

Platform for Agricultural Risk Management

Managing risks
to improve farmers'
livelihoods

Tools Assessment



Uganda

Study conducted by



A Public-Private Partnership built on The Finance, Information & Risk Management (FIRM) Model

Feasibility Study on Improving Delivery
of Risk Management Services to Farmers

Concept Note

April 2017



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1. Background

Agriculture is still the mainstay for a large part of the Ugandan population. The sector contributes 70% of the employment in the country. The agricultural sector is, however, at rates below the average GDP growth in Uganda.

The production structure of agriculture in Uganda is dominated by small-scale farmers (90% of the farms), the majority of who own less than 2 acres of land each. Despite good agro-climatic conditions with two rainy seasons in most parts of the country, yields of smallholder farmers remain low. Limited access to quality inputs, finance, and market information, low adoption of modern technology, poor agricultural risk management strategies, and lack of storage and market infrastructure are constraints to the sector.

Both public and private sector have, so far, struggled to address some of the major needs of the farming population. The lack of sustainable services to farmers, such as agricultural credit, market information, insurance, holds agriculture back. This report analyzes key constraints for growth in the agricultural sector in Uganda and present an innovative approach to address some of the key challenges, in particular access to information, finance, and risk management tools in order to leverage investment in the agricultural sector.

The Platform for Agricultural Risk Management (PARM) is working on strategic partnership with NEPAD and the Government of Uganda to mainstream agricultural risk management in the country. This study proposes to build a public private partnership (PPP) starting from a private initiative called the Finance, Information & Risk Management (FIRM) Model led by FIT Uganda. This broader PPP will enhance the delivery of new risk management and finance services to farmers, and the provision of externalities and public goods associated with better access to information and tools for managing agricultural risks, and the creation of new capacities on agricultural risk management and related advisory services.

2. Problem Analysis – Lack of Services for Farmers

UBOS estimates that out of a total population of 19.3 million people in 2010, the number of agricultural households was at 3.95 million. 79% of farming households were male headed and 21% female headed. Ugandan farmers are can be divided into three major categories: subsistence/small scale, medium, and large. The current production structure of agriculture in Uganda is dominated by small-scale farmers comprising of an estimated 2.5 million households.

Uganda has significantly lower on-farm crop and livestock yields than on-station yields in spite of an excellent agro-climatic environment (yields on research stations are 2 to 5 times higher than farm yields). One key reason for the low output is the low investment in agricultural production. Farmer rely on self-propagated seeds and use poor and outdated technologies, both in production and storage. 92% of farmers depend on local seed as the main planting material. 96% of farming households still rely on the hand hoe as the source of farm power. A key problem is that agriculture is not run as a proper business by a majority of farmers.

The lack of large-scale adoption and efficient utilization of appropriate technologies by farmers is not only due to limited knowledge by farmers but also to the difficulty to access credit to purchase high-value inputs and production means. Only 9.1% of the agricultural households have accessed credit in the past. Financial Institutions (FI) are reluctant to finance agriculture due to three challenges: the high credit risk of individual farmers, the high systematic risks all farmers are exposed to (like droughts), and the high operational costs to service the sector. Consequently, FIs require high interest rates which do not match the current returns on investment (ROI) most farmers generate. Without further innovation, the agricultural sector remains in a credit deadlock.

The low productivity and high risk exposure make smallholder farmers an unattractive target for financial institutions (FIs). Smallholder farmers have very little means to manage their own risks as providers of risk management services rarely reach out to smallholder farmers. There is a vicious cycle in that farmers do not get access to credit due to their high risk exposure: either FI find it too risky to lend, or the farmers themselves do not engage in borrowing because they are not able to manage the risks. Without credit farmers are not able to finance risk management measures (such as irrigation, improved technology and inputs). In addition, farmers cannot transfer some of their risk to the insurance sector as insurers have difficulties to reach out to smallholder farmers in a cost-effective manner.

Access to information is another challenge. The most important source of agricultural information for farmers is from radio and farmer to farmer communication. In the most recent agricultural census, radio was the main source of information on weather (85%), farm machinery (44%) and credit (50%), whereas farmer to farmer



communication was the major source of information on crop varieties (43%), new farming methods (40%), diseases and pests (45%) and agricultural market information (51%). Due to budget restrictions and logistical challenges the public sector has not been in position to provide farmers with market information. In recent years several private sector companies have entered the market for information services for farmers. But the cost of collecting and analysing data, and to provide information to farmers is high compared to income stream that can be derived from providing farmers with SMS containing information they require. Therefore, the business proposition of providing only information services to farmers is not viable for the private sector. But without market information farmers are not aware of market opportunities and often sell to middlemen at low farm-gate prices.

Smallholder farmers store a large portion of their produce at home due to poor transport system to the markets and the lack of sufficient storage capacity for their produce in the trading system. Storage of produce at home, often on the floor of their own homes, leads to average harvest losses of 17 to 25% for maize, of 1 to 24% for millet, rice and, sorghum, and to 12 to 13% for wheat and barley.

A cross-cutting issue is the lack of knowledge and capacity of farmers. The extension services have failed in recent years to support farmers in developing viable farm businesses. Farmers need support to develop farm records (that allow them to access finance), to identify investment needs on their farms (to reduce risk exposure and to increase productivity), and to understand and harness business opportunities, including ways to manage the corresponding risks. These support functions have not been carried out by the agricultural extension system in Uganda and the private sector has not yet developed extension models that can be operated in a profitable manner.

All these causes have led to a problematic situation where smallholder farmers are left in a poverty trap: the lack of access to finance, information, and other services such as risk management keep productivity and revenue low and lead to high losses due to weather risks, poor storage, etc. Poor smallholder farmers are not able to meet all the expenses of their families for food, health, and education. The following graph summarizes the causes and effects of poverty for smallholders in Uganda.

This analysis shows that many challenges of farmers are inter-related: for example, the lack of proper documentation and the difficulty for financial institutions to access farmers in rural areas, prevents farmers from accessing credit; this lack of funding means that farmers continue to rely on home-grown seeds that lead to low productivity and high risk exposure. The risk exposure, in turn, is another reason why financial institutions are reluctant to finance farmers and farmers are reluctant to borrow from FI. In order to help farmers to lift themselves out of poverty, a model has to be designed that is able to tackle different challenges at the same time and in a viable manner.

3. The Solution - Delivery of an Integrated Service Package of Finance, Information, and Risk Management (FIRM)

The proposed solution for the problems listed in the previous chapter is to develop a business model for an integrated platform linking farmers, traders, financial institutions, and risk management service providers. On the basis of this platform a range of services can be offered, mainly Finance, Information, and Risk Management (FIRM). These services are key to tackle the root causes of farmers' poverty in Uganda. By applying a holistic approach to service delivery in rural areas, a range of constraints for growth can be addressed simultaneously.

