

Demand and experiences with financial products and services in climate smart villages

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Summary

This study 'Demand for and experiences with financial products and services' describes and discusses the results of a survey to provide a first insight into the financial services that the smallholder farmers from climate smart villages use and to explore how these are related to climate smart agricultural technologies & practices. The study is one of three preliminary studies of a multi-year international research project (2016-2022) on 'Business models, incentives and innovative finance for scaling climate smart agriculture (CSA)'. The knowledge and insights developed are used to further support ongoing and emerging climate smart projects in which CCAFS is involved.

A survey was conducted to identify smallholder farmers and the small to medium enterprises (in different stages of the value chain) and their demand for and experiences with financial products and services. There were 148 respondents from 24 villages from Latin America, West Africa, East Africa, Southeast Asia and South Asia. The targeted number of female respondents (50%) was not met in all regions, for example in India where the role of female farmers in irrigated agriculture would be limited. A limitation to the results is that in different regions a different number of villages was involved, making it more difficult to generalise results. Sometimes it would prove challenging to make conclusions about the reasoning behind the answers. The study is about adoption climate smart agriculture, but does not define the extent of adoption.

Some preliminary finds are:

- Farmers in the CCAFS regions make use of different financial service providers. Banks are relatively more frequently in use in India and Southeast Asia, Mobile Money transfer more in East and West Africa and in Latin America farmers predominantly use the post office for making payments.
- Banks are becoming more important for saving purposes in all regions except for India where farmers more frequently use SACCOs. Banks are used for saving by both male and female farmers. For Indian female farmers traders are important for saving money.
- In Latin America and India, banks and insurance companies are most popular in obtaining insurance, in Africa and Southeast Asia financial service providers are hardly approached for insurances.
- Training, self-learning, government extension services, farmers associations, SACCOs, family and friends appear to be frequently used strategies and sources for learning about financial products and services.
- In East and West Africa selling livestock of crops to overcome financial losses appear to be a frequently used strategy in overcoming finance losses due to e.g. a bad harvest or illness in the family. Borrowing money from family and friends is a popular strategy for women in Latin America.

Overall most of the farmers applying CSA practices (77%), invested either very small amounts (< US\$ 100) or nothing at all. Perhaps CSA practices do not require more investments, or farmers would have liked to invest more but were not able to or prioritised other investments or expenditures. The use of financing through banks is quite high.

More than half of the farmers was able to finance the CSA practices themselves, either by self-financing, or by selling assets, using remittance funds or drawing from their VSLA or merry-go-round. Approximately 8% financed it through financial institutions (banks, MFIs, SACCOs) and 14% from trade-related sources (traders, shopkeepers, ESSOKO, savings collectors).

The differences in financial profiles between individual practices seem more significant than the differences between types of practices. Furthermore the influence of specific context is quite strong (location, available services and institutional infrastructure).

The main suggestions **from the farmers**, in order to enhance the application of CSA practices are in order of number of responses:

- *Improvements to the financial product (18%)*: the most frequent suggestion is to have lower interest rates or soft loans, other suggestions relate to changes in the credit product (credit in kind, more flexible loans, higher amounts, easier access).
- *Subsidies (11%)*: the suggestions range from free weather forecasts, to subsidies for fertilizer and manure, or for adaptation measures.
- *Training (9%)*: either generic or on specific issues as irrigation, awareness creation of financial services.
- *Other services*: for example more location-specific and language-specific weather forecasts, or tractor services or market information. These suggestions are not as generalized as the other suggestions mentioned in the previous points.

The survey also revealed diverse critical issues in the access, awareness and use of financial services and products

- *Interest rate*: although not a primary focus, a relatively high percentage of respondents suggest lower interest rates to facilitate climate smart technologies and practices. We suggest to consider improving the understanding of diversity in credit for single and layered use of climate smart technologies and practices.
- *Training*: all respondents are linked with the CCAFS programme, explaining the high rate received trainings in climate smart technologies and practices. The percentage of training in financial products and services or business development was much lower. We suggest a selection of case studies/support informed by opportunities to include capacity building of smallholder farmers (for the use of financial products, services and business development), managers of financial institutes in climate change and CSA related risks on investments, and to develop and test training/capacity building material
- *Insight into costs and benefits of CSA technologies and practices*: Formal and informal financial institutions as well as farmers wanting to borrow money for investing in CSA technologies and practices need to be aware of the involved added value and involved risks.

For the selection of future cases and/or support of the granted projects in the call of the Food & Business Global Challenges Programme, we suggest to select cases and/or support projects where in addition to knowledge generation on financial products and services, insights into (economic /social) costs and benefits of climate smart agriculture technologies and practices will be developed as well.

1. Introduction

1.1 Context and objectives

The present study 'Demand for and experiences with financial products and services' describes and discusses the results of a survey, which was carried out to develop first insight into the financial services that the smallholder farmers actually use and to explore how these are related to climate smart agricultural technologies & practices.

The study is one of the preliminary studies of a multi-year international research project (2016-2022) on 'Business models, incentives and innovative finance for scaling climate smart agriculture (CSA)'. This project is part of the so-called Flagship 2 on Climate smart Technologies and Practices of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). This project explores the role of finance in combination with business models and competence building to support smallholder farmers and Small to Medium Enterprises (SMEs) to adopt CSA. Specifically, this projects aims to develop context-specific knowledge on the factors and conditions, which constitute an effective technical and financial package to scale climate smart agriculture.

At the start of the project in 2017, three preliminary studies were carried out simultaneously:

1. An inventory of potential profitable and scalable CSA business cases in the CCAFS Priority areas;
2. A survey 'Understanding the demand for financial products and services in CSA in the CCAFS priority areas';
3. Mapping of the supply of financial services (Wattel & van Asseldonk, 2017).

The knowledge and insights developed in these activities are used to further support ongoing and emerging climate smart projects in which CCAFS is involved. Specifically, the three studies enable the research team to support the granted projects in the call of the Food & Business Global Challenges Programme (2017), a collaboration between the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the Dutch Food & Business Knowledge Platform and NWO-WOTRO Science for Global Development (Annex 1). These projects focus on new business models for scaling CSA at the local level; explore innovative value-chain based incentive mechanisms for CSA adoption; explore emerging innovative finance instruments that support CSA scaling up and/or improve the enabling conditions for scaling up. All granted projects are located in East Africa.

The present study 'Demand for and experiences with financial products and services' has a signalling character. The survey aims to:

- Generate first insights into the financial products and services that the smallholder farmers actually use and how these are related to CSA technologies & practices.
- Identify critical issues in the access and use of financial products and services that enable or hinder the uptake of climate smart technologies and practices.

The critical issues will inform future decisions on selection of case studies and support to the granted projects in the call of the Food & Business Global Challenges Programme.

1.2 Finance to support adoption of Climate Smart Agriculture

Agriculture faces the enormous challenge of feeding the world's growing population. Although crop yields have grown impressively in the last few decades, production requires an increase by another 60-70% by 2050 to meet the demand (Grist 2015). Climate change poses additional challenges to agriculture, particularly in developing countries. Climate Smart Agriculture (CSA) aims to respond to these challenges. It represents a strategy that can help increasing farmers' resilience to weather extremes, adapting to climate change and climate variability, while decreasing agriculture's greenhouse gas (GHG) emissions that contribute to global warming (Steenwerth et al., 2014). Over the last decade, considerable CSA research has been conducted on farming practices and technologies for mitigation of agricultural GHG emissions and for adaptation of farming systems to new climate conditions (Steenwerth et al., 2014). However, many climate smart technologies and practices are still not achieving their full potential impact because of low levels of adoption by smallholder farmers. There are many plausible reasons for this, including hindering institutions and policies, constraints related to the natural system, market uncertainty, cultural constraints, our limited understanding about smallholder farmers' decision making, and insufficient access to sufficient and adequate finance (Long et al., 2015; Westermann et al., 2014).

The present study addresses the issue of access to sufficient and adequate finance. In particular, it seeks to better understand the demand for finance to be able to adopt CSA technologies & practices. This understanding, in combination with insight into the supply side of financial products (e.g. Wattel and van Asseldonk, 2017), is critical to designing policies, and public and private financial products and services to catalyse the uptake of CSA technologies & practices and as such the scaling of CSA.

