smallholder lending costs as evidenced by the feedback loops above. More innovations lead to less costly financing and vice versa. External support also cost shares risk and increasing the support to financial institutions directly leads to the less costly financial products.

DEEPENING OUR UNDERSTANDING ACCESS TO FINANCE - FEEDBACK LOOPS



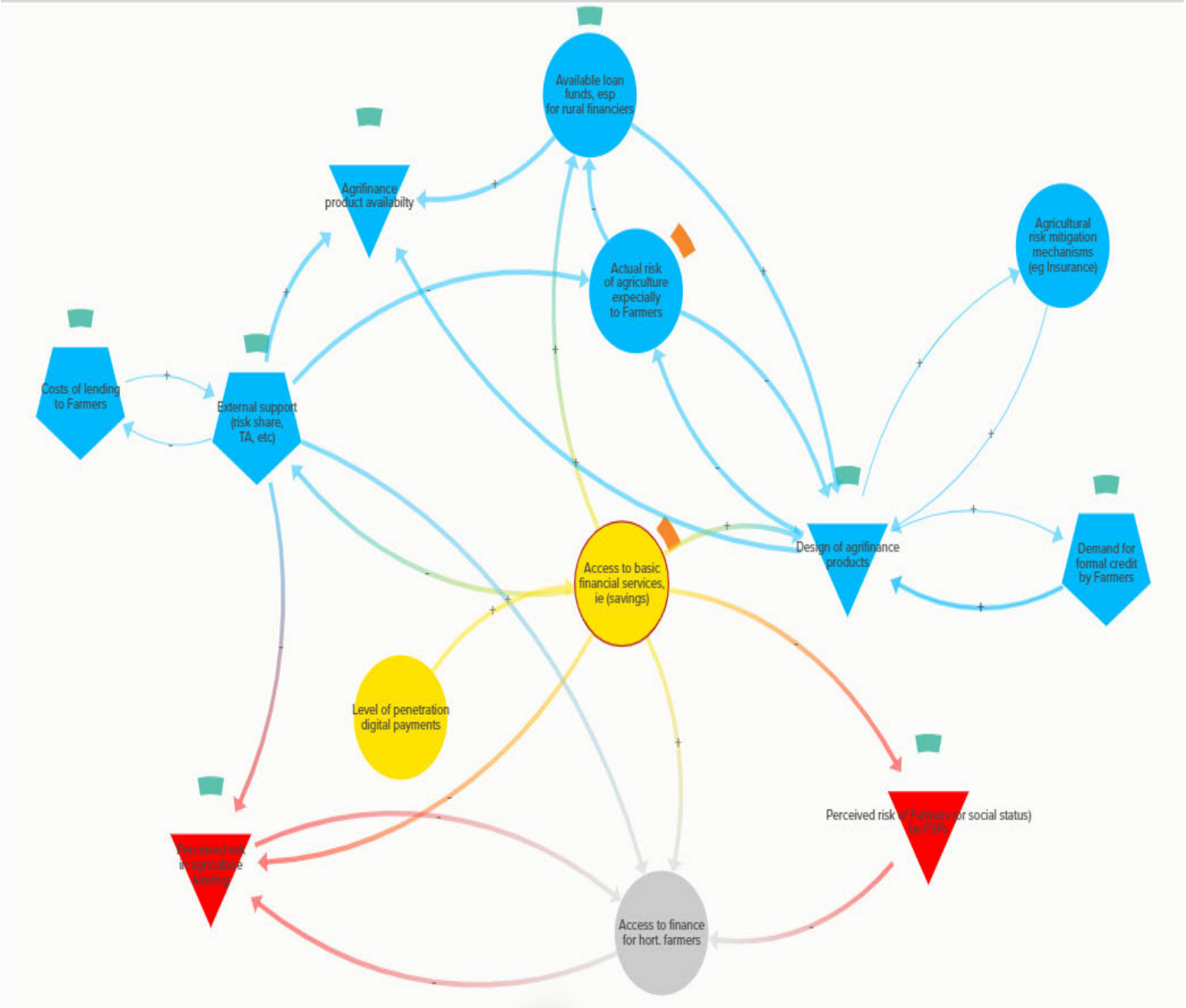
A. Feedback loops

The majority of SHFs households in Uganda derive much of their livelihood from agriculture. However, like we seen in this report, they face challenges related to declining soil fertility and stagnating crop yields, low quality inputs , poor market access, etc. and thus making the right investments a key element in the systems map.

Loop A When different players in the sector choose to invest highly from policy to infrastructure and even farmer production accessories like irrigation Kits, produce quantity improves. There is more supply contracts in the market honored and the competing edge increases for the produce. This leads to more investments even in other supporting functions which calls for more loan applications. Risk is better managed with availability of funds, insurance premiums can be financed, diversification can be achieved for the same season.

With increasing options to manage risks in the horticulture sector comes with increases in level of investments and decreasing occurrences for actual risk. The improvements in risk management can cause the banks to design better financial products and demand for these products will go up once the farmer starts to feel secure at production level.

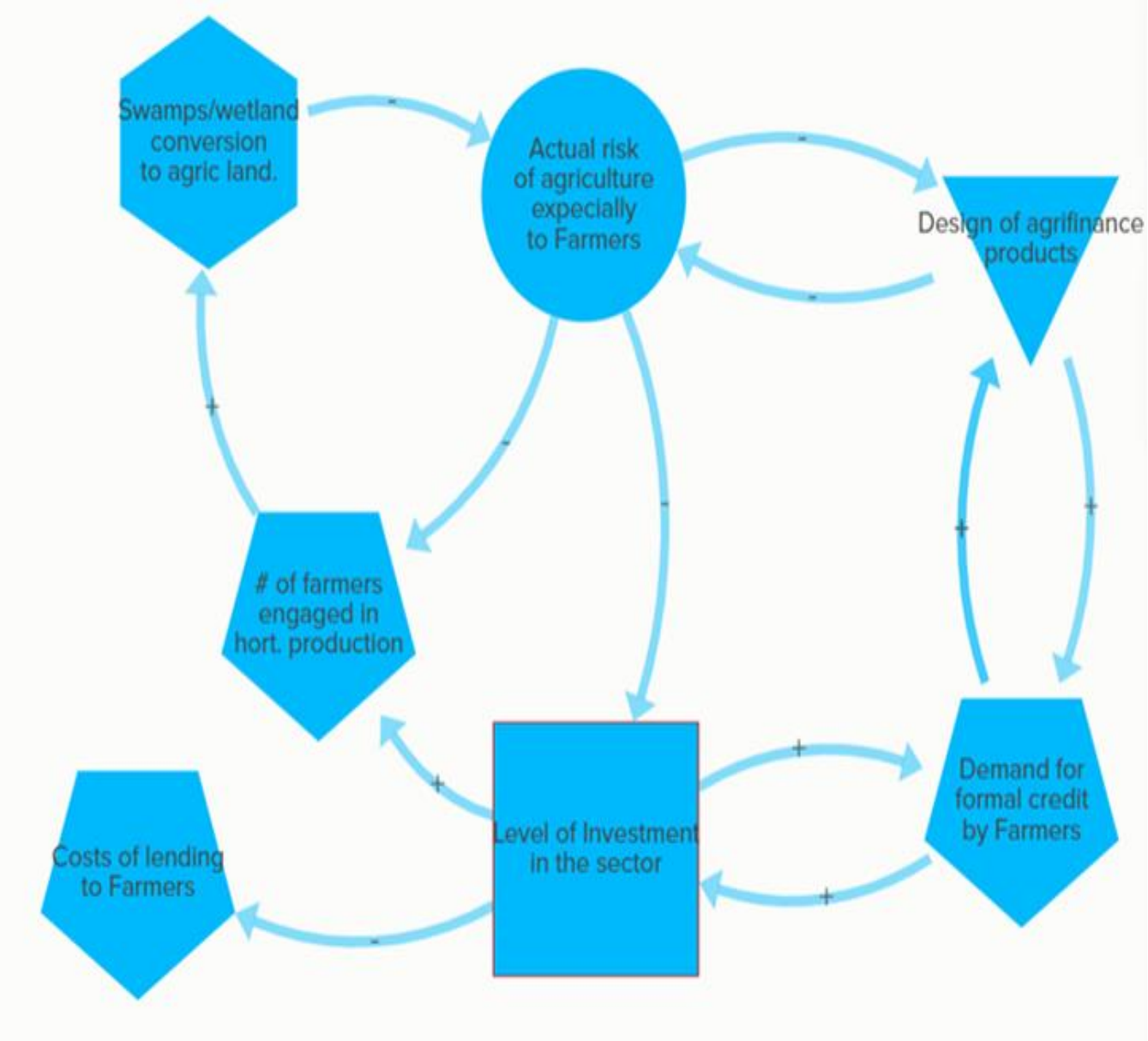
DEEPENING OUR UNDERSTANDING ACCESS TO FINANCE - FEEDBACK LOOPS



Access to basic financial services ie Savings- From the system map savings are observed as essential in financial access to value chain actors, especially for smallholder farmers. On the one hand, it allows farmers to anticipate loan repayment, especially for voluntary term deposits. When some unlikely event happens, which may disturb the loan repayment schedule, farmers can use part of their savings to meet their commitments. Savings are also an option for reducing collateral challenges and an opportunity for farmers to show how they are performing in their business and thus allow financial institutions to have an idea on related cash flows. On the other hand, savings and other capitalization strategies are critical to reduce the need for external finance. Savings also appear to be a key option to mitigate perceived defaulting risk, and therefore financial institutions encourage savings while paying back loans. More importantly a clear savings plan helps to increase farmers' own resources that can be invested to expand value chain activities. Therefore, it would be of importance for future programs encouraging farmers to save in different ways, but typically with financial institutions.

External support comes in to play an important role of enabling the environment with strategic & patient technical assistance, cost share of risk and funding of research which might not be at the core roles of the farmers, traders and financiers.

DEEPENING OUR UNDERSTANDING ACCESS TO FINANCE - FEEDBACK LOOPS



Most Horticultural production in Uganda is rain fed and happens around swamps. Increasing the number of farmers involved in the sector threatens the existence of the wetlands.

To remedy this effect, more investments even at farm level to scale in irrigation, high yielding varieties that utilise smaller farmland and any other farm investments will reduce the occurrences of actual risks to the farmers in the sector.

This gives financiers confidence to also invest in developing financial products, marketing them to the farmers which directly feeds into the demand and consumption of the products, decreasing the cost of lending due to farmer numbers and increasing repayment ability.

External support comes in to play an important role of enabling environment with soft technical assistance, cost share of risk and funding of research which might not be at the core roles of the farmers, traders and financiers.

DEEPENING OUR UNDERSTANDING ACCESS T0 FINANCE USING KUMU METRICS

We utilized the Kumu system and template which allows for evaluating some simple metrics on elements in the systems map, which give us an indication of how critical different elements are. For our purpose, the metrics employed included, closeness, out degree, in degree and betweenness. Below are the top five elements in each of the different metric analysis.