At the core of FIRM is an information platform provided by FIT Uganda. On this platform all users receive access to information against a fee. The FIRM project focuses on the further development this platform (already hosting FIT Uganda's Infotrade Premier and Markets System) and adds additional services, such as access to risk assessment, finance, knowledge, insurance, and other risk management tools. In the FIRM approach, financial institutions, insurers, and other service providers are linked to the platform to identify customers. The FIRM model also fosters financial inclusion by providing its farmers with a debit card that allows for cash-less transactions; through this debit card farmers are also able to build up financial records which can be used during credit appraisal.

As an information broker, FIT Uganda is well positioned to manage this system. FIT Uganda's Infotrade platform collects information from farmers on agronomic activity and marketing, weather as well as price information. The Infotrade system encourages farmers to keep records and to base their business decisions on improved planning and record keeping by farmers.

The objective is to create a market driven platform that is beneficial for a broad range of stakeholders, ranging from farmers, to private sector, and public sector:



1. **Farmers** receive knowhow and information (on weather, markets, etc.) required to grow their business; FIT Uganda supports farmers to develop farm handbooks that allow them to access credit. The FIRM model include a risk appraisal tool (Agri Risk Analyzer) that allows farmers to understand their risk exposure and to define their investment needs based on the risk assessment. The FIRM platform also allows other service providers (e.g. insurers) to access a potential new client base.
2. **Financial institutions** gain access to a pool of farmers that has a commercial orientation and is able to provide information required to access credit. The in-built risk appraisal service of FIRM allows financial institutions to get a better understanding of the risk exposure of potential customers. By using the FIRM platform, financial institutions can keep the distribution cost low.
3. **Insurance companies** and other service providers for risk management (such as irrigation equipment providers) also gain access to a large number of potential customers at a very low cost. Service providers can tailor their offers to farmers based on the risk exposure identified through the risk appraisal tool.
4. **Public sector** can make use of the FIRM platform to deliver public services, such as the provision of knowledge and information. FIRM operators and extension officer can team up to deliver services to farmers in a cost-efficient manner. In addition, the Government of Uganda can make use of the results of risk assessments on village level to support the community investment in storage facilities or irrigation.

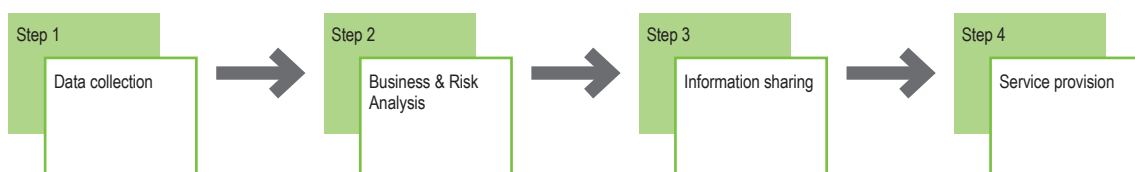
This system creates an upward spiral: farmers can take informed decisions based on sound information on the markets and the risks they are exposed to. Farmers are encouraged to invest more and to actively manage their risks. This risk reduction makes farmers more willing to borrow and more attractive to financial institutions. The FIRM platform also keeps acquisition and distribution cost low for financial institutions. The newly accessed agricultural credit can be used by farmers to increase productivity, lower risk exposure, and improve their market position.

Compared to existing models to reach out to farmers with various services, the FIRM model integrates three major innovations in its platform:

1. Creation of a unified platform to deliver finance, information, and risk management: The integration of farming information, risk analysis, access to financial services and access to providers of risk solutions, on the backbone of a rural mobile trading and payment solution is unique for Uganda;
2. Use of innovative technology to foster financial inclusion: FIRM works with mobile network operators and Interswitch to create a unique alternative payment solution in rural areas and to enable the use of debit cards;
3. Integration of risk appraisal technology to direct investment and access credit: The Agri Risk Analyzer (ARA) is a new propriety tool for analyzing risks of farmers. The model is based on cash flow analysis at farm and household level as used by many financial institutions. The ARA looks at both systematic risks (droughts, etc.) and idiosyncratic risk (health and life). The tool also calculates the ROI of risk mitigation (like irrigation) to support farmers' and bankers' decisions on how to apply their funds. Such a tool goes steps further than traditional credit scoring methodologies, which solely rely on historical data (often unavailable in agriculture).

3.1. The FIRM process

FIRM uses a 4 step process that consists of (1) farmer enrolment and data collection, (2) preparation of farm handbooks and risk appraisal, (3) analysis of data and dissemination of analysis to different target audiences, and (4) delivery of various services (e.g. credit, insurance).



3.1.1. Step 1: Farmer enrolment and data collection

FIT Uganda enrolls farmers in the FIRM program. Farmers share their information on their personal situation, their business and their financials. They also obtain an FIT Uganda debit card which allows them to conduct transactions. The whole process is facilitated by local Production Information Advisors (PIA). Each PIA covers approximately 300 farmers.

The enrolled farmers are assisted to develop basic farm handbooks and to analyze their farm business. At the same time FIRM collects the following data in a structured and uniform way:

1. Farming data (e.g. crops, land size, input & operational costs)
2. Household data (e.g. family size, household expenditure)
3. Financial position (e.g. savings, collateral, outstanding loans)
4. Risk data (e.g. use of irrigation, insurance, improved inputs)

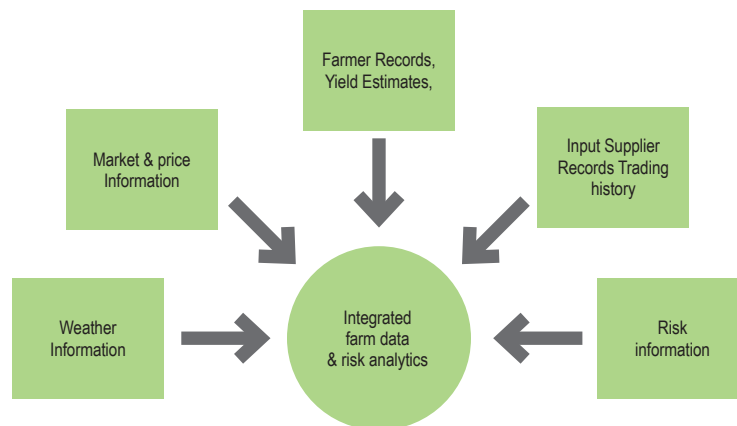
3.1.2. Step 2: Business and risk analysis

The information provided by farmers is scrutinized by FIT Uganda. All the data collected from the farmers is analyzed on the basis of the Agri Risk Analyzer.