The demand side entails private enterprises in the real economy. This study focusses on the demand of small farmers and SMEs for financial products and services in the CCAFS regions (Latin America, South Asia, Southeast Asia, West Africa and East Africa). Small farmers are searching for finance to invest in adaptation measures to reduce physical climate risks, reduce costs and/or increase revenues. Likewise, SMEs (service providers) are in need of finance to invest CSA to capitalise on a new business opportunity that has arisen as a result of climate change.

1.3 Structure of document

This report is organised as follows. Chapter 2 describes the methodology and highlights the setup of the survey and types of questions used. In chapter 3, the results of the study are presented. Chapter 4 concludes and provides recommendations for the selection of case studies and type of support to the granted projects in the call of the Food & Business Global Challenges Programme /CCAFS in the next phase of the project.

2 Methodology

Taking into account the objectives of the inventory and the diversity of the regions and countries in which the CCAFS programme is engaged, a rather practical and explorative approach was adopted for this study. The inventory was based on the following aspects:

Focus on promising and scalable business cases for CSA in CCAFS priority areas

The present study focussed on finance supporting (or hindering) the uptake of CSA technologies and practices that are economically and socially sustainable. Building upon the results of the first 'inventory of potential profitable and scalable CSA business cases in CCAFS priority areas', the coordinators of the CCAFS regions selected 1-2 promising and scalable cases to carry out the second inventory 'Demand for and experiences with financial products and services'. This inventory covered the five regions where CCAFS is engaged: Latin America, South Asia, Southeast Asia, West Africa and East Africa. The CCAFS priority areas are so-called Climate Smart Villages (CSVs) where CCAFS and local partners are working with smallholder farmers, SMEs and other stakeholders to improve their climate resilience. All these villages are in high-risk areas, which will likely suffer most from a changing climate.

Questionnaire

A questionnaire (Annex 4) was used to identify smallholder farmers' and SMEs' demand for and experiences with financial products and services' in these promising and scalable cases. This method was adopted as it enables to conduct an inventory in a relatively short time and fits the signalling character of the study. The research team provided the CCAFS regional coordinators with a web-based version of the questionnaire. The CCAFS regional coordinators organised the implementation of the inventory in the field with the help of local partners. These partners used a hard copy of the questionnaire to carry out face-to-face interviews with respondents.

For each of the selected promising case study, a minimum of 15 interviews were to be conducted with the use of the questionnaire. Respondents of the questionnaire included: 1) female and male smallholder farmers (at least 50% of the respondents were to be female farmers), and 2) SMEs involved in different stages of the value chain (e.g. service providers, input suppliers). At least 25% of the respondents were to be (women-led) SMEs such as traders and input suppliers. Table 1 shows the total number of interviews conducted in the different regions (and countries), including the number of female and male respondents and SMEs.

Pre-testing

Draft versions of the questionnaire were shared with the CCAFS regional coordinators who provided feedback and made suggestions for improvements. The first full version was pre-tested on the basis of five interviews in all CCAFS regions. The pre-test identified questions that did not make sense to respondents and suggested a few additional questions.

Analysis

Answers of respondents were incorporated in a digital version of the questionnaire. The data were transformed into spreadsheets and analysed with Microsoft Excel. The analysis of the results mainly highlight the most frequently cited results, differences in use and experiences with financial products and services between CCAFS regions, and between men and women.

Limitations

The study has the following limitations:

- The required percentage of female respondents was not met in all CCAFS regions. In Haryana (India) the role of female farmers in irrigated agriculture in the climate smart village 'Karnal' is limited;
- According to the results, in Vietnam and Tanzania no SMEs were interviewed. Maybe the term SME was not well understood. Therefore SMEs were not taken as separate user category in the analysis;

Table 1: Survey - countries, states, departments, villages, CSA activities and number of interviews

Country – State	Villages	Promising business case for scaling CSA	No. male interv.	No. female interv.	Total No. interv iews
Latin America					
Colombia Cauca	1. CSV Noroccidente de Popayán-Cauca	Pest resistant varieties and management	2	12	14
West Africa					
Senegal Kaffrine	1. Daga Birame 2. Ngouye Kahi	Climate information through PICSA approach Non timber forest products	20 male (incl. 1 SME)	15 female (incl. 1 SME)	35
Ghana Upper West	1. Bompari (Lawra) 2. Dazuuri (Lawra) 3. Daggoh (Jirapa)	Climate information through PICSA approach	22 male (incl. 5 SME)	9 female (incl. 3 SME)	31
			42 (6 SME)	24 (4 SME)	66
East Africa					
Kenya Rift Valley	1. Chemilpagei (Kericho) 2. Kaborok Kericho 3. Kapsorok (kericho)	Improved ruminant breed varieties and soil management	5 male (5 SME)	1 female (1 SME)	6
Kenya Nyanza	1. Kasaye (Kisumu) 2. Kamuana (Kisumu) 3. Lower Kamula (Kisumu)	Introduction of Sorghum varieties and soil management	9 male (incl. 5 SME)	5 female (incl. 2 SME)	14
Tanzania Tanga	1. Boheloi (Lushoto) 2. Kwekitui (Lushoto) 3. Kwesine (Lushoto)	Improved potato varieties and soil management	7 male	3 female	10
Tanzania Milungui Migambo	1. Migambo (Lushoto)	Improved potato varieties and soil management	4 male	1 female	5
			25 (10 SME)	10 (3 SME)	35
Southeast Asia					
Vietnam Thanh Hoa	1. Hoang Phong 2. Bac Hai village, Hoang Phong commune 3. Lien son village - Hoang Phong commune 4. Trung trieu village - Hoang Pong Commune	Aquaculture farming for livelihoods and food security	10 male	5 female	15
South Asia					
India Haryana	1. Chorpura 2. Dabkoli 3. Geer 4. Bastada	ICT and machinery provision	14 males (incl. 2 SME)	4 females (incl. 1 SME)	18
In total	24 villages		93 (18 SME)	55 (8 SME)	148

- Only in the regions West and East Africa, interviews were conducted in more than one country. Therefore the relevance of comparing results between countries within one single region was limited;
- Some questions permitted the option 'not applicable' as answer. For questions like those on loans, this option scored relatively high, partly because a relatively large number of respondents did not obtain any loan. However, there might be other reasons why the questions were not applicable. These reasons are not known;

- The setup of questionnaire appeared not to allow conclusions about the reasons behind differences in interest rates between regions and between men and women. The issue of (differences in) interest rates should have been addressed with the use of open question;
- The questionnaires focus on adoption of climate smart agriculture but do not further detail the extent of adoption (for example if it is applied on the whole farm, or just in part or to what extent the inputs achieve the recommended levels) which may be constrained by limited credit;
- This is a small study within a wide diversity of contexts across nations and CSA practices where both farmers and SMEs are considered.

3 Results

The result section largely follows the setup of the survey and is organised in three parts:

1. Availability of and access to financial service providers presenting respondents' reaction to questions concerning:
 - Financial services for making payments;
 - Financial services for savings, financial services for obtaining credit;
 - Financial services for insurance; and,
 - Information sources to improve their knowledge on financial products and services.
2. Use of and experience with financial products and services presenting respondents' answers to questions concerning:
 - a. (Use of) Bank account;
 - b. (Use of) financial credit;
 - c. Credit sources and allocation.
3. Climate smart agriculture and investments

Detailed results on these three sections are presented in Annexes 2 and 3. The sections respondents identification details' and 'general characteristics of farm household' are partly incorporated in the methodology section.

3.1 Availability of and access to financial service providers

3.1.1 Financial service providers for making payments

The results indicate that the majority of respondents in the five CCAFS regions are aware and have access to financial services for making payments. Figure 1 shows that in East Africa the Majority (97%) of the respondents transfer money through mobile money services, whereas in Latin America the majority (82%) use the post office. West African respondents pointed out that they predominantly (57%) make use of mobile money services and, to a lesser extent, of a bank (32%). In India (S Asia), most respondents (53%) transfer money through the State Bank of India, the Punjab National bank or the Oriental Bank of Commerce, 41 % revert to family or friends for making payments. The majority of the respondents from Southeast Asia transfer money through banks and informal saving networks. Traders are approached for financial products and services in India only (by 3% of the interviewees).