Closeness	Out-degree	In-degree	Betweenness
Actual risk of agriculture	Actual risk of agriculture	Agrifinance product availability	Demand for formal credit
Level of investment in the sector	Level of investment in the sector	Demand for formal credit	Level of investment in the sector
Agric. mitigation mechanisms	Cost of lending to SHFs	Produce quantity and reliability	Design of agrifinance products
Design of agrifinance products	Agricultural risk mitigation mechanisms	Design of agrifinance products	Agrifinance product availability
Demand for formal credit	Design of agrifinance products	Level of investment in the sector	Produce quantity and reliability

- **In-degree** (direct dependency/influencers). In general, elements with high indegree are the leaders, looked to by others as a source of advice, expertise, or information. Agrifinance product availability; Demand for formal credit; Produce quantity and reliability; Design of agrifinance products; Level of investment in the sector are highly dependent on many variables. For example, the level of investment in the sector is driven by business model sustainability, demand for formal credit, number of farmers engaged in hort. Production, horticulture produce quality, etc.
- **Out-degree** (direct driver) In general, elements with high outdegree can reach a high number of elements and spark the flow of information across a network; these include, actual risk of agriculture; level of investment; cost of lending to farmers, agriculture risk mitigations and design of agrifinance products are the biggest influencing factors
- **Closeness** (Spreaders) in general, elements with high closeness can spread information to the rest of the network most easily and usually have high visibility into what is happening across the network. They can also be potential single points of failure. Actual risk of agriculture; Level of investment in the sector; Agric. mitigation mechanisms; design of agrifinance products and demand for formal credit, i.e., if actual risk of agriculture is not addressed and appropriate risk mitigants put in place efforts of scaling access to finance may be in vain
- **Betweenness** (information control) In general, elements with high betweenness have more control over the flow of information and act as key bridges within the network. They can also be potential single points of failure. Demand for formal credit; Level of investment in the sector; Design of agrifinance products; Agrifinance product availability; produce quantity and reliability. For example, demand for formal credit and level of investment have lots of indirect connections, therefore , interventions solely focusing on increasing demand for formal credit without addressing underlying issues could result in failure.

Elements ranked highest in all metrics are key elements that occur in dominant feedback loops. These are also strong leverage points in the system as they allow for creating more systemic change by affecting a lot of elements directly or indirectly in the system. Includes 1) actual risk of agriculture, 2) level of investment, 3) agriculture risk mechanisms, 4) demand for formal credit, 5 agrifinance product availability, 6 design of agrifinance products and 7) Horticulture produce and reliability.

See Kumu or excel for access to full list of obstacles and root causes and metrics.

DETERMINING AREAS/POINTS OF INTERVENTIONS

Event/existing negative state (1)	Underlying causes (2)	Leverage point/ Services / enabling environment (3)	Weaknesses (speaking to (3)	Proposed interventions (What and How)
Inappropriate agrifinance products & low availability for horticultural farmers	Misperceptions and knowledge gaps around SHF's position in the market; Collateral Challenges, Irregular Payment Capacities by farmers. Smallholder profitability dependent on factors beyond their control, i.e., prices, Systemic risks arising from climatic conditions and fluctuating cash flows ; bad past experiences; poorly performing agricultural portfolios. Farmers inability to service relatively 'high' horticulture investment loan. Actual risk related to agri-lending. FSP preference to other value chains. Scatteredness, High transaction costs, Absence of adequate risk mitigating mechanisms. Prone to government interference. Fluctuating cash flows for horticultural farmers	Flexible agrifinance products devt. and roll out; Agricultural finance solutions for FSPs Skills enhancement at FSP Market research & feasibility studies for lending decisions Agri-risk mitigation / agriinsurance Value chain Partnerships SHF access to basic financial services (savings)	Limited range of agrifinance product offerings; limited lending in Horticulture value chain. Little or no incentive to invest in human resource & strategy. Limited incentives to innovate. Fewer instruments to manage risk, Low utilisation of available agri-insurance products requirements; FSPs prioritising other more credit sectors. High non-performing agricultural loans; Prone to adverse selection by FSPs (where bad debtors are selected at the start). Limited or Lack of capital for on lending.	**Intervention #1: Tailored agrifinance products** introduced and piloted for SHFs to demonstrate their commercial viability - Build FSP capacity & skills to develop products - Leveraging value chain partnerships - especially with actors with farmer touch points and access to markets - Ensure mitigation of various agri-risks including adoption of agriculture risk insurance - Factor in flexibility in terms as well as roll out - Build in incentives for appropriate product design - Backed by market research on a regular basis - Intervention must incorporate to-market-support for developed products to SHFs. Ensure design of the activities to incorporate gender norms and limitation of women and youth in marketing campaign activities - This could be one area with Dutch Value Add - through Dutch entities like RABO with requisite skill sets **Intervention #2: Sector Research Support** [Mapping financial service access points to help policymakers and financial institutions identify under-served areas, and risks in the horticulture value chain. (this a cross cutting intervention)]

DETERMINING AREAS/POINTS OF INTERVENTIONS

Event/existing negative state (1)

Demand for formal credit by SHFs low (inadequate/ imperfect lending market for SHFs).

Underlying causes (2)

High default risk - largely due to the actual agricultural risk.

Low farmer repayment and financial capacity; deficient collateral
Information asymmetry - SHF credit worthiness & potential.

Risk along the horticulture value chain due low quality and uncertain supply.

Little potential for scale.

Cultural and social factors, i.e., the SHF's fear and distrust of formal FSPs, which hinders their uptake of services. Small holder risk aversion behaviours.

Lack of last mile access
Informal credit coping mechanism & alternative form of financial service.

Smallholder inability to negotiate and demand appropriate financing options. Some SHFs cannot use additional capital productively.

Low incentive to borrow.

Heterogeneity of horticulture SHFs.

Leverage point/ Services / enabling environment (3)

Buying down risk to serve horticulture farmers.

Agri-risk mitigating mechanisms.

Marketing and delivery channels targeting SHFs.

Lowered transaction time.

Strategize savings culture.

Non -financial services i.e., Financial literacy.

Appropriate financial services for SHFs.

Weaknesses (speaking to (3)

Credit guarantee schemes (CGS) are prone to adverse selection by FSPs (where bad debtors are selected at the start).

Inadequate involvement of key credit stakeholders at FSPs.

Moral hazard among borrowers (strategic defaults) where they know of the risk share.

High transactional costs and FSP inflexibility limiting scale.

Competing development versus government programs
Non customised marketing materials.

Weak SHF customer orientation
Little incentive to investing in smallholder finance.

Focus on group lending methodologies.

Design of the current formal credit products are not in alignment with small holder needs.

Proposed interventions (What and How)

Intervention 3: Design innovative credit risk mitigation mechanisms that incentivize lenders to target horticulture segment with higher systemic risk.

- Involve key credit stakeholders at design.
- Factor in time for incubation and rollout.
- Medium to long term (7-10 yr) programs.
- Build in milestone payments as incentives.

Intervention #4: Supply side Incentive based payments to expand & sustain smallholder financing for improved market functioning., more especially for women and youth horticulture farmers.

- Factor in diverse capacity of FSPs.

Intervention #5: Promote **non-financial services and market access linkages, bundled with financial** services such as credit, savings and insurance.

- Include financial literacy and business development services
- Enhance market linkages.
- Aggregation of farmers into viable economic groups.

DETERMINING AREAS/POINTS OF INTERVENTIONS

Event/existing negative state (1)

FSP Cost of lending to SHFs high.

Underlying causes (2)

Driven by high operational and marketing costs; Scattered and disaggregated nature of Horticulture farmers.

Perceived high credit risk and incompatible financial products.

Absence of quality data on smallholder market segment, limited access to operationally useful information on SHF product development.

Low bankability of SHFs (very informal - little traceability.

Weak value proposition for SHFs (high volume & low value/margins, thus limiting business model sustainability).

Expensive capital for on-lending (applies more to rural financing mechanisms, i.e., SACCOs and MFIs).

Leverage point/ Services / enabling environment (3)

More financial intermediaries Risk mitigation.

Better information/ communication.

More and better data.

Alternative techniques to assess credit worthiness (credit scoring)

Farmer aggregation.

ICT based products to ensure last-mile reach and scale.

Value chain financing approach.

Availability of lending capital.

Weaknesses (speaking to (3)

Limited understanding of market opportunities.

Limited availability of financial intermediation services for horticulture SHFs.

Multiple and uncoordinated information sources may cause confusion.

Scattered data sources low investment in technology and market data, and poor market links across the value chain.

Low agri-specific credit assessment capabilities, compounded with low adoption rates.

FSPs lack opportunities and patient capital to test, innovate and prove impact to attract investment.

Limited physical presence in rural areas; low levels of digital literacy among SHFs.

Diverse capacities by FSP's to serve different categories of farmer.

Proposed interventions (What and How)

Intervention #6: Support or build intervention that accelerates **development and adoption of alternative (digital) credit scoring mechanisms** including portfolio monitoring requirements for SHFs.

- Support select FSP e.g., Fintech to build and test specific credit scoring engines to lend to horticulture farmers.
- Support acquisition of alternative data sources e.g., through digitization of farmer profiling.
- Incorporate digital literacy and saviness.
- This could be one area with Dutch Value Add - through entities with Dutch funders such as as eMata and Simbuka.
- This is one where cooperation with Innovative Digital Economy players in region could be considered.

Intervention #7: Broker partnerships between traditional FSPs (e.g., banks and MFIs) **and non-traditional players** (e.g., FinTechs, Telcos).

- Address issues of data sharing, customer protection and revenue/ cost sharing options.
- Support partnerships think through their value propositions, business model, draw terms of engagement.
- This could be one area with Dutch Value Add - through entities with experience with EU standard GDPR and Uganda Data Protection standards on Data Governance and Customer protection .

Intervention #8: Increasing **financial institutions' risk-taking capacity** (support FSPs with technical assistance geared towards managing loan quality & defaults, data analytics, digital marketing) to serve SHFs.

DETERMINING AREAS/POINTS OF INTERVENTIONS

Event/existing negative state (1)

Marketing and financial services systems for the horticulture sector underdeveloped in Uganda.

Low Produce quantity and reliability.

Underlying causes (2)

Supply side
There is not sufficient critical mass to require prioritisation.
Low executive buy-ins.
The weak capacity of FSPs and preference to other value chains remains a major constraint
Unpredictable and or unsupportive government interventions that often crowd out commercial providers

Demand side
Most smallholder farmers do not perceive horticulture as a long-term commercial opportunity largely due to risk associated with high prices fluctuations, perishability.

Supporting functions
Development interventions often address temporary solutions rather than long term solutions for sustainable markets for SHFs.

Low SHF tolerance to change.

Lack of adequate skills to sustainably serve the Horticulture market.

Actual risk of agriculture - The private sector including farmers reluctance to invest in horticulture sector activities; while previous donor & govt interventions have also not been very successful.

Perishability of horticulture produce.

Leverage point/ Services / enabling environment (3)

Business brokering services (matchmaking platform).

Tailored Infrastructure Financial services.

Coordination Advocacy.

Extension services.

Market linkages.

Development and enforcement of Standards.

Value addition.

Weaknesses (speaking to (3)

Business operating below capacity.

Business model dependency on subsidy; Limited understanding of market opportunities.

Limited commercial incentives for private investment.

Horticulture marketing infrastructure are almost non-existent.

Limited incentive to innovate.

Inadequate agricultural risk mitigation mechanisms.

Extension services are weak or inaccessible.

Limited strategic alliances ; inadequate agricultural risk mitigation mechanisms.

Export markets not linked to high value markets.

Value addition – inadequate.

Proposed interventions

Intervention #9: Private sector business brokering services targeting FSPs and **supporting market actors to invest in key infrastructure**
- Financing of cold storage pack-houses and vehicles
- Machinery cost sharing grants.
- Financing of value addition such as processing of horticulture produce.
- This could be one area with Dutch Value Add - through Dutch entities with requisite skill sets.

Intervention #10: Scale-up support to promote progressive partnerships for SHF Finance, that embed demand driven extension service.
- Partner with government, development sector and private sector to enhance bespoke extension services focused on horticulture.

INTERVENTION RANKING/INITIAL INTERVENTION FOCUS

Ranking - High, moderate low

High	Moderate	Low

Subjective ranking by our team	**Proposed interventions**									
Ranking criteria	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**#8**	**#9**	**#10**
Relevance	H	H	H	H	H	H	H	H	H	H
Effectiveness	M	L	H	M	H	H	M	H	H	M
Feasibility	H	M	H	M	M	M	M	M	M	M
Comprehensiveness & consistency	H	H	H	M	H	H	H	H	H	M
Government/ Donor priority	M	H	H	L	H	M	H	H	H	M
Stimulates crowding in	M	H	H	H	H	M	H	H	M	M
Overall ranking	2	3	1	3	1	2	2	1	2	3

Criteria regarding the significance of actions:

The following box below presents criteria to set priorities across proposed actions for market system changes.