The ARA processes the data and calculates:

1. A risk score (1-5 scale) indicating the risk exposure of the farmer
2. A sensitivity analysis providing how different risks contributes to the total risk
3. An overview (ordering) of most effective and efficient risk mitigation options, like insurance, irrigation or improved inputs.

The FIRM model uses data collected from farmers as well as market, price, and weather information that is systematically collected and analyzed by FIT Uganda. All the different data sources are used to perform an integrated farm data and risk analysis:

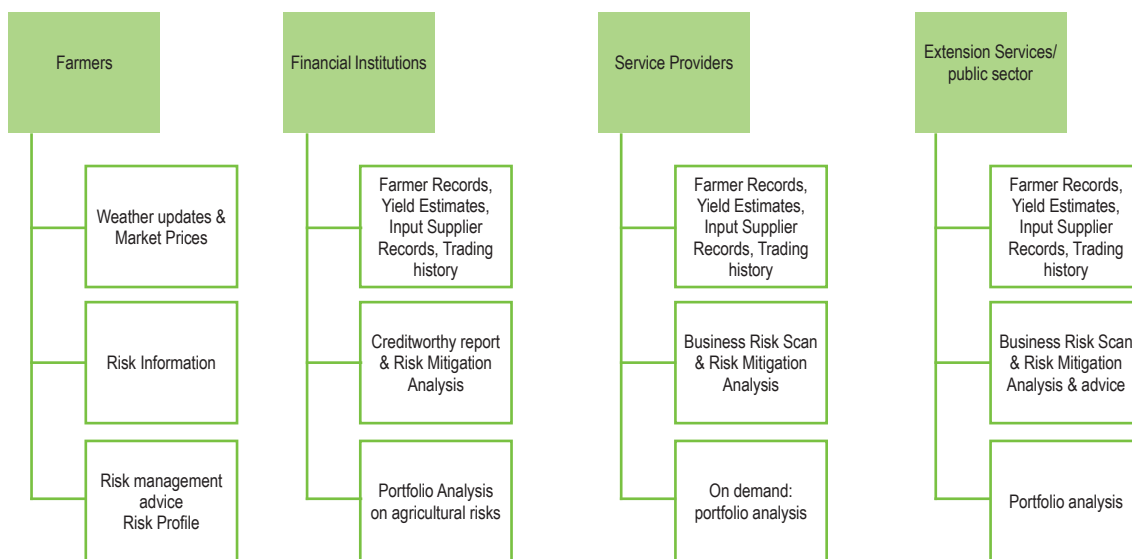


The Agri Risk Analyzer conducts a risk assessment which delivers a risk profile of the farmer. The information is now shared with the farmers and the business partners, who are part of the FIT Uganda transaction platform. The (risk) information will be used by partners to select viable customers and farmers to define risk management and business strategies that suit their needs. Banks, for example, will select those farmers with a relative high credit risk score. Insurance companies will select farmers of which the profile indicate that they are exposed to a hazard which can be insured (e.g. drought). Providers of irrigation equipment or improved seed will also look for farmers of which the risk profile indicate that the farmer might benefit from their products.

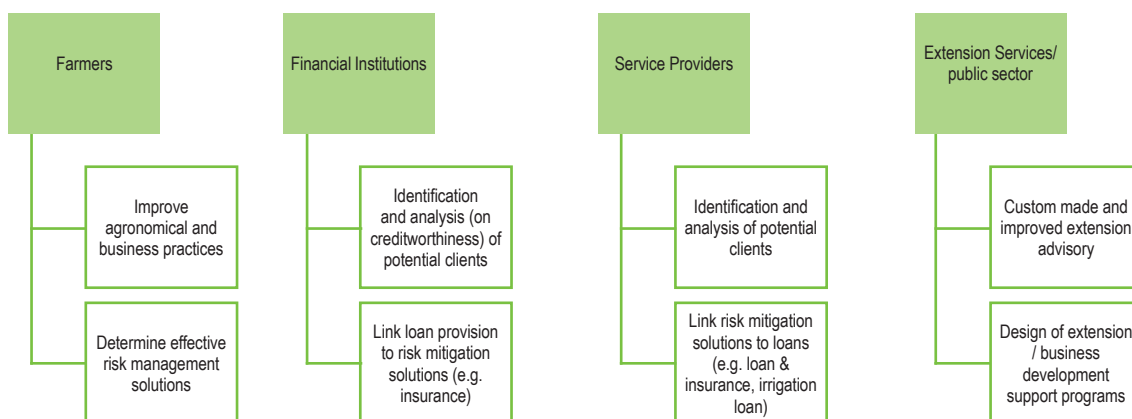
3.1.3. Step 3: Information sharing

The results from the data and risk analysis are processed to provide information to the different stakeholders.

- a. Farmers receive feedback on their business performance and receive advice on what type of services (e.g. credit, insurance, other risk management tools) may provide them with good returns.
- b. Financial institutions receive packaged and risk screened information on potential customers.
- c. Other service providers, e.g. insurers, also receive processed information that allows them to identify business potential.
- d. Lastly, public sector institutions and extension services receive information on key challenges of farmers in specific locations; based on this information extension officer can design their support to farmers.



The different stakeholders can use the information received to improve their farm business (farmers) or provide tailor made services to farmers (financial institutions, insurers, extension services, etc.):



3.1.4. Step 4: Service provision

Lastly, based on information received, FIRM stakeholders can offer services to farmers in a cost efficient manner using the data platform of FIRM that has developed profiles of all participating farmers. The physical and IT infrastructure of FIT Uganda and local PIA can be leveraged to reach out to farmers.

Based on the opportunities identified the business partners (financial institutions, insurers, and others) will approach the farmer with tailor made propositions. The transactions can be settled on the FIT Uganda platform. Farmers can buy inputs and sell their produce with their Debit Card. At relevant agro dealer shops, buyers' stations and other locations Point of Sales (POS) terminals are installed operated by a Local Money Agent. The POS terminals settle the transactions and are linked to mobile phones. Partners like financial institutions and insurance companies can distribute their products via the Debit Card as well.

FIT Uganda itself provides farmers with weather updates (free Infotrade Basic service), farm management advice and a risk scan (*Infotrade Premier service*), market information, linkage to business partners, and payment processing (*Infotrade Markets service*). All these services are paid for through subscription fees from farmers.

Besides the technical support farmers receive from the Production Information Advisors (PIA), FIRM connects farmers to extension programs and NGOs who can use the profiles to fine-tune their efforts or develop new programs.