FINANCIAL SERVICES FOR MAKING PAYMENTS

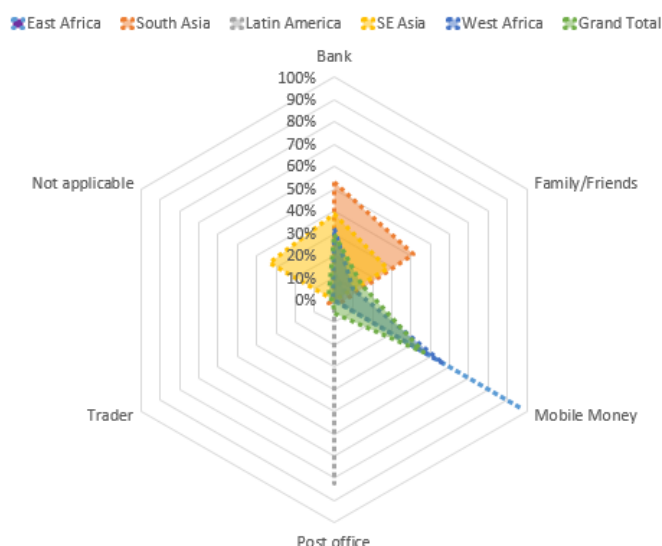


Figure 1: Financial services for making payments

Table 2 shows the access to financial institutions in use for making payments, disaggregated for gender. In East Africa men and women make almost equally use of mobile money for making payments. In India the majority of respondents using a bank are women. In Latin American women use most frequently the post office for making money transfers. In Southeast Asia, 39% of the respondents make use of a bank of which 43% are women and 57% are men.

Table 2: Financial institutions in use for making payments, disaggregated by gender

	L America	West Africa	East Africa	SE Asia	South Asia
Bank	12%	32%	3%	39%	53%
female	100%	62%	100%	43%	17%
male	0%	38%	0%	57%	83%
Family/Friends	6%	10%	0%	28%	41%
female	100%	62%		20%	36%
male	0%	38%		80%	64%
Mobile Money	0%	57%	97%	0%	3%
female		42%	54%		0%
male		58%	46%		100%
Post office	82%	0%	0%	0%	0%
female	86%				
male	14%				
Trader	0%	0%	0%	0%	3%
male					100%
Not applicable	0%	1%	0%	33%	0%
female		100%		33%	
male		0%		67%	
Grand Total	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

3.1.2 Savings

Banks are important institutions for saving purposes in all regions except from Southeast Asia where farmers use more frequently SACCOs (Savings and Credit Cooperative Organization)(Figure 2). In Latin America and to a lesser extent in India, most of the respondents use a bank for saving purposes. In East Africa 49% of the interviewees use mobile money services for savings and 31% a bank. SUSUs (informal loan club) are only used for savings in West Africa. Village Savings and Loan Association (VSLA) are in use by relatively few respondents from East and West Africa.

Table A2.1 (Annex 2) presents the financial sources for saving disaggregated by gender. In East Africa, both men and women make use of banks and mobile money for saving purposes almost equally. In India, amongst those respondents using a bank and family /friends for savings, the majority is men. Indian female farmers use traders for savings. In Latin America, women prefer a bank, cooperative and family/friends for savings. In Southeast Asia, women do not use banks for savings. In West Africa, of the 35% using banks for saving, 47.5% are women. 56,25 % of the respondents from Southeast Asia perceived the question as not applicable. It is not clear if this is due to the fact that respondents are not saving or because of other reasons.

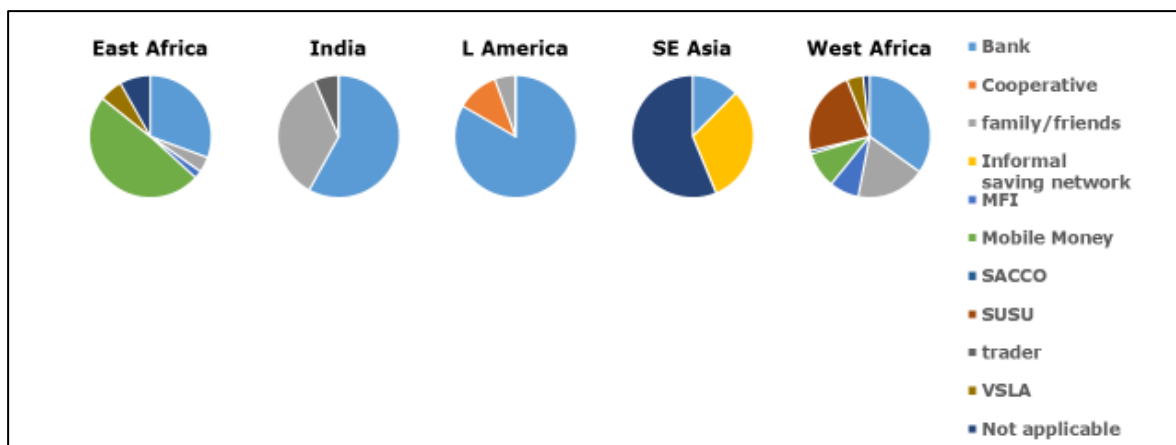


Figure 2: Services for savings

- MFI Micro Financial Institutions
- SACCO Savings and Credit Cooperative Organizations
- SUSU Method of pooling savings in parts of West Africa and the Caribbean.
- VSLA Village Savings and Loan Association

3.1.3 Credit

Figure 3 shows financial services used for obtaining a credit/loan. In East Africa, the majority of the respondents (31%) make use of mobile money services, 17% of the respondents receive credit from banks and 15 % from a Village Savings and Loan Association. In India, respondents mainly make use of banks (35.90%), traders (33%) and, to a lesser extent, of family or friends (20.5%). For respondents in Latin America, banks appear to be popular for receiving credit (82%). In Southeast Asia, almost 50% of the respondents obtain a credit from banks and 37.04% from informal saving networks. In West Africa, the three most frequently used services include family/friends (26%), banks (25.5%) and SUSUs (24%) (Table A2, Annex 2).

For the most frequent used sources for obtaining a credit, East African women use most frequently a mobile money system (Table A2, Annex 2). In India, women go to family, moneylenders and traders to obtain a loan. Amongst those Indian respondents making use of banks for credit all are men. In Latin America out of the 82% using a bank for loans, 86% are women. For Southeast Asia, amongst those respondents (48%) who borrow money from banks, 23% are women. In West Africa, men make more often use of family /friends for borrowing money than women.

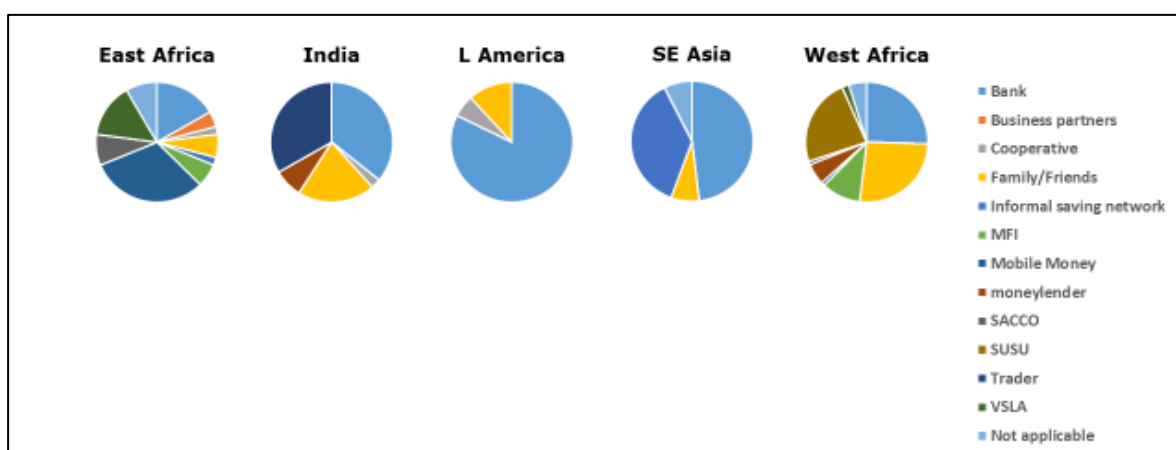


Figure 3: Used services for obtaining credit

3.1.4 Insurance

Figure 4 presents the services from which respondents obtain an insurance such as health insurance or a crop insurance. The option non-applicable scored very high in South Asia (80% of the respondents), in East Africa 46% of the respondents and in West Africa (41 of the respondents). Insurance agencies appeared to be used in all regions.