Relevance: Does the proposed action actually contribute to the vision and to the objectives? Is it a necessary improvement?

Effectiveness: Is the action likely to produce results? This includes checking whether actions address intermediate objectives or aspire to realise the vision as a whole: How long into the future do we look?

Feasibility: Is it in line with available resources and with the current capability of market actors and the implementing organisation as facilitator? Determine the feasibility of a market system development project according to market and upgrading potential!

Criteria regarding the correlation of actions:

Comprehensiveness and consistency: In systems development we are often faced with interrelated issues (e.g., cutting cost plus marketing or quality management along the market chain). Is the combination of activities sufficiently complete to reach the objective? Are the proposed actions complementary, do they support each other?

Stimulates crowding in: Do the actions build on each other in a process of incremental improvements? Does the action provide momentum in the current stage of the process?

INTERVENTION RANKING/INITIAL INTERVENTION FOCUS

Proposed Interventions to Focus

All interventions were ranked based on relevance, effectiveness, feasibility; comprehensiveness & consistency, government/ donor priority and potential to crowd in other market players to stimulate systems change. Ranking of all of the long list of interventions is provided in above. This long list and ranking does not provide a full implementation plan yet but does give a starting point and direction of options.

Financing often has not adequately addressed smallholder farmers' need for financial services, primarily due to perceived high credit risk and incompatible financial products. FSPs are devising more efficient, cost-effective, and customised financial solutions to unlock credit and manage risk. Suggested interventions in this section focus on closing the access to finance gaps and help smallholder farmers thrive. The proposed interventions may not seem very different from the already existing actions in the market but provide alternative ways of design and delivery of such interventions.

Following the ranking process, our intervention recommendations are provided below.

- **Tailored agrifinance products** introduced and piloted for SHFs to demonstrate their commercial viability
- Support or build intervention that accelerates **development and adoption of alternative credit scoring mechanisms**
- **Broker partnerships between traditional FSPs** (e.g., banks and MFIs) **and non-traditional players** (e.g., FinTechs, Telcos)
- Design innovative **credit risk mitigation mechanisms that incentivize lenders** to target horticulture segment with higher systemic risk
- Promote **non-financial services and market access linkages, bundled with financial** services such as credit, savings and insurance
- Increasing **financial institutions' risk-taking capacity** (managing loan quality & defaults, data analytics, digital marketing) to serve SHFs
- Private sector **business brokering services** targeting FSPs and **supporting market actors to invest in key infrastructure**

Proposed Stakeholders for Interventions

The proposed interventions are interrelated - meaning that the recommendation are to be implemented as a set of combined interventions rather than single stand-alone activities. Please refer to the feedback loop maps slides for details on interrelated elements; obstacles, enablers and root causes.

Some of the key stakeholders to involve include:

1. Consider working with a cross section of Financial Service Providers (FSPs). We propose inclusion of 3 FSP categories in proposed interventions.

a) SACCOs or local MFIs due to last mile advantage.

b) Fintech or Telco-due to digital and alternative credit scoring capability and opportunity to scale given proliferation of digital and mobile phones among SHFs in Uganda.

c) Commercial bank - due to potential capability for product design and availability of liquidity and national network for scale.

d) Impact investors or social investors.

e) Insurance companies - especially those testing innovative climate insurance models locally through the Agriculture Insurance Consortium or international.

2. Technical assistance providers such as sector actors and agrifinance experts to support build capacity of selected FSPs. This could include experts on Data and Consumer protection to help steer digital interventions.
3. Government, Development sector actors (e.g., HortiMap & other donors) and related entities should be engaged to ensure alignment. Explore potential for co-investment by sector enablers to avoid duplicity and leverage resources.
4. Market and Value Chain actors such as Input suppliers and off-takers. This can help ensure critical inputs and offtake opportunities for produce are available to build farmer (demand side) and FSP (supply side) confidence.

Factor in risk of adverse selection and moral hazard of credit sharing facilities or guarantee funds. Account for moral hazard of Government schemes such as the Parish Development Model which may be mis-interpreted by beneficiaries as 'free' money - which could compromise sustainability. Some of the stakeholder groups present an opportunity for Dutch Value Add.

INTERVENTIONS STRATEGIC FRAMEWORK

Development Outcome (Poverty reduction & inequality Impact/ benefit to the horticulture SHFs)	Smallholder farming households achieve Increased incomes, are more resilient and prosper in a sustainable environment. More and better job creation for women and youth Growth of women & youth enterprises in Uganda Smallholder horticulture farmer profitability increased
Inclusive Financial services & horticulture enterprise target (pro-poor growth objective)	**Access:** Increase in the proportion of smallholder farmers (youth & women) with an account at a formal financial institutions **Usage:** Increase in number of active mobile wallets, Increase in the number and proportion of smallholder horticulture farmers with a loan from a formal FSP; proportion of smallholder working/production capital financed by FSPs. **Quality:** Increase in number of FSPs applying client protection on principles **Enterprise:** Increased formal/high value market sales of high quality by smallholder horticulture farmers; increased value addition on horticulture produce
System change for smallholder horticulture farmers (system level functions leading to the financial system working better for smallholder farmers)	**Changed incentives:** Successful agrifinance models scaled up within FSP space,; Increased credit bureau coverage; Adequate financial infrastructure for smallholder lending; use of new ICT-enabled banking technologies to reach SHFs**;** SHFs have increased access to non financial services from FSPs and sector players; improved usage of research/market information to serve smallholder; increased adoption of alternative digital credit assessment methods; better application of consumer protection principles; horticulture farmers with collective action **Adapted behaviour / Practice:** Leveraging on smallholder data analytics to access credit worthiness and provide financial services; Value chain players and SHFs have increased access to range of financial services; Collateral free credit screening mechanisms for smallholder loans; increased demand & supply of new or improved agrifinance products targeting horticulture small holder farmers; Improved credit information sharing among financial system actors; FSPs leverage FinTechs & Agtechs to bring improved/additional services to smallholder farmers **Increased capacity:** increased awareness of financial products and services available or targeting smallholder farmers; rural financing mechanisms able to access for long term capital for on-lending; FSPs and sector players leverage TA to improve operational capabilities to serve SHFs; Horticulture market transformation promoted
Proposed interventions	• **Tailored agrifinance products** introduced and piloted for SHFs to demonstrate their commercial viability • Support or build intervention that accelerates **development and adoption of alternative credit scoring mechanisms** • **Broker partnerships between traditional FSPs** (e.g., banks and MFIs) **and non-traditional players** (e.g., FinTechs, Telcos) • Design innovative **credit risk mitigation mechanisms that incentivize lenders** to target horticulture segment with higher systemic risk • Promote **non-financial services and market access linkages, bundled with financial** services such as credit, savings and insurance • Increasing **financial institutions' risk-taking capacity** (managing loan quality & defaults, data analytics, digital marketing) to serve SHFs • Private sector **business brokering services** targeting FSPs and **supporting market actors to invest in key infrastructure**

PREVIOUS INTERVENTIONS/ CURRENT PROGRAMS & LEVERAGE AREAS

Leverage areas: Another benefit of system thinking is to uncover leverage points, where one change in the system could create positive impacts in multiple areas.

Leverage points were identified using Kumu metrics of closeness, out degree, in degree and betweenness. These were the central places in systems, including key stakeholders. These include the mitigation of agriculture risk, access to basic financial services, cost of lending to SHFs, design of flexible agrifinance products, increasing the level of investment in the sector; and improvements in the marketability and competitiveness of the Horticulture sector are excellent examples. We also note that most of the behaviours in the horticulture sector are market led, meaning that traders/brokers/export markets have disproportionate influence over the value chain, and if they have access to financial resources, they can make an impact. **Therefore, intervention areas that incentivize system actors to invest in projects that promote risk mitigation mechanisms and improving marketability and competitiveness of horticulture produce would be critical in transformation of the sector.**

Further the government of Uganda, has made considerable progress to expand financial services, but additional efforts are required, especially at the smallholder level. Recent notable achievements include expansion of credit reference bureau, regulation of agent banking & mobile money, launched national financial strategy (2017-2022), drafting of the Agriculture finance strategy expected to strengthen coordination and help scale up the sector. The GOU is also supporting several initiatives such as Agricultural credit facility (ACF) and Microfinance support centre (MSC). In addition, capital providers like Agricultural Business Initiative, Pearl Capital, AGDEVCO, provide capital, credit lines, partial credit guarantees and Technical assistance to promote agricultural finance.

Since establishment of ACF in 2010, the facility has disbursed slightly over Ugx 620bn to 1,194 beneficiaries. ACF average loan size for on farm activities is about Ugx. 240 million, equivalent to medium - SME requirements, but rather bigger than a typical commercial horticultural smallholder farmer. The big banks, i.e., Stanbic Bank (U) Ltd, DFCU Bank Ltd, Bank of Baroda (U) Ltd and UDBL continue to dominate utilisation in terms of loan value. This is due to the fact that the majority of their clientele are mainly medium to large scale borrowers engaged in large scale farming and agro processing.

Further discussions with some of the participating FSPs, indicate that the interest cap of ACF could also be a bottleneck for scale. The reality is that banks see the 12% for SHFs as economically unsustainable and hence don't push their main lending to the sector through this fund. (They may publicly say they support ACF, but the reality is shown by the relatively minimal lending). ACF will continue for the long term but its relevance to small holder farmers may not much be felt, unless FSPs are incentivized to intentionally lend to smallholder farmers.

The MSC, Provides wholesale capital to MFIs, SACCOs, primary cooperatives and SMEs. Wholesale lending accounts for about 60% of its portfolio, average size of about Ugx150 million. MSC charges attractive interest rates at a minimum of 9% . MSC also has a window for Islamic banking. In addition, MSC provides TA in governance, financial management and savings mobilisation. The programme outreach is still limited. On the supply side, the process of acquiring MSC credit is complex to most SHFs as they lack most of the requirements set by MSC and their processes are fraught with high levels of political interference that stifles independent development and operations.

Development sector financing. Development partners are providing financial resources and TA, financial support comprises direct funding and indirect financial support.. The agriculture annual finance report 2021, reports that over the past five years gross disbursements of the Uganda total official development assistance has been less than the commitments. Uganda received only 42% of the committed funds, this is largely attributed to slow implementation of agriculture financing projects and institutional inefficiencies such as long procurement processes, failure to follow guidelines and delays in submission of accountabilities.

Private sector credit. The agriculture sector accounts for about 13% of the private sector credit (BOU 2020). This is lower than other sectors like construction, mortgage, etc. Much effort is needed to de-risk the agriculture sector to attract lenders. Most of agriculture lending is for agro processing and marketing activities, thus neglecting on farm activities, where most smallholder horticulture farmers are engaging. While the on-farm activities feed and keep the rest of the value chain moving, it attracts lesser credit than agro processing and marketing. **This means more support for production level functions such as extension, research and disease control. In addition, more financial services and products also need to be available to producers in horticultural value chain.**

PREVIOUS INTERVENTIONS/ CURRENT PROGRAMS & LEVERAGE AREAS

Lack of credit information is a factor that contributes to the constraints faced by smallholder farmers, as assessing their creditworthiness represents a unique challenge compared to larger commercial farmers/farms. It can be more difficult for an SHFs to develop a credit history as they have less access to formal sources of finance such as banks and other financial institutions whose data is typically used in the production of credit reports. At the same time, SHFs do not generally have access to fixed assets, such as land or buildings, which are usually required by banks as collateral to secure loans. Instead, SHFs mainly rely on less attractive or low value assets to access finance. **Finding alternatives to traditional collateral-based lending will most likely scale smallholder to access the resources they need to launch and operate their enterprises**.