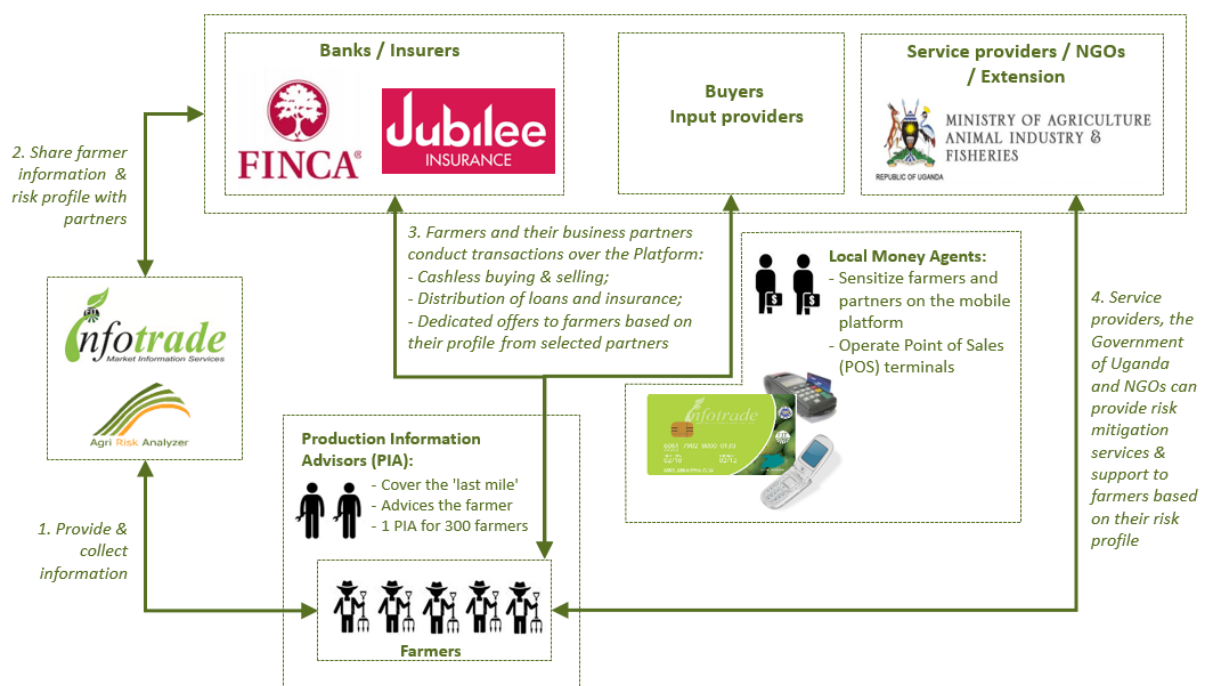
4. Structure of FIRM

4.1. The FIRM Partners

FIRM is a collaborative effort that brings together private and public sector. The main FIRM contributors are:

- FIT Uganda as home of FIRM and information service provider
- Agri Risks as developer of the ARA and support for risk analytics
- FINCA Uganda as providers of agricultural credit
- Jubilee Insurance as provider of agricultural insurance
- Ministry for Agriculture, Animal Industries and Fisheries (MAAIF) as provider of extension services
- Makerere University as knowledge partner and trainer of extension workers and other FIRM partners

FIRM is designed as an open platform that can accommodate additional partners. The following graph shows the different partners of FIRM and their role in the system:



4.2. Institutional Set-Up

FIRM is housed in FIT Uganda. Strategic management of FIRM is conducted by a Steering Committee that consists of the FIRM developers, FIT Uganda and Agri Risk Analyzer, as well as all sponsors of FIRM. The Steering Committee meets on a quarterly basis.

The Steering Committee is supported by an Advisory Committee that includes all stakeholders in the FIRM process. The Advisory Committee is a sounding board for the Steering Committee to discuss future development of FIRM. The advisory committee with members from financial sector, insurance sector, Interswitch, farmers' representatives, MAAIF and Makerere University meets twice a year. In this committee members of the private and public sector discuss the strategic development of the PPP.

The public component of the Public Private Partnership associated with FIRM (FIRM-PPP) will have its own institutional set up with the appropriate institutions such as the directorate for extension services of MAAIF and Makerere University and fully coordinated with the FIRM set up. The exact shape of this coordination set up will be determined in a later stage.

FIRM day-to-day operations are carried out by the FIRM Program Manager of FIT Uganda. The program manager heads the FIRM team at Infotrade and coordinates the PIAs spread over the country. The following flowchart shows the organizational structure of FIRM:



4.3. The Role of FIRM Partners

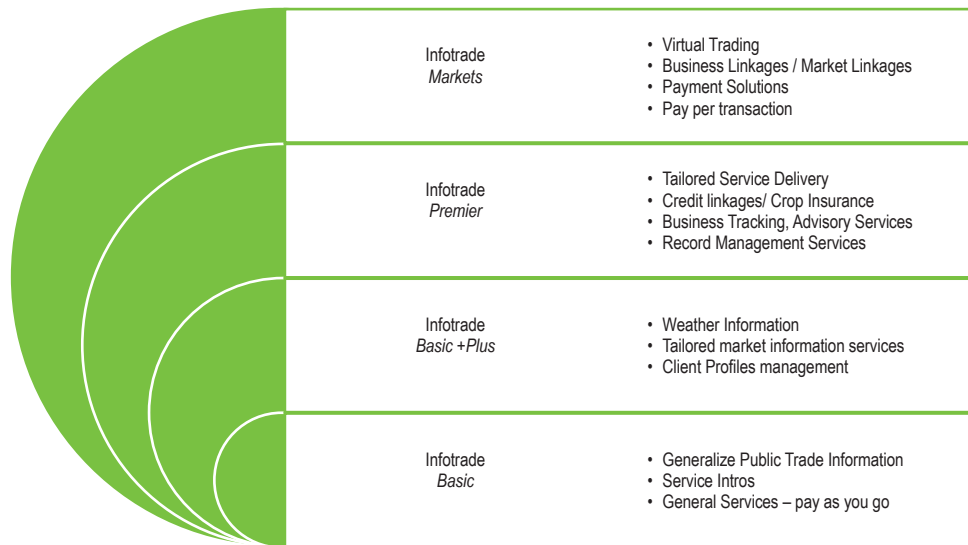
4.3.1. Information services - FIT Uganda

FIT Uganda (a.k.a. Infotrade) has over 18 years of experience in providing business development services in Uganda. FIT's main proposition is market information services and the mapping and profiling of farmers, traders and services providers. FIT Uganda Ltd has 17 staff members.