For the most frequently, used sources for obtaining an insurance, in East Africa most respondents (27%) obtain an insurance from a bank, 20% of whom are women (Table A2.3, Annex 2). In India, banks are used for obtaining insurances by 36 % of the respondents 17% of whom are women. 33% of the Latin American respondents obtain an insurance from an insurance company, 80% of them are women. In West Africa, 38 % of the interviewees also make use of an insurance company, but here 52% of them are women.

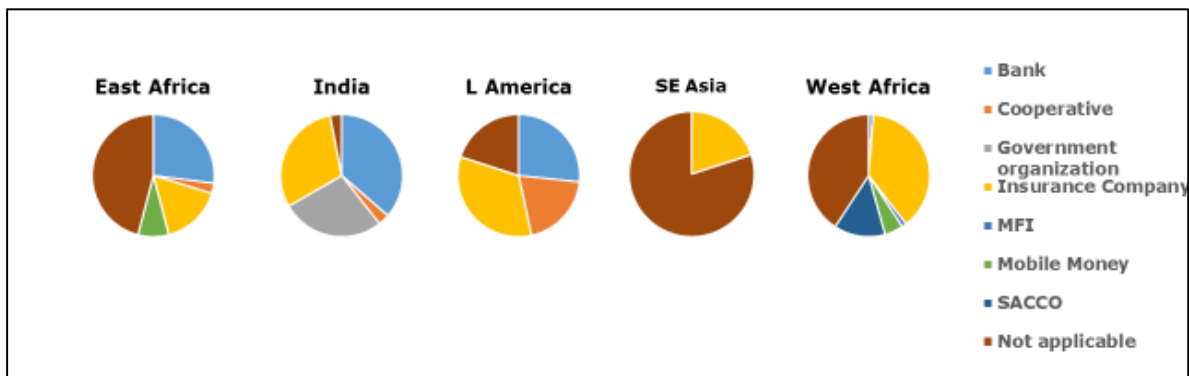


Figure 4: Use of services for insurance

3.1.5 Important information sources on financial products and services

Table 3 shows that respondents make use of a variety of information sources to improve their knowledge about financial products and services. Trainings, self-learning, government extension services and farmer associations appear to be sources of information that are most frequently used.

Table 3: Sources used to improve knowledge about financial products and services

Information sources	East Africa	India	L America	SE Asia	West Africa
Bank	1%	15%	0%	11%	2%
CCAFs Agent	0%	0%	0%	0%	2%
Community members	2%	15%	0%	6%	6%
Development partners	4%	2%	0%	0%	9%
Extension agent	5%	0%	0%	0%	6%
Facilitating agencies	8%	0%	39%	8%	5%
Farmers associations	8%	4%	7%	17%	10%
Friends/Family	3%	17%	4%	14%	10%
Government extension services	16%	9%	0%	0%	9%
Internet	1%	4%	0%	0%	0%
MFI	1%	0%	0%	0%	1%
News, magazines	3%	9%	0%	0%	0%
Radio	7%	4%	0%	0%	8%
SACCO	3%	0%	0%	17%	0%
Savings & credit group	7%	0%	0%	0%	2%
School	0%	2%	0%	0%	1%
Self-learning	6%	4%	25%	22%	13%
SMS services	1%	4%	0%	0%	3%
Spouse	1%	2%	0%	0%	1%
Traders/ middlemen	2%	4%	0%	0%	1%
Trainings	22%	0%	25%	3%	9%
Other	1%	4%	0%	3%	0%
Not applicable	0%	0%	0%	0%	2%
Grand Total	100%	100%	100%	100%	100%

Except from India and South Asia, women make more use of self-learning to improve their knowledge than man (Table A2.4, Annex 2). In East Africa government extension services are most frequently used as source of information, but relatively more by men than by women. In East Africa and Latin America, women appear to make relatively more use of trainings as source of learning about financial services and products than men. In India, family and friends appear to be an useful source of information and, to a lesser extent, banks and other community members. In Latin America, especially women consult facilitating agencies (e.g. NGOs) to learn about financial services and products. In Southeast Asia 22.22% respondents mentioned, they learn about finance all by themselves and 16.67% of them, both men and women, use SACCOs to gain knowledge about financial products and services. In West Africa, self-learning, farmers associations, friends, and relatives are equally important as information source, both for men and women.

3.1.6 Strategies to overcome financial losses

Table 4 presents options respondents use to finance losses due to for example. a bad harvest or illness in the family. Overall, borrowing money from family/friends, credit from a bank and selling livestock or crop are the most frequently used strategies to overcome financial losses. 22.39% Of the East African respondents pointed out that they will sell livestock or crops to overcome financial losses, 60% of them are male.

Table 4: Options in use to overcome finance losses due to e.g. a bad harvest or illness in the family

Options	L America	West Africa	East Africa	SE Asia	India	Grand Total
By borrowing money from a bank	7%	12%	19%	33%	30%	18%
By borrowing money from an family/friends	86%	20%	18%	19%	27%	23%
By borrowing money from elsewhere, please specify	0%	2%	4%	4%	0%	3%
By having an insurance	0%	5%	4%	0%	7%	4%
By selling livestock or crop	7%	20%	22%	11%	7%	17%
By subsidy or gifts (and by whom?)	0%	2%	4%	0%	0%	2%
By taking a temporary job	0%	9%	4%	0%	0%	5%
I am self-supporting and do not use external finance	0%	13%	18%	19%	13%	14%
Merry go round	0%	0%	0%	15%	0%	2%
Other	0%	15%	4%	0%	3%	9%
Trader	0%	0%	0%	0%	13%	2%
Not applicable	0%	2%	0%	0%	0%	1%
Grand Total	100%	100%	100%	100%	100%	100%

In India borrowing money from a bank seems to be the most popular strategy to deal with financial problems, but for men only. The majority of Latin American interviewees (85.71%) borrow money from friends and family, especially women. In Southeast Asia, a bank appears to be an important financial safety net, but more frequently used by men than women. In West Africa 'obtaining money by selling livestock or crops' and 'borrowing money from family/friends' appear to be equally important strategies, both for men and women. Though borrowing money from friends and family is a popular strategy, we should consider the fact that family and friends may be affected by the same type of financial losses, especially when due to harvest loss.

3.2 Use of financial institutions, products and services

3.2.1 Financial institutions and their use

Banks

Figure 5 shows that all Indian respondents have a bank account, whereas in East Africa 48.57%, in West Africa 33.33%, in Latin America 85.71% and in SE Asia 26.67% of the interviewees have a bank account. For East Africa, 50% of the female respondents do have a bank account, in India 100%, in Latin America 92.31%, in Southeast Asia 20% and in West Africa 28.57% of the female interviewees have a bank account (Table A2.5, Annex 2). Especially in East Africa, West Africa and India there is a large variety of banks in use where respondents have an account. For East Africa 34.29% of the respondents mentioned that they are able to transfer money with a cell phone or computer. In West Africa 25.76% of the respondents use a cell phone or computer to transfer money, in India 5.56% and in Southeast Asia 6.67%. None of the Latin American respondents mentioned being able to transfer money with a cell phone or computer.