Uganda has had aspirations to bridge the digital divide for over a decade now.(i.e., through the operationalization of laws such as the Security in Moveable Property Act, 2019 that allows for commercialization of intellectual property by allowing the use of IP rights as collateral for loans, and the operationalization of the National Payment System Act and Regulations which foster innovative financial solutions while ensuring effective consumer protection and stringent regulation). Further the NDPIII addresses the necessity for innovation, technology development, and technology transfer as drivers to an inclusive and robust digital economy and under the digital transformation program, the Government aims to provide 80% of its services online. However, despite numerous efforts and policies, the majority of Ugandans remain excluded. Some of the documented challenges and gaps in implementing such initiatives and policies include low levels of digital literacy, limited internet coverage and low levels of digital inclusion in the country. From systems map connections, we know that leveraging digital technology for agricultural finance is critical for cost effective service delivery and outreach to smallholder farmers. We observed that digital adoption will further reduce the cost of lending. Given the high costs of serving small holder farmers, innovative and efficient means of extending financial services to these small holder farmers are required. Further leveraging of technology including FINTECHs and MNO will be critical in driving down the costs of service delivery, financing and insurance which are important ingredients in agricultural finance transformation in Uganda.

Key areas include improving digital marketing and payments; introduction, testing and scaling of innovative services for farmers. **Therefore, the acceleration of digital financial services in the agriculture sector are important ingredients in agricultural finance transformation in Uganda.**

Development partner financing, case of aBi. As of December 2021, aBi – provided lines of credit to 28 FSPs to facilitate micro-loans to agribusiness SMEs, most are tier 1 FSPs, but the portfolio now includes all Tiers 4s including some SACCOs. FSPS are charged treasury bill rate plus (0.5-2%) and then on-lend at their own rates. The duration of the loan is up to seven years. In addition, aBi offers partial guarantees that cover 50% of the agricultural loans (both portfolio and individual) as of 2021 around 105,230 borrowers had benefited with an average loan size of about 5m. One of the challenges mentioned was low utilisation of guarantee and line of credit investment funds and inappropriate agriculture financing products.

Though G.o.U, and other entities like aBi, FSDU, Pear capital have been promoting innovation in agriculture finance by offering finance, TA and grants, the potential demand for such assistance seems to exceed supply. The overall contribution of the public schemes to agriculture credit is relatively small, i.e., the total annual loans facilitated by ACF and aBi finance were estimated at around 720bn in 2022, representing just 10% of the total agriculture sector loans. Although precise data is not available, one can reasonably conclude that the contribution is important but modest vs the need out there.

A scale up of public/private support to promote agriculture finance and insurance especially for Horticulture SHFs. Critically important also to address the issues of low utilisation of catalytic funds.

While this report focuses on the supply and demand side of finance, equally there are demand side interventions that are equally important; i.e., promoting access to high quality inputs for horticulture farmers; market access – especially to high value markets, promoting climate smart agriculture and organising farmers for aggregation and commercialization. These activities could also be facilitated by the supply side actions in a coordinated manner.

HORTICULTURE ACCESS TO FINANCE -SYSTEM RISKS

During the course of the desk research, interviews, and field work, we noted down any causal relationships around access to horticulture finance and converted into a systems map using the software Kumu. This systems mapping exercise allowed us to look for feedback loops and also explore some of system direct/indirect outcomes/behaviours. This section shows how the parts of the systems map affect future program activities and gives a reflection on potential risks of each.

Producers of horticultural crops in the country are generally dependent on other actors in the value chain for production financing and thus tend to have limited control over input and produce prices. The input supply part of the horticulture value

Horticulture production activities are largely done in the low-lying areas, i.e., swamps.

Good agricultural practices are not widely adopted by farmers. Only a small share of the farmers use hybrid seeds (estimated at 15% by interviewed experts). The rest of the farmers use OPV and farmer-saved seed.

The pest and disease pressure is high (partly due to tropical climate and farm practices) whilst smallholder farmers have limited knowledge of pest and disease control and often overuse crop protection agents. Chemical overuse has often led to serious food safety and market access issues detrimental to the horticulture value chain. Furthermore, irrigation is not common.

Low investments in the sector mainly due to high risks associated with highly informal markets dominated by small traders and brokers, small number of farmers who can supply eligible product quality, low yields, high post-harvest losses, small and fluctuating supply volumes; and high operation costs due to fragmented farms, long distances, and high product losses in transit.

Limited compliance to export quality standards and food safety regulations from the farm to end markets

The risk associated with horticulture discourages financial institutions from offering credit to entrepreneurs. A few commercial banks that are interested to lending to this market segment are increasingly leveraging on partnerships with other sector players to shelter/ mitigate risk; they may include guarantee covers; off taker undertakings; insurance cover; among others.

Informal credit providers also exist in the ecosystem and contribute a significant portion of the capital available in communities. However, despite being accessible to farmers they offer very high interest rates and punitive terms which ultimately disadvantage farmers.

FSP's, particularly rural based ones, often lack sufficient capital and funds to lend to SHFs, and in turn rely on wholesale capital providers to finance their activities, often at a high cost. This leads to a complex system operating within a broader ecosystem and in most cases the additional layers increase interest rate costs to smallholder farmers.

Traders and off takers have a dominant position in linking rural producers to urban consumers. Only a minority of the farmers take their own produce to the market. Therefore, traders provide an important intermediary service for both farmers and consumers, since the main vegetable production fields are in rural areas of Uganda. The off takers provide production and emergency to farmers

Although the government has put in place laws, regulations and institutions, implementation and enforcement is weak.

QUAD TEE

STAKEHOLDERS MAPPING

Smallholder Horticulture Farmers & Farmer Groups

Smallholder growers scattered all over the country dominate the supply chain of horticultural produce, mainly with support from family and local unskilled labour with limited access to specialized advisory services. Production is also characterized by the use of low-quality inputs (varieties, fertilizers, insecticides, and fungicides). Most of the produce is consumed by the domestic market.

Unsurprisingly, smallholder farmers are a very diverse group. This report categorizes SHFs into three high-level segments distinguished primarily by the nature of their relationship with buyers and ambition levels noncommercial, semi-commercial, and commercial (Growing access to finance report - Dalberg 2012").

- Non-commercial farmers generally grow staple crops for subsistence and supplement their produce with wages earned from casual labour.
- Semi-commercial smallholder farmers have a more business-oriented approach to farming and regular sales to buyers and traders;
- Commercial SHFs - those in tight value chains typically have contracts with buyers, which often provide access to improved inputs, financing, and other support.

This variation in characteristics among smallholder households in turn drives differences in their financial needs.
The pest and disease pressure is high (partly due to tropical climate and farm practices), whilst smallholder farmers have limited knowledge of pest and disease control and often overuse crop protection agents. Chemical overuse has often led to serious food safety and market access issues detrimental to the horticulture value chain. Furthermore, irrigation is not common, and water is not harvested.

Field research revealed that horticulture production was majorly dominated by the youths and women, however with limited access to land ownership and managing this constraint by renting land. The main mode of transport from farms to markets is by motorcycle, thus favouring male traders compared to female traders. and on the contrary in the local markets, vendors tend to be females.

Producers of horticultural crops in the country are generally dependent on other actors in the value chain for production financing and thus tend to have limited control over input and produce prices. The input supply part of the horticulture value

Further engagements with farmers' groups highlighted that inadequate working capital was a key constraint for both individual farmers and groups. Further, horticulture farmer groups reported difficulty in obtaining finance, especially bank loans. Key reasons included cumbersome paperwork, stringent bank loan requirements due to their informal nature and inadequate record keeping.

The challenge was compounded by a low level of formal education and financial literacy, limited trust and negative perception toward formal finance providers. Expensive inputs, price fluctuations and inconsistent markets are some of the other constraints farmers are facing and they contribute to the decisions on the level of investment identified at the farm level by the farmers, and the choice of financing partners.

The level of aggregation of horticulture farmers was observed to be relatively low leading to most participating in the market as individuals. Attachment to off-takers was also not consistent. This limited the farmer's bargaining power in the market. Most farmers sell their produce individually to middlemen who are the only link to the market. This practice leads to low farm gate prices as the middlemen tend to undervalue farmer produce and pass on other costs to farmers.

STAKEHOLDER MAPPING - Sample profiles of interviewed smallholder farmers

Nagawa Phoebe - Masaka District

Nagawa Phoebe is a horticultural farmer from Masaka District. She has over nine years of experience and grows green peppers, tomatoes, Sukuma wiki, cabbage, bananas, maize, and beans. Phoebe operates as a demo farmer and has access to extension services from Masaka District farmers association..

She has been operating these enterprises on two acres of land, but recently expanded to seven acres which she acquired from her side incomes.

Phoebe banks with DFCU for saving products, has accounts in Centenary Bank, and has tried other banks such as Vision Fund.

She uses her other accounts to guarantee others as she is a woman leader, and this allows her to support people in her community. Phoebe herself also gets most financing from co-saving from her groups. She thinks that the banks should design youth loans for agriculture production specifically, and that the interest rates on agricultural loans are not realistic.

Phoebe's production suffers during long droughts, as it's expensive to collect water during these periods. She resorts to bottle irrigation which is not sustainable on a commercial basis.

Magembe Gerald - Masaka District

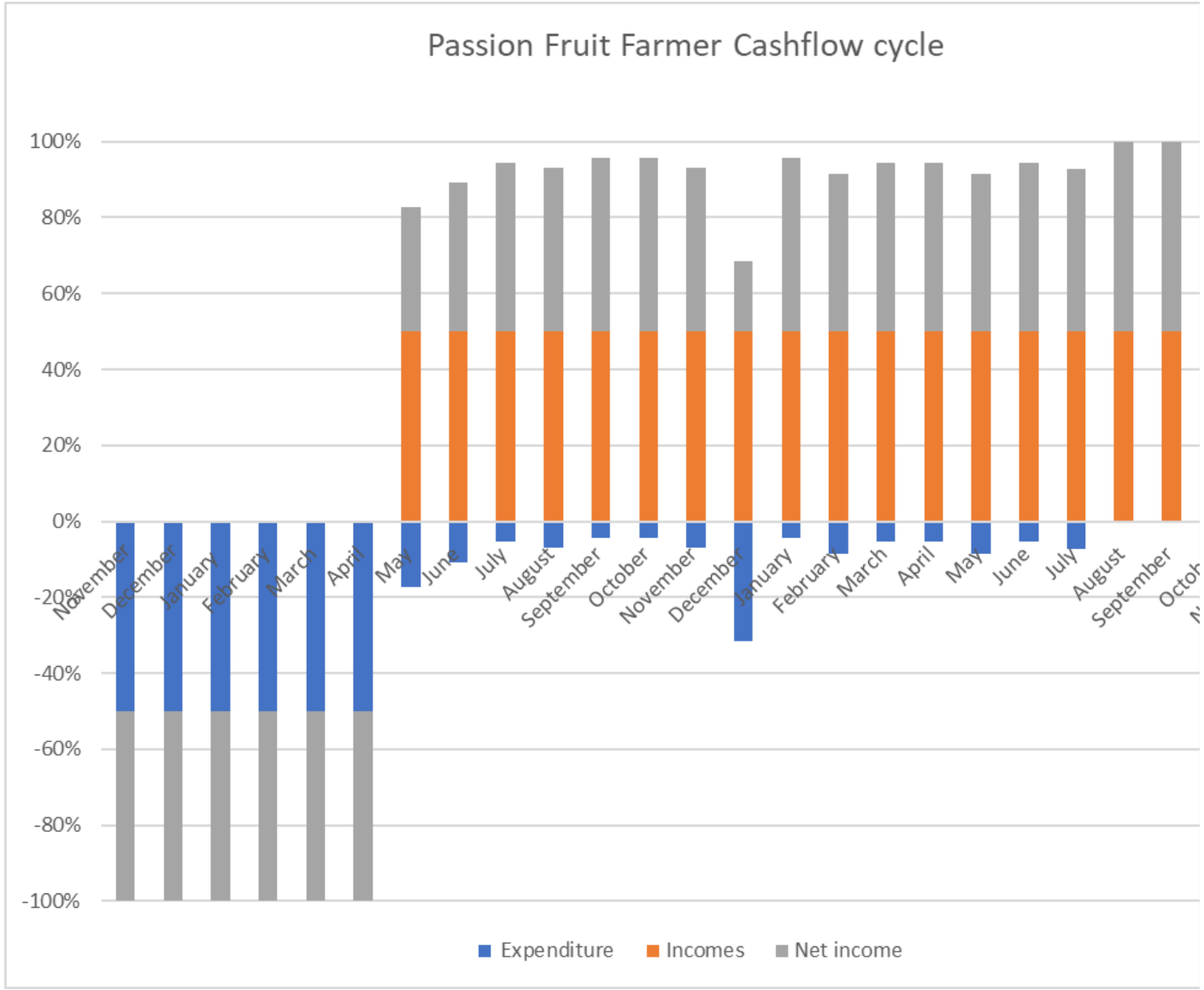
Magembe Gerald is a pineapple farmer from Masaka District, based in Lwankoniu S/C Kibutamu Parish. Gerald grows pineapples on his eight acres of rented land and has eight years of pineapple harvesting experience.