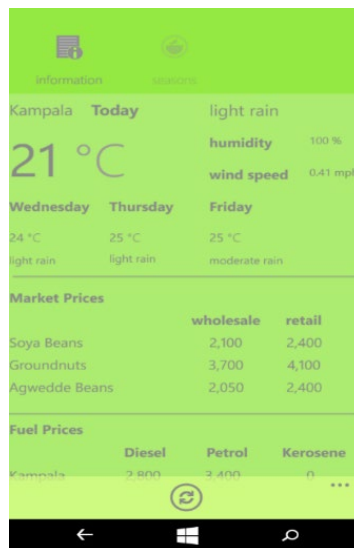
The FIT Uganda proposition is:

- Infotrade Basic: an online platform that aggregates and disseminates price information from 35 districts for 46 Agricultural products;
- Infotrade Premier: offers the FARMIS application (Farmer Record Management System) that enables collection of farmer data such as biometric data, land ownership, baseline data, production records, trade data, etc.;
- Infotrade Markets: a trade and payment system which enables trading and linkage to finance and other services. The service enables electronic payment in the rural areas. Each of the farmer on the system obtains a free online account for trading. Two FI are currently part of the system: FINCA and Postbank.

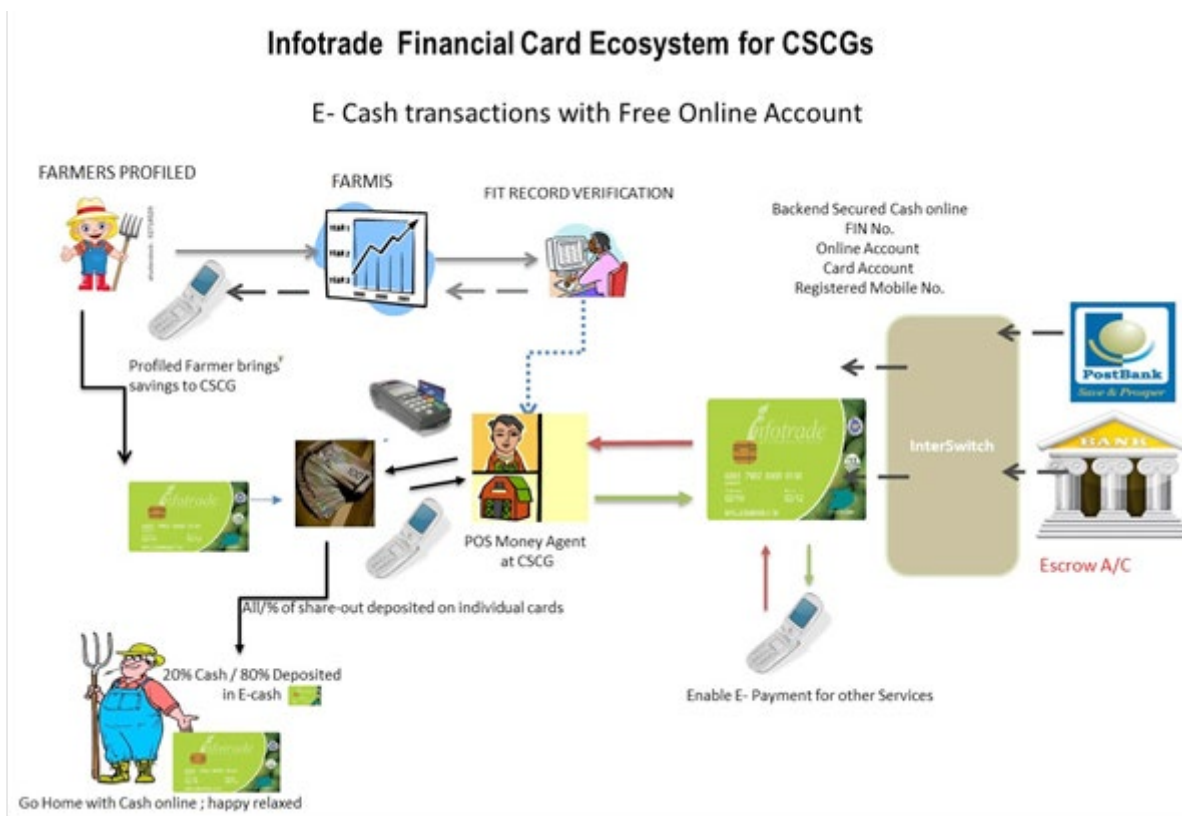
FIT Uganda is ISO Certified 9001:2008. It offers Agricultural Market Information Services (price data, weather information, farm tips and market alerts) for over ten years using SMS, Voice and Text. FIT has long standing history in reaching out to farmers working with radio station for information dissemination and also built a track record of generating third party income from the products and services promoted. Its strategic partnership with payment gateways and creation of a farmer's debit card are recent add-ons that position the current as an innovator in the delivery of services to the farmers/ traders. The following graph shows the current business proposition of FIT Uganda's services:



Infotrade services can be accessed via mobile phone. In 2014, 52.4 mobile phones were recorded per 100 people. Production Information Advisors (PIAs) close to the farmers ensure that technical support is provided and that additional information can be relied in fast and efficient manner to customers. The following graph shows the Infotrade interface for smartphone users.



On top of these information services FIT Uganda will provide farmers with a range of additional services as part of the FIRM model: developing farm business records, analyzing risk exposure, and linking farmers with services providers such as FIs, insurers, or others. FIT Uganda also provides farmers with access to other financial services through its Infotrade Maali Card for farmer/trader card programme. The model involves the use of a financial transaction platform powered by Interswitch and is integrated with farmer identification profiles that are collected as part of FIRM. Maali Card is a pre-paid debit card with a complete end-to-end technology platform. The card provides the opportunity for farmers as well as traders to store, save, receive, send, and spend money electronically. This technology allows users to both save cost and time in their financial transactions. The card will eventually replace the use of cash boxes or pots in the villages. Through this systems farmers and traders can make e-card deposits through the POS money agent or mobile money using USSD Technology. The following graph shows the working modality of the *Maali* Card system:



4.3.2. Business and risk analysis - The Agri Risk Analyzer

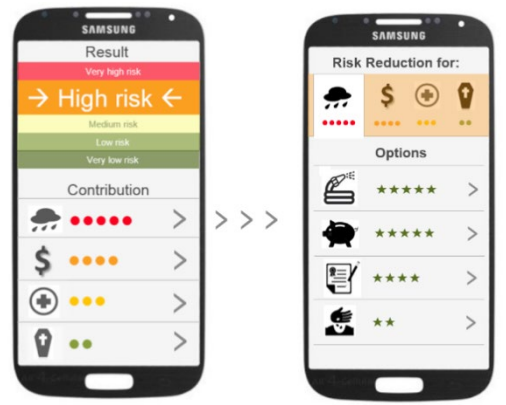
Agri Risks, a company headquartered in the Netherlands, has developed the Agri Risk Analyzer. This is a low-cost, easy-to-use risk-assessment tool for farmers, agribusinesses and financial institutions, which provides insight into their systematic risk exposure. These risks are related to weather risks, pest-&-diseases and price risks. The tool also calculates (individual) health and life risks. The Agri Risk Analyzer provides an assessment of the total risk and gives a breakdown of the risk into its components. This is based on a farmers' cash flow statement and is similar to cash flow analysis Financial Institutions are used to within their credit process. The Agri Risk Analyzer also provides insight in which risk management solutions are the most efficient to reduce risk. It enables evidence-based decisions on risk mitigation (e.g. irrigation, improved seeds) and risk transfer (e.g. insurance).