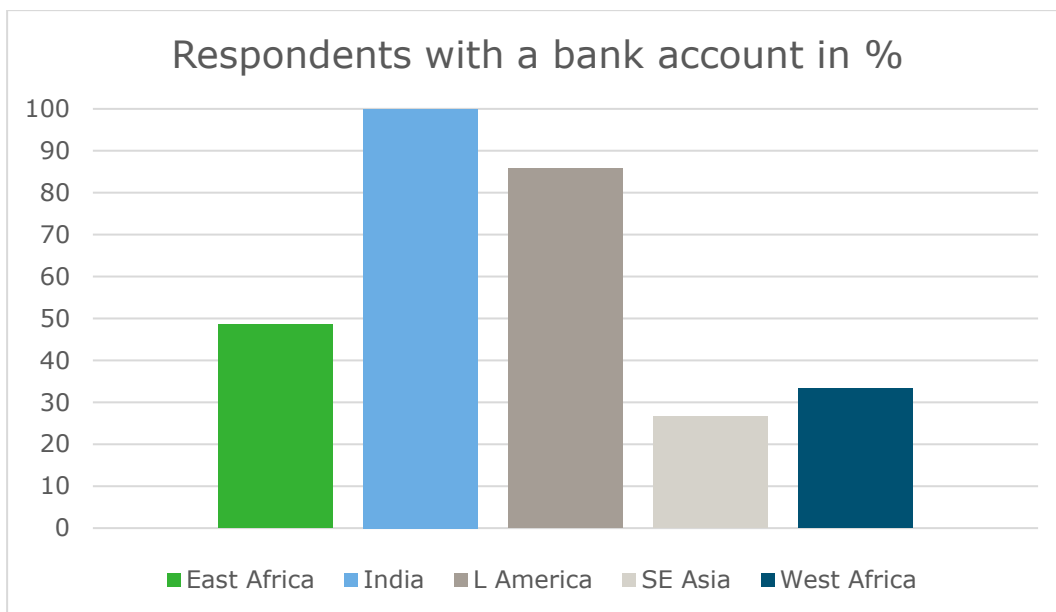


Figure 5: Percentage of respondents with a bank account

Financial transaction with a computer or cell phone

In India, Latin America and Southeast Asia, more than 90% of the respondents pointed out that they can make financial transactions with a computer or cell phone. In Africa this figure is much lower namely 30% for East Africa 30% and 56% for West Africa 56% (Figure 6)

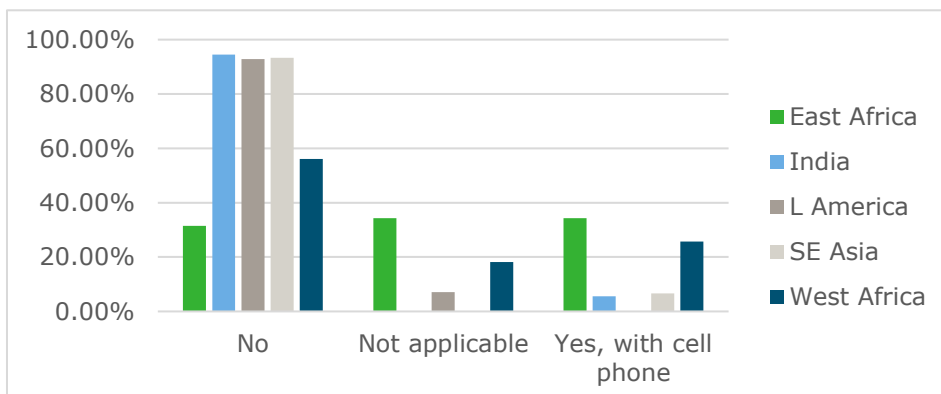


Figure 6: Percentage of respondents making use of cell phone or computer to make financial transactions

The ability to get a loan, to save money and to keep money in a safe location were amongst the three most important benefits of having a bank account (Table A2.6, Annex 2).

Other formal financial institutions

For the five CCAFS regions, table 5 shows that respondents make use of cooperatives and micro finance institutions, and to a lesser extent SACCOs, post offices and others (not provided as option in the questionnaire) to receive financial products and services. 24% of the East African interviewees use microfinance institutions (mainly women) and 21% receive financial services and products from SACCOs (mainly men) (Table A2.7, Annex 2). In India and West Africa cooperatives are frequently in use for receiving financial products and services. Both in India and West Africa cooperatives are predominantly used by men. In West Africa, the majority of the respondents make use of microfinance institutions. Most of them are men. In Southeast Asia 40% use microfinance institutions and 25% of SACCOs. For a relatively high percentage of respondents, this question was not applicable. Maybe they do not make use of the formal financial institutions (in addition to banks). We remark that although we suspect the surveyed people have better access to credit as they are part of a climate smart village, this amount can still be considered to be low for climate smart agriculture.

Table 5: Formal financial institutions (others than bank) providing financial services and products

Financial institutions	West		East	SE Asia	India	Grand Total
	L America	Africa	Africa			
Cooperative	19%	23%	5%	0%	58%	22%
Microfinance institution	25%	25%	24%	40%	4%	23%
Post office	19%	2%	5%	0%	23%	7%
SACCO	0%	6%	21%	25%	0%	10%
Other	0%	7%	3%	20%	4%	7%
Not applicable	38%	36%	42%	15%	12%	31%
Grand Total	100%	100%	100%	100%	100%	100%

Informal financial institutions

Table 6 shows that for all regions together the most frequently used informal institutions include the merry-go-round schemes (or any other informal saving network) (28%), shop keepers (14.5%) and traders (14.51%).

Looking at specific regions, we observe that the merry-go-round scheme (or any other informal saving network) is frequently used for receiving financial products and services in Southeast Asia (by 71.43 % of the respondents), in Latin American (42.86%), in East Africa (by 31.88%) and West Africa (by 24.69%). Especially in West Africa and Latin America, mainly women access a merry go round scheme for finance (Table A2.8, Annex 2). In India, traders appear to be an important financial institution for receiving financial products and services, especially for women.

Table 6: Informal /local financial institutions which financial services and products are used

Financial institution	East Africa	India	L America	SE Asia	West Africa	Grand Total
<u>Value Chain</u>						
Input supplier (e.g. goods on credit)	4%	31%	7%	0%	5%	8%
Processing industry	0%	0%	0%	0%	4%	2%
Trader	20%	47%	0%	0%	4%	14%
<u>Community Finance</u>						
Merry-go-round	32%	0%	43%	71%	23%	28%
A money guard	0%	0%	0%	19%	7%	5%
Savings collectors (not closely related to the family)	4%	0%	0%	10%	6%	5%
Other groups	3%	3%	0%	0%	5%	3%
Remittances funds	10%	0%	0%	0%	7%	6%
Shop keepers	19%	16%	21%	0%	13%	15%
Vouchers	6%	0%	0%	0%	0%	2%
Other	0%	3%	14%	0%	1%	2%
not applicable	1%	0%	14%	0%	23%	11%
Grand Total	100%	100%	100%	100%	100%	100%

Motivations for borrowing money from (in)formal institutions

For the five CCAFS regions, the three most frequently cited reasons for borrowing money from banks or other formal and informal financial institutions include paying school fees (19.18% of the respondents), paying for other household/family expenditures (18.84%) and paying food (17.47%) (table 7). Looking at reasons most frequently mentioned by respondents from specific regions, we observe the following. For the East African respondents 'paying for food' and 'schools fees' seem to be reasons of equal importance. 31.58% of the Indian respondents mentioned that they borrow money for paying other household/family expenditures (e.g. marriage). 46.67% Of the Latin American use loans to invest in farm/ company equipment. For Southeast Asia investments in (aquaculture) farm inputs and for West Africa paying food are most frequently cited reasons.