Gerald has concerns about the market and prices, fake inputs, theft, and the cost of inputs impacting the margins. He banks with PostBank Uganda and has a solid understanding of their loan products for farmers. He also runs informal financing through borrowing from friends by selling his garden rights for periods. For example, if someone requires harvesting for several weeks, he will provide the land and then reclaim it once they are finished.

Although Gerald has himself mastered the art of his pineapple production through planting during the **dry season,** he explains the need for financial institutions to appreciate the challenges farmers are facing in terms of climate and its unpredictable patterns. According to him, they should be more accommodating with this weather challenge and not enforce interest period extensions. The informal credit flows in his village accommodate his stated needs and are built on trust relationships that override the demand for formal credit from banks in his circles.

STAKEHOLDER MAPPING

Typical seasonal cash flow cycle of horticulture farmer: passion enterprise of a multi crop farmer in Mpigi District



Farmers differ in their schedule of harvest and activities they carry out during the year. This in turn alters cash-flow patterns. In the sample, the initial period of negative cash flow was due to crop establishment costs. This is followed by positive cash flows after beginning and continuous harvest and sale of produce for the next two years.

STAKEHOLDER MAPPING - FINANCIAL SERVICE PROVIDERS

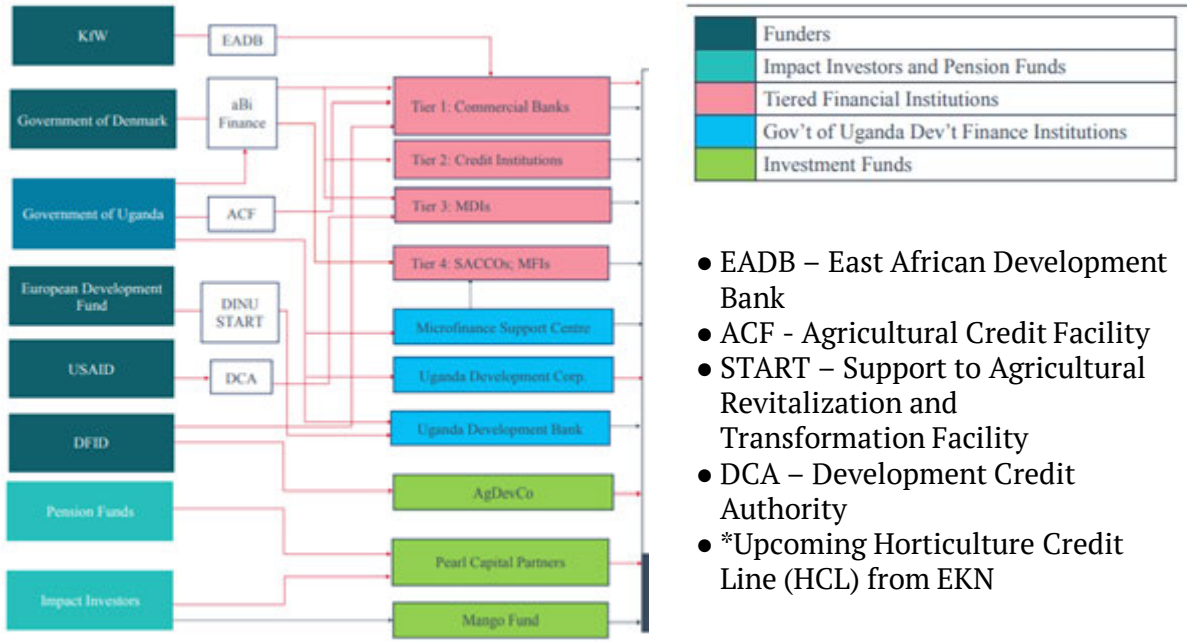
Financial service providers (FSP's) in Uganda include regulated and unregulated institutions such as Commercial banks and deposit-taking MicroFinance Institutions (MFIs) under the Bank of Uganda, MFIs under UMRA, SACCOs, Impact funders, fintechs, Mobile money providers, Money lenders, VSLAs and informal lenders.

Some of the main FSP's offering agricultural financing in Uganda include Centenary Bank, Post Bank, FINCA, Opportunity Bank, Finance Trust Bank, Equity Bank, Uganda Development Bank, DFCU, Stanbic Bank and many SACCOS.

Informal credit providers also exist in the ecosystem and contribute capital available in communities. However, despite being accessible to farmers they offer very high-interest rates and punitive terms which ultimately disadvantage farmers. A few commercial banks that are interested in lending to this market segment are increasingly leveraging on partnerships with other sector players to shelter/ mitigate risk; they may include guarantee covers; off-taker undertakings; insurance cover; among others.

FSP's offer a wide range of financial products to SHFs along the value chain. For most FSP's, managing risk is the best strategy employed This comes through various mechanisms such as stringent appraisal standards including traditional collateral. This affects youth and female horticulture farmers significantly, yet they dominate the horticulture sector production activities.

Some constraints facing the provision of finance in the horticulture sector include; collateral substitution options; low farmer market access, limited financial literacy; limitations in infrastructure which inhibit accessibility and marketing, lack of aggregation at the farmer level and the history of risk to the sector.



- EADB – East African Development Bank
- ACF - Agricultural Credit Facility
- START – Support to Agricultural Revitalization and Transformation Facility
- DCA – Development Credit Authority
- *Upcoming Horticulture Credit Line (HCL) from EKN

FSP's, particularly rural-based ones, often lack sufficient capital and funds to lend to SHFs, and in turn rely on wholesale capital providers to finance their activities, often at a high cost. This leads to a complex system operating within a broader ecosystem and in most cases the additional layers increase interest rate costs to smallholder farmers.

Small-scale farming is often perceived as risky, with limited opportunities for increased productivity, innovation and value addition. Stakeholders interviewed in the engagement see the opportunity for the deployment of relevant financial products and services for SHFs (semi-commercial and commercial) and the horticulture value chain players that interact with them.

STAKEHOLDER MAPPING OVERVIEW FINANCE SERVICE PROVIDERS

A range of FSPs are currently working to address the needs of smallholder farmers in Uganda; however, a significant number, in turn, rely on various capital providers to finance their lending activities. All of these actors form a complex and dynamic industry operating within a broader enabling environment that includes technical assistance providers, information, and market & research platforms. They range from formal financial institutions, including state banks, commercial banks and microfinance institutions; to non-financial institutions, including mobile network operators and value chain actors; to informal or community-based financial institutions, including money lenders, family members, village savings and loan associations and savings and credit cooperative organisations, among others.

Some types of FSPs have operated in smallholder finance for a relatively long time and operate in multiple regions, i.e. commercial banks and MFIs; another set of FSPs are relatively newer to the space and typically target specific segments of the market, be they geographies, customer segments, or need; they are beginning to scale, i.e. FinTechs and Mobile Network Operators

Ultimately, each type of provider has relative advantages and drawbacks; no single type of FSP can successfully meet all the financing needs of SHFs. For instance, formal financial institutions are often able to provide SHFs with a comprehensive product offering, potentially at more competitive interest rates, but the terms of the product may be inflexible and their reach in rural areas limited.

An informal or community-based finance provider offers convenience and is typically viewed as a trustworthy source of finance, but it can also leave SHFs vulnerable to extremely high interest rates or unreliable access. Value chain actors may be more willing to lend to SHFs given their familiarity with agriculture; they can also guarantee market access for the borrower, but are unlikely to offer non-agricultural credit or other kinds of services. However, it's important to note that smallholder finance should move toward a world of choice where smallholder farmers have access to a wide variety of providers and products and can select the most appropriate ones to meet their needs.

VSLAs and SACCOs were particularly appealing to farmers because:
a) their set-up is comfortable for the rural borrowers
b) they are owned by the member farmers, enabling them to influence decision-making
c) SACCOs have branches in rural trading centres close to farmers. However, borrowing from VSLAs can be problematic because they are designed more as a social proponent as opposed to a commercial enabler, mainly due to small loanable funds.
SACCOS also runout of capital to lend out but also keep a savings history for members.

Banks require many documents, such as business plans and balance sheets, inappropriate for smallholder farmers (SHF's), the base of horticultural exports. The North-East Chilli Producers Association (NECPA) revealed that 69% of the farmers used personal savings and 31% accessed loans from Village Savings and Loan (VSLA).

In most cases, loans from VSLA attract high-interest rates but have a major advantage of easy accessibility.

Financial Service providers need to cater for the seasonality of horticulture produce, as well as cash flow cycles unique to different sub-value chains. Including the need to account for delays by off-takers in making payment.

STAKEHOLDER MAPPING - OTHER CAPITAL PROVIDERS AND IMPACT INVESTORS

Government: At least eight agricultural financing initiatives have been launched by the Government of Uganda since the 1990s, including the establishment of the Agricultural Credit Facility (ACF) under the Bank of Uganda. The government has also set up several funds such as EMYOOGA and Parish Development Model (PDM). For all funds, utilization and moral hazard remain key sector challenges. Other Government related organisations are listed below:

- **Uganda Development Bank (UDB):** Is a public enterprise wholly owned by GoU and carrying on business as a DFI. UDB is funded through internal profits, GoU capital contribution and borrowing from development partners.
- **Uganda Development Corporation (UDC):** The UDC is an agency of the Ugandan Government whose mandate is to promote and facilitate industrial and economic development. It is funded by the Government of Uganda and lends to agribusinesses.
- **Microfinance Support Center (MSC):** MSC is a rural financial services company that was set up in 2001 to manage micro-credit funds on behalf of the Government of Uganda. It provides credit and Business Development Services (BDS) to SACCOs, Producer Cooperatives, Microfinance Institutions, Village Savings and Loans Associations, and Small and Medium Enterprises.
- **BOU:** Has made significant efforts to foster financial inclusion in Uganda's agricultural sector (FinScope, 2018). This includes initiatives such as the National Financial Inclusion Strategy, the National Strategy for Financial Literacy, and the Mobile Money Guidelines. The BOU also managed the Agriculture Credit Facility (ACF) on behalf of the government in partnership with other institutions. ACF aim is facilitating the provision of medium- and long-term financing to projects engaged in Agriculture and Agro processing, focusing mainly on commercialization and value addition

Venture Capital (VC) and Private Equity (PE) Funds: Among the solutions to make it easier for agricultural value chain players to obtain capital is through investment funds. The stakeholder mapping revealed the existence of several institutional investors, examples listed below

- **Pearl Capital Partners:** They are a fund manager specialising in investing risk capital in SMEs operating in the agriculture value chain. They invest in growth stage businesses in agribusiness of all types, providing capital ranging from $250k to $5m;
- **AgDevCo:** They invest in growth stage agribusinesses of all types, providing capital ranging from $500m to $5m.
- **Acumen Fund:** Companies focused on integrating smallholder farmers into global supply chains and providing them with access to better products that allow them to sustainably increase production and sell more crops. They invest in early to growth stage agribusiness and those in other sectors, ranging from $100m to $2m in capital.
- **Mango Fund:** Businesses doing value addition, providing capital ranging from $5,000 to $75,000.
- **Development Agencies:** These largely provide Grants and Business Development Services to businesses. A few examples of such agencies include DANIDA, FCDO, USAID and the MasterCard Foundation. They run various programs in the country within the agricultural sector. For example, USAID has programs like the Inclusive Agricultural Market (IAM) Activity. FCDO has programs like Climate Smart Jobs programme and previously NUTEC FS.
- **Export Promotion Board (UEPB)** supports those looking to export. Their exporter checklist helps businesses gauge their capacity to export.
- **Other organizations include** Private Sector Foundation Uganda (PSFU), Uganda National Chamber of Commerce and Industry and a number of incubators, accelerators, Technical Assistance and Investor Networks supporting the agribusiness sector.