The Agri Risk Analyzer (ARA) is designed to provide insight in the systematic risks of farmers and farmer groups. The ARA assesses the famers' exposure to the major systematic risks in agriculture¹.

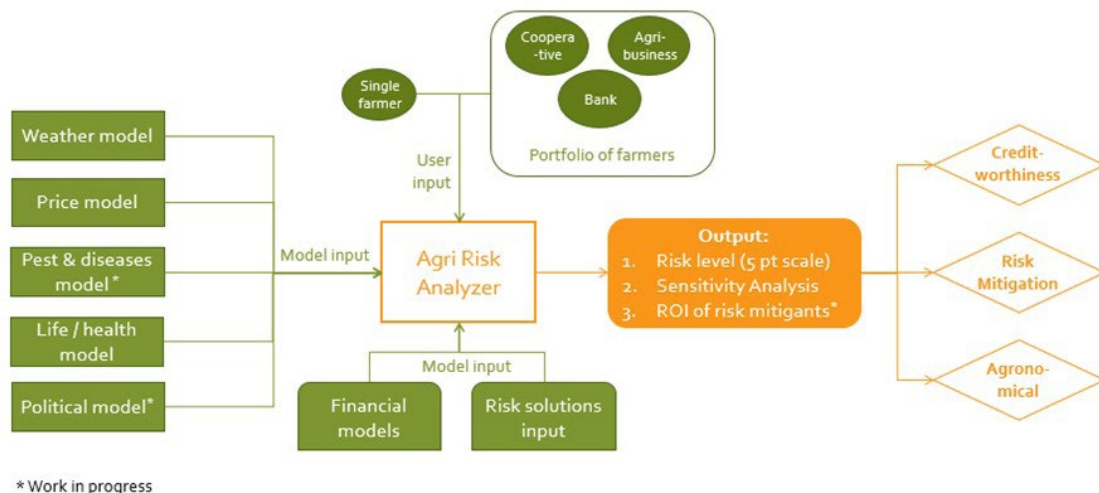
The risk indicator provides:

- The risk level of a farmer on a 5-point scale;
- A decomposition of this risk into its sub components (weather risk, price risk, etc.);
- An overview on available risk mitigation solutions for each risk component and the costs and benefits associated with each tool.

¹ The current release of the Agri Risk Analyzer covers weather related risks (droughts, excessive rainfall, temperature), market related risk (price, forex, inflation, interest) and health and life risks. The models are developed but data (e.g. historical weather data) for Uganda has still to be acquired. Pest and diseases risk will be developed in partnership with Makerere University. A partnership with a knowledge partner for political risk has to be developed.



The Agri Risk Analyzer is modelling the farmers' cash flow in a similar fashion as financial institutions normally do. Cash flow analysis is commonly based on assumptions, such as expected yield, expected prices and expected household expenditures and income. The ARA is analyzing what happens to the farmers' cash flow when these assumptions are not met. This is done with Monte Carlo simulation, which generates a probability distribution of the expected cash flow by simulating different scenarios. The simulations are based on actuarial or market based models for weather events, market events, etc., which are used by other professional parties like insurance companies, market traders, etc. In total, 10,000 scenarios are calculated which delivers a distribution of expected cash flow of the farmer. The figure below provides an overview of the inputs / outputs of the model.



The model provides three outcomes:

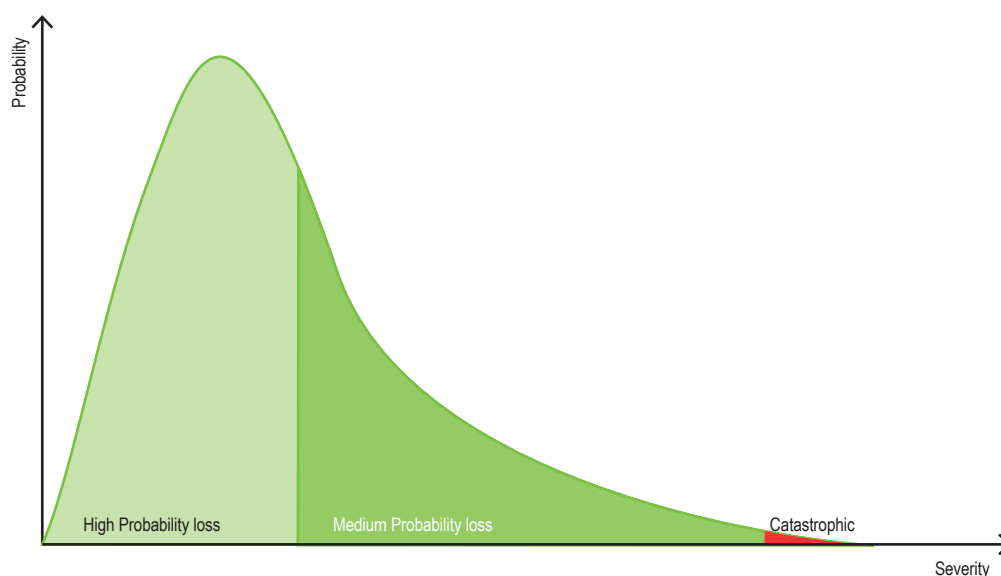
- *Risk level.* Depending on the objectives of the user, the ARA defines a level of cash flow which is seen as the 'point of default'. At this point of default, the farmer is assumed to default on a loan, or default on a delivery contract, or default on him/herself by not able to cover the costs of household expenditures, etc. With the calculated cash flow distribution, the ARA is able to provide what the 'distance to default' of the farmer is. This distance to default is translated to a Probability of Default (PD) which is useful for financial institutions and translated to the 5-point scale risk level, which is useful for more simple interpretations;
- *Sensitivity analysis.* Based on the software used by the Agri Risk Analyzer, a sensitivity analysis is made. The software produces the correlations between the overall calculations of the cash flow distribution and the underlying components (sub risks): the yield variability, price variability, etc. The correlations provide the inputs for a sensitivity score of each sub risk. The ARA identifies the main sources of risk and the scenarios that can threaten the sustainability of the farm.

- *Risk solutions.* The model contains basic data about certain risk mitigation solutions, like irrigation. The model knows the cost (investment + operational costs) and expected benefit of the solution. These parameters are factored into the simulation. The simulation is run with and without the solution. The comparison of results is the key metric to make a return on investment (ROI) analysis.