Table 7: Reasons for borrowing money

Reasons	L America	West Africa	East Africa	SE Asia	India	Grand Total
<u>Production expenditures</u>						
To build a factory, sheds etc. to grow my farm/company	0%	2%	0%	0%	0%	1%
To finance negative events related to climate change	0%	1%	1%	7%	11%	3%
To hire (new) personnel	0%	4%	0%	4%	0%	2%
To invest in (aquaculture) farm inputs (for example fingerlings and feed)	13%	19%	0%	50%	11%	16%
To invest in equipment of my farm/company	47%	7%	1%	14%	11%	9%
To renew equipment	0%	1%	1%	0%	5%	2%
To finance negative events not related to climate change	0%	3%	4%	0%	5%	3%
<u>Household expenditures</u>						
To pay for food	0%	19%	32%	4%	0%	17%
To pay for other household/family expenditures	20%	15%	25%	4%	32%	19%
To pay for school fees	0%	16%	32%	7%	24%	19%
Other	20%	12%	3%	11%	3%	9%
Grand Total	100%	100%	100%	100%	100%	100%

Strategies for financing farm investments

Table 8 presents strategies of respondents to finance farm investments such as inputs (seeds, fertilizers, labour) and equipment. Respondents could mention maximum three options. In descending order of frequency of mention, 'self-supporting and not using external finance', 'selling livestock, crop or aquaculture products', 'borrowing money from family/friends' and 'borrowing money from a bank' are the four frequently used strategies.

Table 8: Strategies for financing farm investments

Strategies	L					Grand Total
	America	West Africa	East Africa	SE Asia	India	
By borrowing money from a bank	5%	19%	7%	32%	18%	16%
By having an insurance	0%	3%	0%	0%	0%	1%
By selling livestock, crop or aquaculture products	65%	18%	22%	14%	0%	20%
By subsidy or gifts (and by whom?)	0%	6%	13%	0%	11%	7%
By taking a temporary job	5%	6%	3%	0%	0%	4%
I am self-supporting and do not use external finance	25%	24%	25%	25%	18%	24%
By borrowing money from family/friends	0%	15%	22%	29%	11%	16%
Other	0%	10%	8%	0%	43%	11%
Grand Total	100%	100%	100%	100%	100%	100%

Considering specific regions, 25.00% of the East African respondents use their own savings to finance farm investments, 21.67% sell their livestock, crop or aquaculture products and 21.67% borrow money from family/friends. 42.86% Of the Indian respondents indicated that they use other sources than provided in the questionnaire, which may include government subsidy. In Southeast Asian, diverse strategies are in use of which borrowing money from a bank appears to be the most frequently cited (by 32.14%). For Latin America 65.00% of the respondents sell livestock, crop or aquaculture products to finance farm investments. 24.07% Of the West African interviewees are 'self-supporting'.

3.2.2 Credit sources and allocation

For the five CCAFS regions, 64.19% of the respondents received credit last year (62.86% East African respondents, 77.78% India, 64.29% Latin America, 93.33% Southeast Asian and 54.55% West African). Amongst those respondents who received a loan, 51.58% were women (Table A2.9, Annex 2).

Amount of loan

The amount of obtained credit varies considerably between the CCAFS regions (Table 9). For example, a loan of 1000 - 3000 USD was taken last year by 50% of the Latin American respondents. A loan of the same amount was taken by 26.67% of the Southeast Asian respondents and by only 2.94% of the East African respondents. None of the West African respondents took a loan of this amount. Southeast Asian respondents, however mainly by males, took by Indian and to a lesser extent relatively large loans (> 10,000 euros). The East and West Africa respondents who received small amount of credits, were predominantly women.

Table 9: Amount of received credit/loan last year (2016)

Credit/ loan in USD	L America	West Africa	East Africa	SE Asia	India	Grand Total
<100	0%	36%	24%	0%	0%	22%
100-1000	7%	18%	38%	13%	0%	19%
1000-3000	50%	0%	3%	27%	17%	10%
3000-6000	7%	0%	0%	40%	11%	6%
6000-10000	0%	0%	0%	0%	28%	3%
>10000	0%	0%	0%	7%	17%	3%
Not applicable	36%	45%	35%	13%	28%	37%
(blank)	0%	0%	0%	0%	0%	0%
Grand Total	100%	100%	100%	100%	100%	100%

Financial institutions that provided credit/loans last year

Overall, for the CCAFS regions, 19% of the respondents took last year's loan from the VSLA and 15.88% from a bank. In East and West Africa, VSLA were most frequently cited as the financial institution from which respondents, especially women, received the loan. In India, most of the female respondents received a loan from traders. In Southeast Asia, male and female respondents predominantly used a bank to take a loan. In Latin America, only female respondents obtained a credit from a bank. Male respondents tend to go to family for loans (Table A2.10, Annex 2).

Table 10: Financial institutions that provided a loan/credit last year

Financial institutions	L America	West Africa	East Africa	SE Asia	India	Grand Total
Bank	43%	3%	5%	42%	33%	16%
Cooperative	7%	1%	3%	0%	0%	2%
Family	7%	4%	0%	5%	4%	4%
Friend	7%	6%	3%	5%	4%	5%
MFI	0%	10%	8%	0%	0%	6%
Moneylender	0%	3%	0%	0%	4%	2%
Others	0%	7%	8%	16%	0%	6%
SACCO	0%	0%	13%	11%	0%	4%
Trader	0%	0%	0%	0%	41%	6%
VSLA	0	31%	21%	11%	0%	19%
Not applicable	36%	36%	39%	11%	15%	31%
Grand Total	100%	100%	100%	100%	100%	100%

Interest rates

Interest rates on loans varied from <1% and >40% per year. Looking at the interest rate paid by most of the respondents per regions we can observe the following: In East Africa, 48.57% of all respondents paid an interest rate of 5-10%, in India, 44.44% paid an interest rate of 20-30%, in Latin America 50% paid an interests rate of 1-5%, In Southeast Asia 85.71% of the interviewees paid an interest rate of <1% (Table 11). The data do not provide insight into the difference of interest rates between men and women.

Table 11: Interest rate on loans

Interest rate	East Africa	India	L America	SE Asia	West Africa	Grand Total
<1%	0.00%	0.00%	14.29%	85.71%	3.03%	10.88%
1-5%	8.57%	16.67%	50.00%	0.00%	7.58%	12.24%
5-10%	48.57%	5.56%	0.00%	14.29%	13.64%	19.73%
10-20%	5.71%	16.67%	0.00%	0.00%	15.15%	10.20%
20-30%	0.00%	44.44%	0.00%	0.00%	4.55%	7.48%
30-40%	0.00%	0.00%	0.00%	0.00%	7.58%	3.40%
>40%	0.00%	0.00%	0.00%	0.00%	1.52%	0.68%
Not applicable	37.14%	16.67%	35.71%	0.00%	46.97%	35.37%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

We have surveyed the interest rate on loans. It is important to acknowledge these rates can vary significantly depending on the size of the loan, the duration of the loan, subsidies on interest, the type of lender and other variables. Nominal rates can have hidden costs and calculation methods, furthermore we suspect some people may have cited the monthly interest rate as it is more often communicated than the annual rate. Therefore we should be careful in drawing conclusions from this table.

Reimbursement periods – Repayment modalities

Table 12 shows that in Latin America and Southeast Asia a relatively large part of the respondents take loans for farm investments with a relatively long reimbursement period of 24-36 months or > 36 months, which may (partly) explain the relatively low interest rates in these two regions. In order to draw better conclusions about the link of the interest rate and the reimbursement period, further study would be required, which is out of the scope of this study.

Table 12: Reimbursement periods

Months	East Africa	India	L America	SE Asia	West Africa	Grand Total
<3	34.29%	0.00%	7.14%	6.67%	28.79%	22.30%
3-6	11.43%	61.11%	0.00%	6.67%	10.61%	15.54%
6-12	11.43%	0.00%	0.00%	13.33%	10.61%	8.78%
12-24	0.00%	0.00%	7.14%	20.00%	0.00%	2.70%
24-36	0.00%	0.00%	21.43%	46.67%	1.52%	7.43%
>36	0.00%	5.56%	28.57%	0.00%	0.00%	3.38%
No duration for credit card	0.00%	11.11%	0.00%	0.00%	0.00%	1.35%
Not applicable	42.86%	22.22%	35.71%	6.67%	48.48%	38.51%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Repayment modality also differs between the regions. In East and West Africa, most of the respondents pay back every month, whereas in India interviewees mentioned they pay back after harvest and in Latin America at the end of the year (Table A2.11, Annex 2).