STAKEHOLDER MAPPING
Highlight: on Pearl Capital partners Horticulture credit line approach

Among the solutions to make it easier for agricultural value chain players to obtain capital is through investment funds. The fieldwork revealed the existence of a number of institutional investors, PCP being among them.

Pearl Capital Partners is an investment fund manager specialising in investing risk capital in SMEs operating in the agriculture value chain. They invest in growth stage businesses in agribusiness of all types, providing capital ranging from $250k to $5m; PCP uses smallholder farmer networks to generate significant income for millions of families across East Africa.

The byproduct of this growth is that it creates financial returns for PCP and its investors.

Some of the funds under their management include the following:

- Yield Uganda Investment Fund
- African Agricultural Capital Fund
- African Seed Investment Fund
- African Agricultural Capital (AAC)
- Horticulture credit line – EKN (new)

PCP investment views the development of the private sector as the most viable means to bring about economic development and prosperity in Uganda and with this investment, it's envisaged that thousands of jobs within the agriculture value chain will be created and sustainably increase smallholder farmers' incomes in addition to catalysing additional investment in the sector.

Key challenges from the Industry - relating to Impact Investment:

- Insufficient investment-ready opportunities: The demand for capital by social entrepreneurs is very large, however, the formalities required to meet the capacity assessment criteria required by social investors/ funders are way beyond the level of the social-focused startups. I.e. minimum capitalization of at least $100,000 for impact fund consideration.
- The modelling of enterprises as social enterprises gets mixed up with conventional for-profit models, leading to frustration by the end actors and to dropout. The need to sensitise, mentor and train masses about social enterprise modelling and management is apparent.
- Lack of standard social impact measurement guidelines. Social impact is often measured and interpreted as per the individual donor/investor or end actor/entrepreneur.
- Enabling policies to promote social enterprises need to be in place too.

Despite the challenges enumerated above, there are still many opportunities for Impact investors:

- Social challenges being gold mines for entrepreneurs, fostering entrepreneurial mindsets and the ability of the masses can fast-track the economic growth of the country. Supporting the masses to appreciate individual potential rather than donor expectancy or/and entitlement can go a long way in fast-tracking positive social change.
- A large number of development agencies in the country start with good intentions but fail because of limited or availability funding. The availability of conventional grants is getting increasingly low. This presents an opportunity social enterprise operations, i.e. SACCOs as a sustainability strategy.

Note: by the time of the report, we did not have full information on the proposed HCL. Separate paper to be written as this was out of scope and is still in development

STAKEHOLDER MAPPING - Traders, Off-Takers & Brokers (1 of 2)

We engaged a variety of horticultural produce off takers in the market in our research, all of whom are of importance to the horticulture farmer as they provide direct market and the first contact point for the farmer. These offtakers distribute to the various retailing points, including supermarkets, export markets and national-level open markets like Nakasero and Kalerwe.

The level of capital distinguishes this category of stakeholders with small ones concentrating to the farmers at grass root and the bigger ones handling transport to the wholesale buyers in the cities.

Field research reveals that traders and off takers have a dominant position in linking rural producers to urban consumers. Only a minority of the farmers take their own produce to the market. Therefore, traders provide an important intermediary service for both farmers and consumers, since the main vegetable production fields are in rural areas of Uganda. The offtakers provide production and emergency to farmers.

The study revealed that in most parts of the country, farmers marketed their horticultural produce in the local markets or through a broker/agent. At the national level the main wholesale and retail markets in Uganda can be found in Kampala city. They are St. Balikuddembe market (Owino market), Kalerwe market and Nakasero market. Produce handling at the markets is not optimal and can cause food safety issues for consumers.

The major marketing problems identified were; lack of preservation technologies for products before, during and after market days. This was critical for perishable vegetables and fruits. Exploitative behavior and high levels of informality are key challenges reported by different stakeholders.

Stakeholders during the validation workshops also mentioned that farmers do not know their actual costs of production and sometimes sell their produce below their production cost. Also, the presence of cartels at urban markets by traders is often mentioned by interviewed farmers as a barrier for doing business.

At present, our desk research indicates that about 15 reputable exporters are supplying the international market, supplemented with many opportunistic so-called ‘brief case’ exporters. The more serious exporters often have their own production fields, have out-growers, supply out-growers with technical support and assistance, and have their own packing facilities. The ‘briefcase’ exporters often buy the produce on the open market or make informal agreements with farmers without providing any support. Both types of exporters lack Global G.A.P. certification and mainly focus on supplying the EU ethnic or regular market or some markets in the Middle East.

STAKEHOLDER MAPPING - Traders, Off-Takers & Brokers (2 of 2)

The capacity of the pack houses is not sufficient, according to stakeholders interviewed. Many pack houses are in residential houses that were turned into pack houses. Cold chain facilities during transportation from the farmer fields to the pack houses and from the pack houses to the airport were also reported to be lacking.

Off-takers also provide market information on prices and also predetermine what farmers grow for the upcoming season. They employ contract information from export off-takers or importers to make informed choices and communicate the same to their farmers through the chain. Information such as chemicals acceptable on the international market and application rates travel along the off-taker chain.

Formal off-takers who afford to license and maneuver the international trade standards buy and select based on their supply contracts standards to obtain the premium price.

They face serious concerns; including perishability, low production levels, poor quality harvest due to chemicals and pests and diseases and limited capital. They majorly target the European market and a few Asian and American markets.

At a policy level, the liberalisation policy helped to promote the horticultural industry. This has also been coupled with the removal of many policy obstacles limiting exports of non-traditional agricultural commodities. However, further policy reform could accelerate market development, i.e., there is a need to strengthen the availability of private sector access to large-scale storage facilities and trucks, these could be through leasing programmes or other means.

Further to this, there is a need for the facilitation of credit to nontraditional agricultural exporters where necessary. This could be done by improving the performance of organisations like the export finance scheme under the Bank of Uganda. Coupled with these, policies which foster increased support for research, technology development and transfer in this field should be further strengthened and supported.

STAKEHOLDER MAPPING - MARKET ENABLERS AND INFLUENCERS (1 of 2)

The policy environment relevant for smallholder finance

- We engaged many government officials at various levels, including the production department at Mpigi district, the Ministry of Agriculture, the Agricultural inspectorate department in Entebbe and Clearing officials at Fresh Handling Entebbe.
- The Ministries of Agriculture and Finance are often the key stakeholders for policies that directly affect agricultural practices and financing in Uganda; key among these is the provision of quality inputs and extension services, as well as regulations on input quality.

The Ministry of Finance and BOU

- Play an important regulator role for institutions that have the potential to serve smallholder farmers, e.g., non-deposit taking financial institutions, such as non-bank MFIs and leasing companies; mobile network operators looking to offer mobile financial services; or commercial banks looking to use warehouse receipt financing.
- They can also influence the development of stronger information ecosystems through credit bureaus and non -collateral registries and management to the extent affect the extent to which farmers can interact with markets.

Market and learning platforms

- i.e. The Horticulture financing platform bring can bring a degree of coordination to the various activities happening within the sector, while also encouraging learning and knowledge-sharing.
- These activities help stakeholders build on each other's experiences and avoid having to reinvent the wheel. Such platforms also provide a centralized forum for stakeholders to find partners.

Fintechs & mobile network operators

- This category of enablers can be involved in the sector as enablers and financial service providers. For instance, mobile network operator, like MTN Uganda, and Airtel - that offers mobile money can enable a bank to serve smallholder farmers thanks to a lower cost to serve.

STAKEHOLDER MAPPING - MARKET ENABLERS AND INFLUENCERS (2 of 2)

Capacity building & Technical assistance		
Stakeholder interviewed link these non-financial services to farmers' ability to repay a loan (through greater yields) and decreases the cost to serve them, thereby making it easier for a broader range of FSP's to offer this population affordable credit.	From field research, TA is proving to be a vital complementary service that can operate at several levels both on the demand and supply side of finance. On the demand side, extension services can be effective in helping increase smallholder yields from a low base. In addition, by aggregating farmers for efficient training, and organization and become the recipient's production financing capital and sometimes credit at lower rates than might be offered to individual farmers.	On the supply side, at the FSP level, TA can help providers overcome the constraints of product design, customised product marketing and segmentation of smallholder farmers. A final form of technical assistance can be aimed at strengthening public institutions, reforming programs and policies that directly affect farmers, and addressing constraints in the enabling environment by increasing the effectiveness of government. Running programs from the World Bank and IFAD have sought to provide these services to host country governments, however, their effectiveness is debatable.

HortiMAP programme

TechnoServe and the Embassy of the Kingdom of the Netherlands (EKN) share a commitment to supporting resilient and inclusive food systems that contribute to increased prosperity for smallholder farmers (SHF's), entrepreneurial farmers (EFs), FFV vendors, producer organizations (POs), micro-retailers and other MSMEs (or SGBs), and farm families.