These outcomes will be the main basis for providing agricultural risk management advice to farmers and FIs. The advice to farmers will be complemented with the work of the advisors and extension services in order to empower farmers to interpret the results and design a full risk management strategy and plan that considers all kinds of risk management tools from diversification and improved seeds to insurance and finance.

The ARA decomposes the risk into different layers that help farmers to understand which risk management solutions are most useful to them. For example, by looking at severity and frequency of events, the ARA is able to determine if and what type of insurance may benefit a farmer. A quick ROI analysis is made, based on the expected cashflow of the farmer, the expected cost and payout of available insurance policies and alternative available risk mitigation sources like financial buffers or drought resistant seeds. Based on these inputs the ARA calculates whether insurance is a suitable risk management option for the farmer and evaluates alternatives as well. The outcome is a ranking of preferred risk mitigation solutions.

For high probability, low impact events farm level solutions are most appropriate. Other risk transfer measures (financed through agricultural credit and insurance) are usually a better approach when risks have a medium probability and severity. Low probability, high impact event (for example, droughts) are difficult to avoid by farmers individually and are also hard to insure, particularly if they are systemic.



4.3.3. Agricultural Credit - FINCA

FINCA is a regulated deposit taking microfinance institution. Their current customer base stands at over 150,000 savings clients (total portfolio USD 21m), and 55,000 loan clients with a loan portfolio in excess USD 28m.

FINCA Uganda offers savings, loans and money transfers across a network of 29 branches countrywide. FINCA has over 650 employees. FINCA is continuously focused on refining key aspects of their business and focus on customer centricity. This has resulted in strong and sustained growth in portfolio and outreach. While FINCA Uganda has made great strides in providing agricultural financing, they are committed to going to the extra mile to not just increase the number of borrowers and locations where clients can access loans, and also to increase the quality, efficiency and speed with which they can be accessed and used for productive purposes. FINCA will also focus on an emerging and important segment in the agricultural space, especially youth agricultural entrepreneurs.



The role of FINCA is the provision of agricultural credit. The microfinance deposit-accepting institution (MDI) receives processed information of prospective customers in rural areas. Based on the ARA generated risk assessment the institution can make an informed decision on extending loans to farmers. The integration into the FIRM value chain provides several advantages to the financial institution: lower cost of accessing customers, established relationship of trust through FIRM network, well prepared farm business information, and use of information platform.

4.3.4. Agricultural Insurance - Jubilee Insurance Company

Jubilee Insurance Company is a subsidiary of the largest insurance group in East Africa, Jubilee Holdings Ltd. with operations in Uganda, Kenya, Tanzania, Mauritius and Burundi. Jubilee is an affiliate of the Aga Khan Development Network and the oldest (since 1937) composite insurance provider in East Africa. Jubilee has ISO 9001 certification and is rated AA- by Global Credit Rating Co.

Jubilee offers all classes of term insurance businesses, including health insurance (J-CARE). In agricultural insurance Jubilee offers multi-peril crop insurance, livestock, greenhouses and poultry insurance. The crop insurance covers multiple perils such as drought, pests and diseases, hailstones damage, flooding and windstorms.

Based on information generated through FIRM Jubilee Insurance has the opportunity to identify prospective customers for its products and to use the FIRM structure to approach these farmers, potentially even in conjunction with the provider of agricultural credit FINCA. Jubilee can make use of the FIRM distribution channel to not only sell agricultural insurance but other products as well, e.g. health insurance.

Agricultural insurance is currently on the rise in Uganda and the public sector has intensified its efforts to support this development. For the fiscal year 2016/17 UGX 5 billion has been allocated for subsidizing agricultural insurance and the same amount is foreseen for 2017/18. On the back of this development, the provision of agricultural insurance will become more affordable to farmers and the provision of this service strengthens the value proposition of FIRM.

4.3.5. Extension services - Ministry of Agriculture, Animal Industries, and Fisheries (MAAIF)

MAAIF's functions are derived from the constitution of the Republic of Uganda, the Local Governments Act (1997), and the Public Service reform Programme (PSRP). The role of the ministry is to create an enabling environment in the agricultural sector by enhancing crop production and productivity, in a sustainable and environmentally safe manner, for improved food and nutrition security, employment, widened export base and improved incomes of the farmers.

A major role of the ministry is to provide advisory services to farmers as outline in the National Agricultural Extension Strategy 2016. The extension system has undergone many changes in recent years and has, effectively, been dismantled in 2015. MAAIF is currently in the process of hiring extension officers.

In the FIRM model advisory services to farmers play an important role. The FIRM PIA play an important role in providing farmers with the technical knowhow on various topics: developing farm handbooks, the importance of information services, the access to credit and insurance, the assessment of farm risks etc. There is, however, the need to further strengthen the capacity of farmers in many other areas, for example related to farm management practices, pest and disease management, etc. For these tasks the public sector has to take a leading role through its extension services. Extension officers that are trained by Makerere University will work hand-in-hand to ensure that farmers receive access to the knowledge and services they require. In order to allow extension officers to provide farmers with practical advice on how to manage their risk, capacity development courses on ARM are specifically targeted to this group of professionals (see also next paragraph on capacity development by Makerere University).

4.3.6. Capacity development - Makerere University

The College of Agricultural and Environmental Sciences (CAES) is one of the 9 academic units of Makerere University, which is dedicated to advancing agricultural development through research, training, and service delivery in Uganda and the in East African region. The College offers undergraduate and postgraduate programs in Agricultural, Forestry, Environmental and Geographical Sciences, Food Technology, Nutrition and Bioengineering and Agribusiness Management. Through strong laboratory and field-based research programs, the College generates technology and identifies innovative approaches for improving agricultural production and ensuring positive changes in farmers' livelihoods.



CAES is in the process of developing a short training course on ARM. This training course is not only aimed at graduate students of Makerere University but is open also for extension staff and other services providers that are part of the FIRM model (e.g. financial institutions, insurers, etc.) as well as FIRM PIAs. Building up the capacity of extension officers is particularly important to ensure that farmers receive up-to-date knowhow on how to manage the many risk they are facing and to learn what risk management tools (information, finance, etc.) are available to them. The use of FIRM tools such as ARA is envisaged as part of the training.

CEAS will also have an important role in the further development of the Agri Risk Analyzer, especially in constructing a pest & disease module for Uganda. With students of the faculty field work will be done to collect data, e.g. on yields and risk mitigation solutions.

5. Technical Feasibility

5.1. Implementation modality

FIT Uganda collaborates with Production Information Advisors (PIAs). Each PIA provides training to at least 300 farmers in profiling, book keeping, saving, credits services and money transfers. FIRM will also provide custom made risk management trainings for farmers, extension officers, FI's and insurers. With support from IFAD, Makerere University is developing a short training course on ARM that is available also to the partners of this project (e.g. extension officers).