Collateral

For 38.51% of all respondents the question whether they were asked for a collateral or not was not applicable. 29.05% indicated that they were asked for a collateral and 32.43% not. In East Africa 48.57% were demanded a collateral (64.71% of whom were women), in India 44.44% (all of them were male), in Southeast Asia 60.00% (22.22% of whom were women), in West Africa 13.64% (33.33% of whom were women). In Latin America, there was no request for a collateral (table 13). In India and SE Asia, often farm/land is used as collateral, whereas in East Africa animals are used, in Southeast Asian a house certificate and in Latin America respondents mentioned they are often requested to deposit money.

Request for collateral	East Africa	India	L America	SE Asia	West Africa	Grand Total
No	11.43%	27.78%	64.29%	33.33%	37.88%	32.43%
female	50.00%	60.00%	88.89%	60.00%	60.00%	64.58%
male	50.00%	40.00%	11.11%	40.00%	40.00%	35.42%
Not applicable	40.00%	27.78%	35.71%	6.67%	48.48%	38.51%
female	42.86%	20.00%	80.00%	0.00%	31.25%	36.84%
male	57.14%	80.00%	20.00%	100.00%	68.75%	63.16%
Yes	48.57%	44.44%	0.00%	60.00%	13.64%	29.05%
female	64.71%	0.00%		22.22%	33.33%	37.21%
male	35.29%	100.00%		77.78%	66.67%	62.79%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 13: Requirement of collateral, differentiated by gender

Allocation of credit received

For the most important loan, respondents were also asked about the purpose for which they used the received credit. In East Africa, the credit was mainly used investments in crop and land management, and to a lesser extent for schooling and livestock management. In India, priority was given to invest in crop management and to a lesser extent to land management and household expenses. In Latin America respondents used the loan for household expenses, crop and land management mainly. In West Africa, the most important loan was allocated to crop management. In Southeast Asia, the loan was predominantly used for investments in aquaculture (Figure 7)

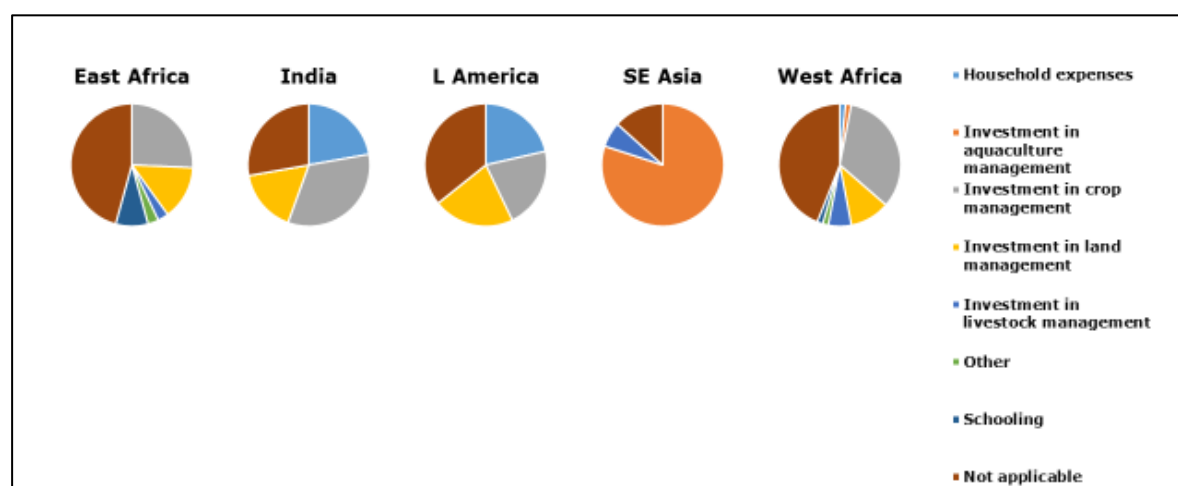


Figure 7: Allocation of credit received

Reasons for not asking for credit

For most of the respondents in all five regions the question about reasons for not asking credit from a bank was not applicable. Relatively few respondents from West Africa and Latin America mentioned that banks have no confidence in farmers as farming is very risky, interest rates are too high and, to a lesser extent, they do know the procedures (Table A2.12, Annex 2).

3.3 Climate smart agriculture and investments

This section presents the results on the investments in different Climate Smart Agriculture practices and technologies including:

1. Soil conservation and land preparation;
2. Water use efficiency or water conservation technologies and practices;
3. Weather forecasting services and/or index based insurances;
4. Nutrient management technologies and practices;
5. Other Climate Smart Agriculture practices and technologies.

For each domain, the same set of questions are applied. Respondents in the Southeast Asian region are only involved in fish farming/ aqua culture. Therefore, they did not reply to questions related to themes 1-4.

3.3.1 Soil conservation and land preparation

Results are presented in Figure 8 and the tables A3.1-3.5 in Annex 3.

In **East Africa** men and women apply most often water management (by 42.86% of the respondents) and nutrient management (by 26.79%)¹ (Table A3.1). 62.86% Of the East Africa respondents invested between 0-50 \$ in soil conservation or land preparation technologies and less than 10% between 100-500\$ last year. Women invested relatively more than men (Table A3.2). The most important institutions to finance these investments include the merry-go-round scheme (27.50% of the respondents) and remittances funds (17.50% of the respondents). Women appear to use more often remittance funds for farm investment than men do (Table A3.3 table). 15% Of the East African interviewees use their own savings to finance these activities. Training (28.26%) and lower interest rates (26.09%) were most frequently mentioned changes to facilitate soil conservation or land preparation technologies or practices. Especially men suggested a lower interest rate (Table A.3.5).

In **India** the Land Laser Leveller to level (irrigated) rice fields is used by 32.14 % of the respondents and 26.79 % use the Turbo Happy Seeder allowing weed to be seeded just after paddy harvesting without the need of rice stubble burning (Table A3.1). Last year 27.78% of the respondents, predominantly women, invested between 100-500\$ in soil conservation-land preparation technologies, 27.78% invested more than 1000\$ (Table A3.2). 44.44% Used their own savings to finance these investments and 11.11% received a loan from the bank. Women received a loan from traders to finance these climate smart activities (Table A3.3). 85.00% Of the respondents indicated not to perceive any risks related to these investments (Table A3.4). 35.00% Of the respondents did not see any need for changes in the financial services delivered, 20% recommended more subsidy to support soil conservation or land preparation technologies or practices (Table A3.5).

For **Latin America** 28.57% of the respondents apply nutrient management as soil management practice, 26% use ploughing and 26.53% practice zero/minimum tillage (Table A3.1). Last year respondents 42.86% invested between 100-500\$ in soil conservation or land preparation technologies and practices and 28.57% (relatively more men) invested between 500-1000\$ (Table A3.2). 70.59% financed these technologies and practices through the sale of farm products (Table A3.3). 42.86% mentioned diseases as major risk (Table 3.4) and 62.50% of the respondents would like to have more subsidies and 18.75% lower interest rates to facilitate soil conservation or land preparation technologies or practices (Table A3.5).

For **Southeast Asia** none of the respondents apply soil conservation and/or land preparation technologies or practices. Questions concerning financing these technologies /practices and related risks were relevant.

¹ Respondents were allowed to mention more than one practice or technology.

For **West Africa** 28.70% of the respondents practice water management and 28.70% RNA (Régénération Naturelle Assistée) (Table A3.1). Last year 38.46% of the respondents did not invest in soil conservation and land preparation and 36.92% 0-50\$ only (Table A3.2). The figures do not show significant differences in investment practices between men and women. A range of different sources are used to finance soil conservation and land management technologies, of which the use of own saving was most frequently noted (Table A3.3). 38.36% Mentioned not to perceive particular risks, 16.44 % perceive the high costs involved as risk (Table A3.4). 11.11% Of the interviewees suggested to increase opportunities to get easy access to financial services (Table A3.5).