Goal: Increase in the target number of households with access to nutritious and safe horticulture products from 250,933 to 270,000. create more than 12,000 jobs for women, men, and youth along the horticultural value chain

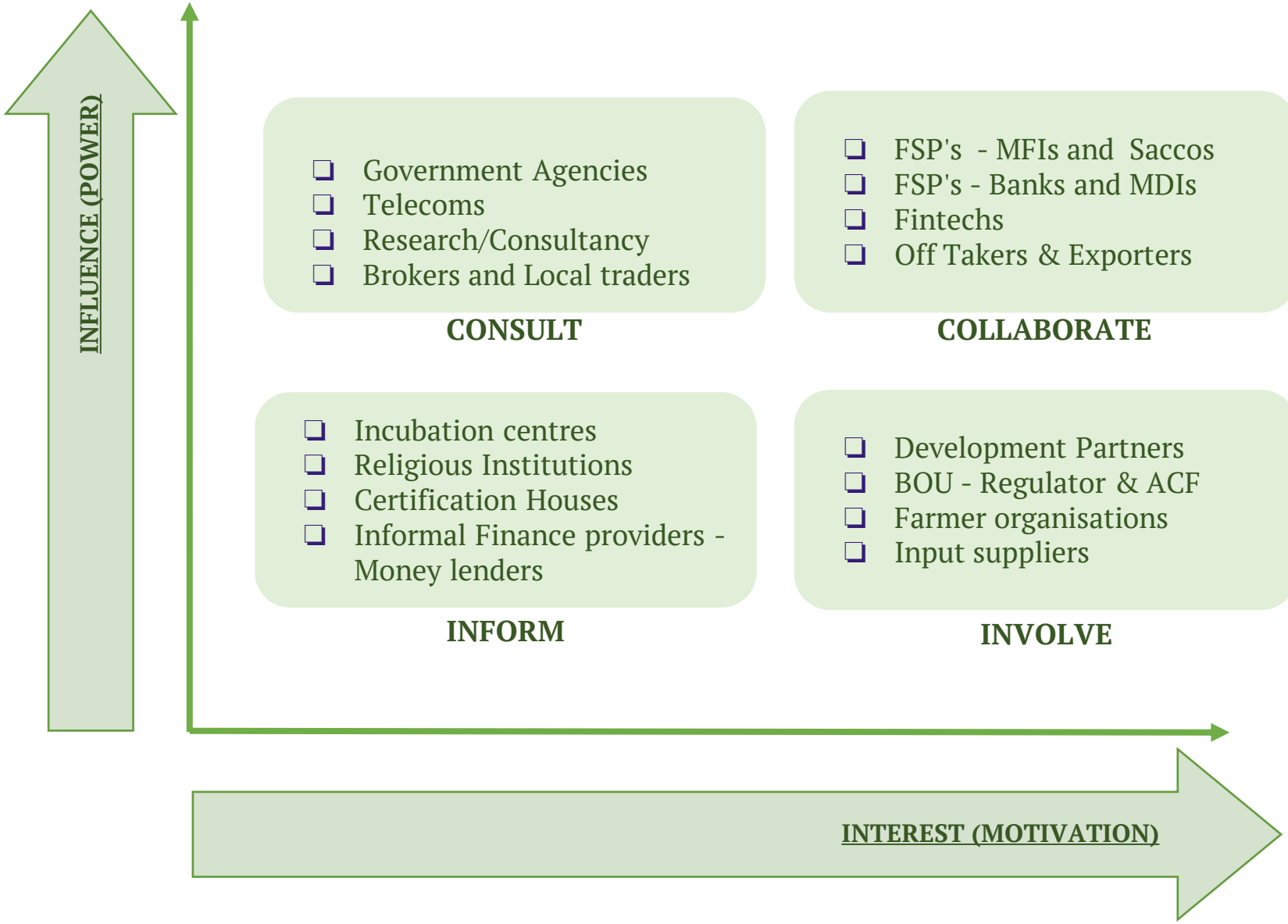
Outcomes: The horticulture sector is transformed to an efficient, and competitive sector; Productivity and supply of horticulture products sustainably improved.

Outputs: Working across ten prioritized horticultural value chains—tomatoes, onions, cabbages, pepper, eggplants, okra, carrots, pineapples, passion fruits, and watermelon—HortiMAP is implementing towards. Increasing capacity of Farmers to demand for and invest in improved inputs, on farm infrastructure, and climate smart techniques to increase production; Market facing MSMEs, POs and farmers have increased capacity to make investments and deploy new business models to meet quality and safety standards; Activities cover twenty-five districts in three regions, including the Kampala metropolitan area.

STAKEHOLDER MAPPING: Relative advantages & disadvantage of different types of FSP's

Formal Financial Institutions (Commercial Banks, State Banks, Mfis)	Value Chain Actors (Buyers, Input Providers)	Informal Community-Based FSP's (Money Lenders, VSLAs SACCOs)
❏ Able to provide SHF's more comprehensive offerings (e.g., savings, insurance, etc). ❏ More refined agri-finance/ other financial products and credit assessment techniques given financial expertise. ❏ Potentially able to offer more competitive rates given more diversified financial services activities and easier access to cheap capital. ❏ SHFs benefit from greater customer protection given formal financial sector regulations. **Disadvantages** ❏ Value proposition, given return needs, high cost to serve, thus dependence on partnerships. ❏ Competing lending opportunities with lower risk and more attractive returns. ❏ Lack of farmer aggregation, collateral and credit bureaus to expand beyond the organised value chains. ❏ High upfront investment to build SHF lending capacity that will not be recouped without scale.	❏ Convenient for SHF's given geographical proximity to and frequent interactions with borrowers. ❏ Often offer more flexible borrowing requirements (i.e. no collateral) due to relationship-based nature of lending activities. ❏ Often demonstrate greater willingness to lend to SHF's given under-standing of agricultural sector and individual small-holders' activities. ❏ Repayment and other terms may be better suited for agriculture (e.g. aligned to crop cycle) given agricultural expertise. **Disadvantages** ❏ Lack of farmer aggregation, particularly for larger buyers with limited local outreach. ❏ Farmer loyalty (side selling) with increasing competition. ❏ Sustainability of agronomic services that guarantee quantity and quality. ❏ Processing & working capital capacity limits ability to scale financing scheme.	❏ Frequently viewed by SHF's as more trustworthy and most used source of credit. ❏ Often offer more flexible borrowing requirements and/or repayment terms due to relationship-based nature of lending activities. ❏ Convenient for SHFs given geographical proximity to borrowers. **Disadvantages** ❏ Limited or expensive capital for growth. ❏ Lack of product innovation due to limited competition. ❏ Governance challenges at scale ❏ Subject to political interference and changing public agendas.

STAKEHOLDER ENGAGEMENT MATRIX



Based on systems thinking approach, we recommend a four different Engagement Strategies, based on the level of interest and influence of the stakeholders.

1. Collaborate with those of high interest and influence:
   - ✓SACCOs and local lenders
   - ✓Commercial banks with rural footprint
   - ✓MFIs and MDIs in rural areas
2. Involve those with high interest but low influence
3. Consult those with high influence but low interest
4. Inform those with low interest and low influence

VALIDATION WORKSHOP HIGHLIGHTS

In August 2022, we hosted a validation and ideation workshop in Kampala, Uganda. Thirty stakeholders attended the workshop activity. These ranged from financiers, farmers, input providers, fintechs, development and government representatives, and other agricultural and sector players.

The objective was to gather the key stakeholders from within the Horticulture industry whom we had interviewed to gather and discuss the key obstacles which Horticulture farmers are facing in Uganda. From these discussions, within breakout groups we were able to validate our findings. This then followed into ideation sessions to brainstorm what possible interventions and solutions could come into play in response to the obstacles discussed.

Hosting a systems workshop is crucial in contributing to the systems thinking approach. It allows thorough validation and re-documentation to take place on the findings made. Equally, it gives the opportunity for a wide range of perspectives and players from within the sector to gather and discuss, enhancing the opportunity for provoking points to be made. Overall, we were pleased to see that the takeaway points made on the day aligned with those of our research, giving an encouraging consistency to opinion within the field on the issues and possible opportunities/solutions.

Key Successes

- ✓The preparation of the workshop was on point: specifically, the preparation of participants, building interest in the topic at hand, and selection of respondents.
- ✓Turnout - wide representation of stakeholders.
- ✓Design of the workshop: it enabled participation, discussion and collection.
- ✓Logistics:
- ✓Venue - worked because it was neutral - managed a wider range of stakeholders. Location was central and allowed flexibility in terms of changing location for a second set of break out sessions.
- ✓Feedback from participants demonstrated that the issues documentation process was thorough. Not many new ideas came in but was more of confirmation/ validation of findings. This speaks to the systems thinking approach which had earlier helped in the documentation.
- ✓Catering to keep energy levels up throughout deliberations
- ✓Having the scribes coming from our team helped document the findings and lead the conversations to the topics, ensuring for a clear internal validation of our documentation.

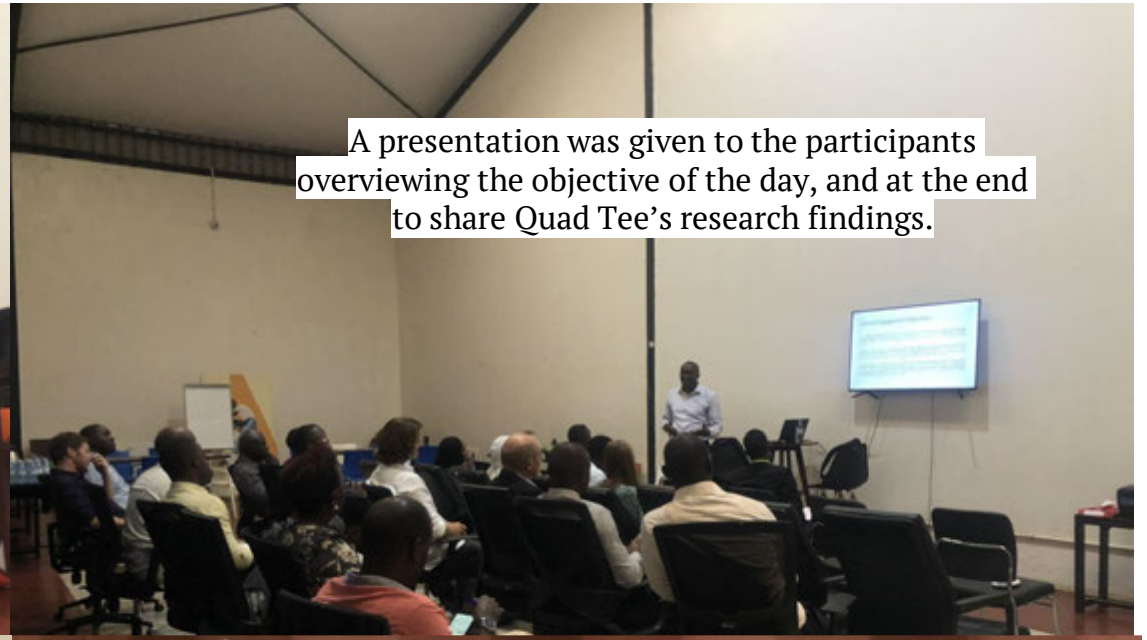
Areas of Improvement

- ❖Run out of time - due to the need of participants to contribute - showing that there was interest. Next time perhaps there is a need to have a longer workshop.
- ❖The structure was created for the need to hear more from the group - whereas participants wanted more to hear and learn from us. Acknowledged the importance of sharing the findings and responses from participants in the thank you note. This should also include the workshop presentation.
- ❖Some members were dominant while others were not able to contribute valuable points: must give people a chance to speak in a round-robin structure. Change direction during discussion.
- ❖Organise the break-out groups before - a need to moderate the insights from some members, due to the risk that some participants may want to overly sell their projects. Some participants were biased by their own interventions or backgrounds: set up participant guidelines to reduce this. Future encourage systems thinking approach to development challenges.

Findings from the validation workshop were incorporated in the report; focus being on critical obstacles to access to finance and possible interventions.

VALIDATION WORKSHOP HIGHLIGHTS

Speaking with an irrigation supplier from Kickstart.



A presentation was given to the participants overviewing the objective of the day, and at the end to share Quad Tee's research findings.

Two breakout sessions took place within two groups to discuss challenges and validate ideas.

Liquid fertilizer from PROTEEN - an input supplier creating organic fertilizer for the horticulture sector.