Farmers will be enabled to identify their risk profile and get insight in the viable solutions to mitigate that risk. FI will learn more about the impact of systematic risks onto the risk profile of one single borrower and on an agricultural portfolio. They will also be encouraged to design risk solutions into their credit process (e.g. combine loans with insurance). Service providers will learn about the risk factors farmers are exposed to and how their service contributes to the solution, which potentially can spark further product innovation.

FIRM will mobilize new farmers by Production Information Advisors. Through this agent model, FIRM links farmers directly with credit and insurance providers. In order to raise awareness, FIT Uganda will start a marketing campaign to subscribe farmers for Infotrade services. Farmers are reached directly via mobile phones (SMS text and voice messages), radio (12 FM radio stations), printed media, and word of mouth via local leaders and extension networks. Another outreach strategy is through cooperatives, farmer association and companies with outgrower schemes. In addition, marketing efforts will also make use of trainers, agents of mobile money, and FINCA's credit officers. Once farmers are users of the Infotrade services, the main distribution channels are the FIT Uganda websites and farmers can be reached on their mobile phones.

5.2. Technical skills and human resources

The FIRM consortium brings together expertise on data collection and dissemination, (credit) risk expertise, financial services, insurance and agronomical expertise. The lead partner, FIT Uganda, has been in business in rural areas for over 18 years. This project will build upon existing services, which are supported by highly skilled employees both in-house (17) and in the field (35) as well as a network of agents.

All other partners bring significant expert human resources to the partnership

- The Agri Risk Analyzer (ARA) is built by actuarial (insurance) experts, agricultural finance specialist, and risk modelling experts. Although the ARA team is small, the innovative capacity of the ARA is unique worldwide.
- FINCA brings many years of experience with agricultural finance in Uganda, and has a countrywide outreach with 28 branch offices. FINCA has more than 650 dedicated staff many of whom have a longstanding experience in servicing rural areas.
- Jubilee Insurance is active in insurance for over 90 years. Even though agricultural insurance has not been the major focus of the company in the past, Jubilee staff have a wealth of experience in designing risk transfer solutions for households in Uganda.
- MAAIF's extension officers still need to be recruited. The Extension Strategy foresees a total workforce of 4,666, mainly at the district and sub-county level. This figure is, however, rather ambitious considering the budget limitations. Nevertheless, the HR capacity of MAAIF for the provision of extension services will be considerable. Paired with the capacity development efforts of Makerere University as part of the FIRM model, this workforce will play an important role in assisting farmers to better manage their risks.



- CAES has about 200 academic staff and 145 administrative and support staff. This vast pool of experts on different topics in agriculture is an important asset for the development of holistic training courses on ARM as well as conducting these course. In addition, ARA will be customized for Uganda by experts from the Makerere University and data collection will be done by students.

5.3. SWOT analysis

STRENGTHS

- Strong existing customer base of FIT Uganda
- Alliance of strong partners with a broad range of skills and knowledge
- Cost sharing among a broad range of stakeholders
- Tailor-made services (finance, information, risk management) that can be sold to farmers based on sound business and risk analysis
- Flexible (information) platform structure that allows for integration of additional business partners

WEAKNESSES

- Limited financial resources to finance start-up investment

OPPORTUNITIES

- A large number of farming households that are not provided with basic services (information, credit, insurance, etc.)
- Government support for agricultural risk management (e.g. nomination of ARM focal point, subsidies for agricultural insurance)

THREATS

- Macro-economic shocks
- Regulatory changes
- Competition from other products and services
- Limited willingness to pay for services by farmers

5.3.1. Risks mitigation

The SWOT analysis revealed a number of threats to the success of FIRM. The project partners have developed mitigation strategies to contain these risks:

1. Macro-economic risk (changes in the macro-economic, social or political landscape of Uganda, which potentially can lead to project disruptions, or major disruptions in the agricultural and/or financial sector): By establishing a broad partnership FIRM and sharing the financial burden FIRM is able to absorb to a fair degree the shocks caused by macro-economic instability. And given the risk profile of the country (with low likelihood of, e.g. countrywide droughts) it is not expected that agricultural productivity declines to such extent that there will be a lack of demand for the FIRM services.
2. Regulatory risks (the risk that legislation or regulatory rulings will be unfavorable for project implementation): FIRM is a partnership between the public and the private sector. Private sector partners of FIRM are well connected to the Government of Uganda (GOU).
3. Competition from other products and services: FIRM has a very unique business proposition through the variety of services it offers. Nevertheless, for specific products (e.g. agricultural credit) competition exists in the Ugandan market. Through its close interaction with farmers, FIRM will be able to listen closely to the market demands and tailor its services to the needs of its customers.
4. Limited uptake from services from farmers: in general, farmers are reluctant to pay for services from their low cash reserves. FIT Uganda has a longstanding experience with the difficulty of selling information services to farmers. This realization is one of the major reason why FIRM has evolved; by putting together services packages that are tailored to individual farmers need, FIRM provides a good value proposition to its clients which is expected to result in good uptake. And FIT Uganda has already successfully rolled out its services to farmers through Product Information Advisors (PIA); this outreach model provides a deep penetration into the rural areas.



6. Financial Feasibility

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7. Outcomes and Goals

AVAILABLE UPON REQUEST

8. Conclusion and Recommendations

This study has outlined the major challenges that smallholder farmers are currently facing in Uganda and how these challenges can be tackled by a strong private-public partnership for provision of rural services. This document shows that all the ingredients for a successful implementation are available and that the FIRM model can be introduced quickly due to the existing networks of some of its partners (i.e FIT Uganda, FINCA, MAAIF).

This study has also shown that there are realistic chances of success for the FIRM model. Financial viability of the approach is achievable even under the rather conservative estimates of this paper. Given the novelty of the model, however, start-up costs are high and an additional investor is required to set up the system. The projected revenue streams and financial resources of existing partners are sufficient to guarantee the long-term viability of the approach.

This paper has outlined the importance of creating a strong alliance between the private and public sector. The proposed partnership model (FIRM-PPP) factors in the needs of the private sector partners, such as FIT Uganda, and their profitability goals. At the same time the FIRM model builds on the engagement of the public sector to use this model as a platform to improve information, agricultural risk management knowledge and extension services capacities on ARM. This proposal, therefore, also presents an opportunity to create public goods (such as access to information and knowledge) and to generate positive externalities in the form a more resilient agricultural sector and rural households.

Finally, this document has outlined the positive development impacts that the FIRM model is able to generate, particularly in the context of a partnership between the private and the public sector. The improved income and livelihood of tens of thousands of farmers is surely worth the investment that this approach requires. Furthermore, the successful implementation of such a model in Uganda also opens up the potential to implement similar schemes in other countries such as Kenya or Tanzania.



Annexes

Logical Framework

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Work plan and timeframe

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NOTE


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