APPENDIX

- List of stakeholders interviewed
- Bibliography
- Sample Systems Map 1 &2
- Annex- Interventions Design extract attached to this report

QUAD TEE

APPENDIX I: STAKEHOLDERS INTERVIEWED

Financial Service Providers/FinTechs

Eva Karuhanga - Stanbic Bank Uganda
Geoffrey Wanyama & Henry Musisi- Centenary Bank Uganda
Monica Mburu & Francis Ssansa - Equity Bank Uganda
Bram Willem van den Bosch - Emata Uganda
Paul Weiss - Simbuka
George Bakka - Pata Sente
Biira Emmanuel - Mpigi Kwagaliza Farmers SACCO
Serebe Joel - Yanis Financial Services
Timothy Aganya & Stella Akol - DFCU
Mawenda Richard- Vision Fund
Richard Mbusa - Tugende

Smallholder Farmers

A group of individual farmers subscribing to Mpigi DFA farmers - Mpigi District
Nagawa Phoebe - Masaka District
Muhamadi Kiyengo - Masaka District
Wandi Johnbosco Wandi = Masaka District
Magembe Gerald - Masaka District
Kyambadde Samwiri - Masaka District
Mohamed Kigongo - Mukono District
Wafana Yahaya - FLE lead and Pineapple drying, Nazigo, Kayunga District

Off-Takers and Exporters

Hakim Semwogerere - Tropical Dynasty
Konde Frank, Grace Nabaggala, Ben Senkindu (Traders) - Mpigi District
Nicholas Atukwase, Rehema Nakimbugwe: KK Fresh Produce Exporters Ltd
David Wright - Enimiro / Amani Farms

Government

District Local Government -Mpigi Local District
Ministry of Agriculture (MAAIF), (MOFPED), Bank of Uganda (BOU)

Development Partners

Felicity Acan - SOLIDARIDAD Network
Esther Njoroge - FMO-MASSIF Fund management
Annete Bogere - Technoserve HortiMAP
Tim Myles - One Acre Fund

Sector Experts

Martin Fowler - USAID
Delia Dean - Finance consultant and founder
Steve Hodges - Uganda Agribusiness Alliance
Ann Marie Mwaka) aBI Finance
Caroline Wamono -aBi Development
David Wangolo - Pearl Capital Partners

Input Providers

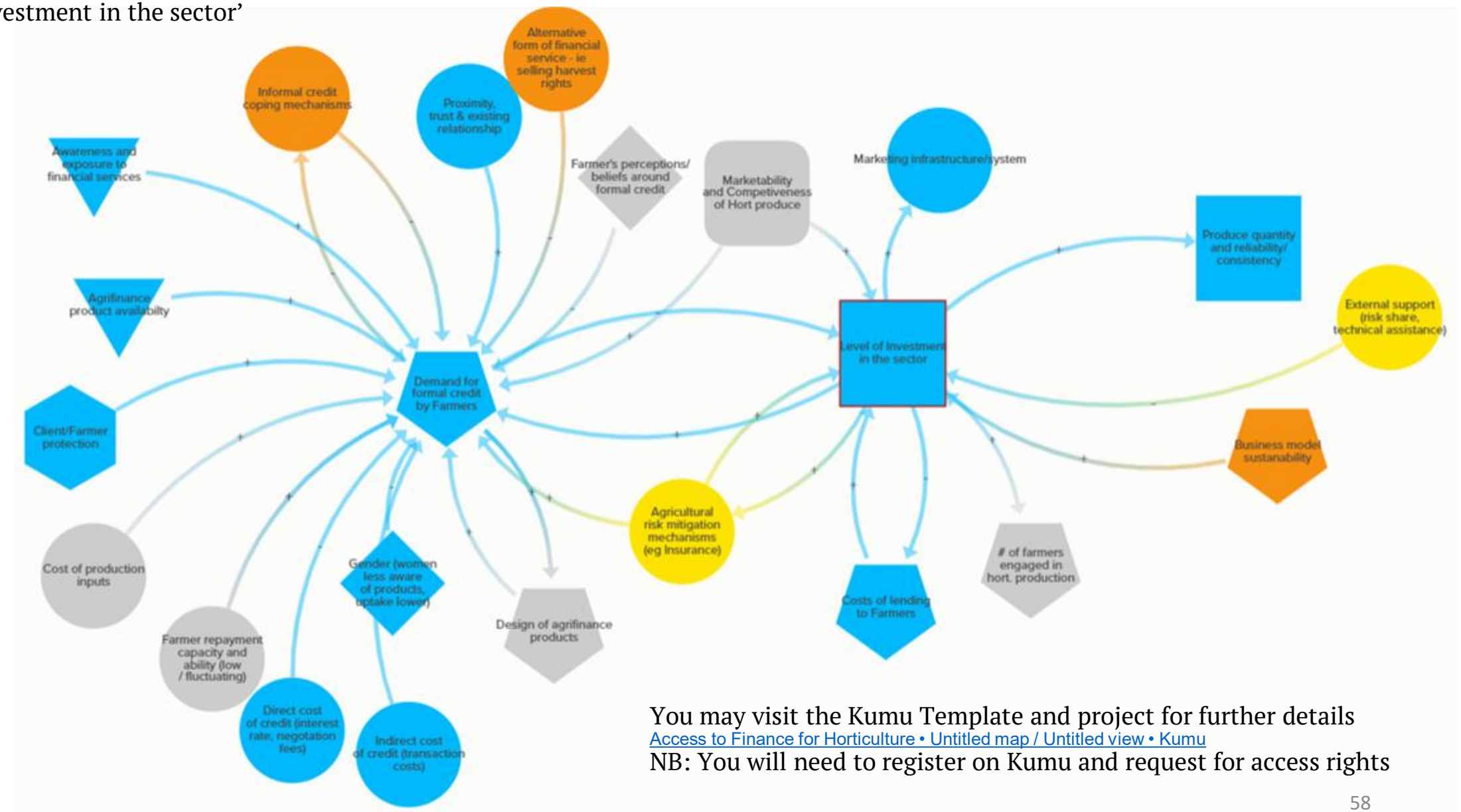
Tommie Hooft - PROTEEN
Seye Ogurotoni - Balton
Mugerwa agro-input dealers - Mpigi
Timothy Wabukoti - Kickstart International
John Mark Muwagula - BioBloom Organic Fertilizer and Ichuli Digital

APPENDIX III: BIBLIOGRAPHY

- aBi Development Limited, Horticulture Investment Feasibility Study (2021), Agribusiness Management Associates.
- Conducting Key Informant Interview in Developing Countries (December 1989), A.I.D. PROGRAM DESIGN AND EVALUATION METHODOLOGY REPORT NO. 13, Krishna Kumar, Senior Analyst (Center for Development Information and Evaluation, A.I.D.) Agency for International Development.
- DIAGNOSTIC REPORT OF THE LEGAL AND REGULATORY LANDSCAPE FOR AGRICULTURAL FINANCE IN UGANDA, September 2019, Ministry of Finance, Planning, and Economic Development
- Horticulture Market Acceleration Program – HortiMA, Revised Inception Report, October 2021, Consortium: TechnoServe, BiD Capital, PUM Netherlands, Wageningen University and Research
- INFLECTION POINT: Unlocking growth in the era of farmer finance, by Laura Goldman, Michael Tsan, Radoslava Dogandjieva, Clara Colina, Sanat Daga, and Virginia Woolworth of Dalberg Global Development Advisors.
- Market Assessment: AGRICULTURAL FINANCE IN NORTHERN UGANDA, NU-TEC FINANCIAL SERVICES, November 2018
- Metabolic (2018) Using Systems Thinking to Transform Society, The European Food System as a Case Study, *Erin Kennedy, Eva Gladek, Gerard Roemers* - Commissioned by WWF Netherlands : Using Systems Thinking to Transform Society - Metabolic
- Metabolic (2020). Natural Ingredients Value Chains in Burkina Faso. Exploring a Systems Thinking Approach. A report commissioned by CBI Netherlands.
- Padeo Systems Approach (2022), Guidebook for Local Consultants, commissioned by the Netherlands Enterprise Agency
- The Uganda vegetables and fruit sector, Wageningen University & Research, *Youri Dijkxhoorn, Michiel van Galen, Julian Barungi, John Okiira, Joyce Gema and Valerie Janssen.*
- USAID Digital, Agriculture Ecosystem, Assessment - Uganda, April 2022, Niras International Consulting

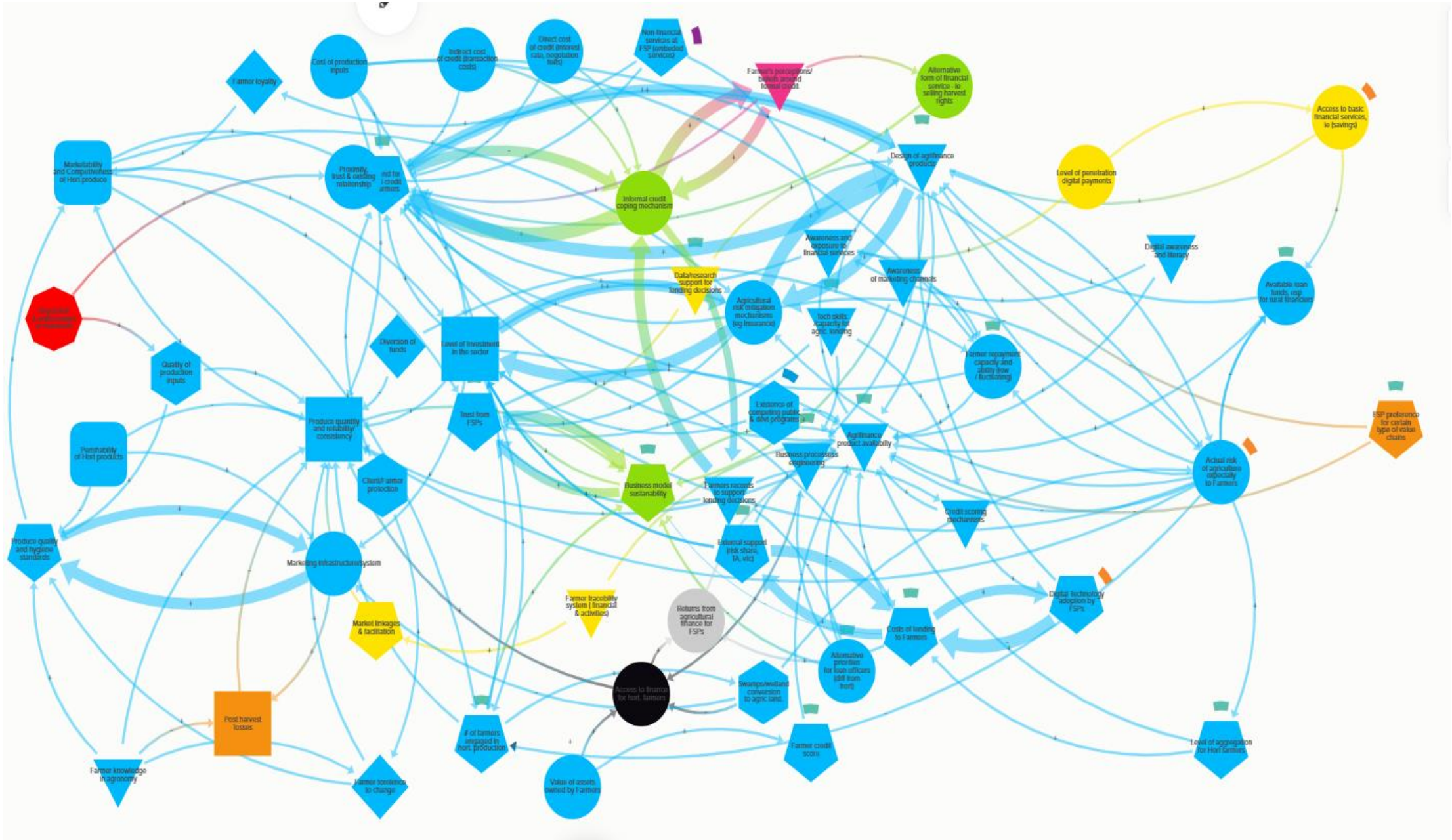
APPENDIX- SAMPLE SYSTEMS MAP 1

Extract of Systems Map - depicting 'Demand for formal Credit by farmers' relative to other important elements such as ' Level of Investment in the sector'



You may visit the Kumu Template and project for further details
Access to Finance for Horticulture • Untitled map / Untitled view • Kumu
NB: You will need to register on Kumu and request for access rights

APPENDIX - SAMPLE SYSTEMS MAP 2



QUAD TEE

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