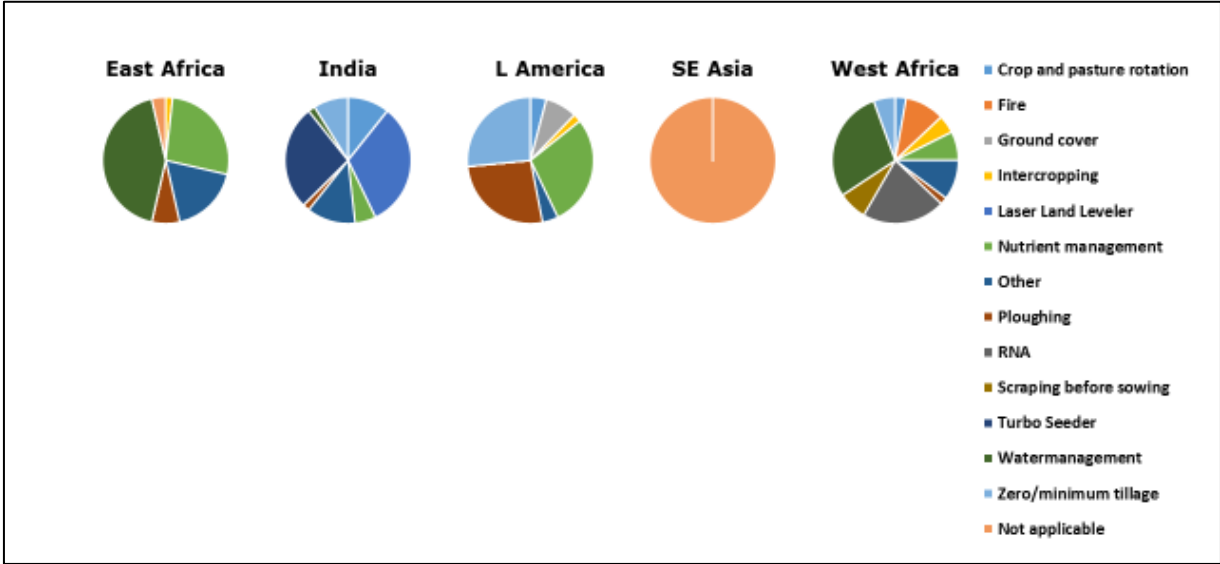


Figure 8: Types of soil conservation or land preparation technologies or practices applied

3.3.2 Water use efficiency or water conservation technologies and practices

Results are presented in figure 9 and in tables A3.6 - A3.10 in Annex 3.

For **East Africa** 35.14% of the respondents apply water conservation technologies and practices and 29.73% irrigation (Table A3.6). 45.71% Of the interviewees invested between 0-50\$ in these technologies and 11.43% (only men) between 100-500\$ last year (Table A3.7). The financial sources used for these investments include a merry-go-round scheme (or any other informal saving network) (by 25.00% of the respondents), remittances funds (by 17.50%) and 'own savings' (by 12.50%) (Table A3.8). Pest and diseases were most frequently mentioned as risks, namely by 21.62%. Risk of droughts was brought up by 16.22% of the interviewees (Table A3.9). The three most frequently cited changes to support water use efficiency or water conservation technologies and practices include training (by 21.05% of the respondents), more subsidy for adaptation (15.79%) and more soft loans (by 15.70%) (Table A3.10).

For **India** 28.57% of the respondents apply bed planting, 26.19% use the laser land leveller and 11.90% Direct Seeded Rice (DSR) (Table A3.6). 33.33% Invested between 0-50\$ in these technologies, 11.11% between 50-100\$, but 22.22% did not invest in any of these last year. Men made relatively larger investment than women (Table A3.7). 38.89% Of respondents indicated that they were self-financing these investments, 11.11% received credit from a bank and 11.1%, especially women, from traders (Table A3.8). 61.11% of the interviewees mentioned not to perceive any risk in relation to these technologies and practices (Table A3.9). The majority of the respondents for whom this question was applicable did not suggest any change in the offered financial services, but 11.11 % recommended a lower interest rate to support water use efficiency or water conservation technologies and practices (Table A3.10).

For **Latin America** 52.94% of the respondents apply water conservation practices, 38.24% mentioned to use drip irrigation as water efficiency technology. Men appear to prefer water conservation practices, whereas women drip irrigation (Table A3.6). 35.71% Of the respondents did not invest water use efficiency or water conservation technologies and practices, 35.71% invested between 0-50\$ and 21.43% between 100-500\$ last year. Noteworthy is that 41.67% of the women did not invest at all (Table A3.7). The CCAFS - Ecohabitats project appears to be an important source of finance for 57.89% of the respondents. 31.58% Used the sale of farm products as source to finance these investments (Table A3.8). 40% mentioned drought as risk for these climate smart technologies and practices, but 33.33% mentioned not to perceive any risk (Table A3.9). Out of the most preferred changes, 29.41% of the respondents recommended more subsidy opportunities and 23.53% suggested a lower interest rate (Table A3.10).

For **Southeast Asia**, none of the respondents applied water use efficiency or water conservation technologies and practices. Questions concerning financing these technologies /practices and related risks were not relevant.

In **West Africa** technologies and practices most frequently applied are RNA (by 25.30%) and tied ridges (24.10%) (Table A3.6). 39.39% Of the interviewees (mainly men) did not invest in these technologies, 25.76% invested between 0-50\$ (Table A3.7). 17.65% Used their own savings to finance these investments (Table A3.8), but for 70.59% this question was not applicable probably due to the fact that they do not investment in this activity 33.82% of the respondents mentioned not to perceive any risk, 17.65% experience injuries when digging pitches and ridges (Table A3.9). No recommendations were made to support this activity (Table A3.10).

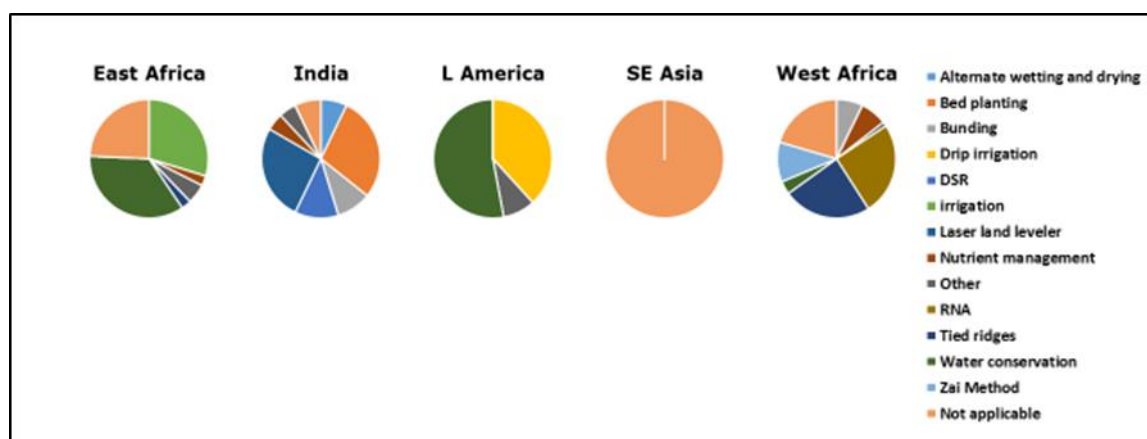


Figure 9: Water use efficiency or water conservation technologies and practices

3.3.3 Weather forecasting services and/or index based insurance

Results are presented in Figure 10 and tables A3.11 –A3.15 in Annex 3.

For women in **East Africa** radio appears a popular means for receiving weather related information. For 77.14% of the respondents the question about the use of weather forecasting services and/or index-based insurance was not applicable (Table A3.11). 14.29% Of the interviewees invested between 0-50\$ in weather forecasting services and/or index based insurance (Table A3.12), for which they used the merry-go-round system (or any other informal saving network), their own savings or remittances funds (Table A3.13). However, 85.71% of the respondents perceived the question on investment as not applicable. Amongst the mentioned risks affecting this climate smart activity, wrong weather prediction was the most frequently cited by men and women. (Table A3.14). More training and subsidy were recommended to facilitate the use of weather forecasting services and/or index based insurance (Table A3.15).

For **India** farmers make use of diverse weather forecasting services, but predominantly the agro advisory service (by 21.62% of the respondents), SMS service (by 21.62%) and internet (by 21.62%). Women appear to ask neighbours for weather forecast information (Table A3.11). Respondents (24.32%) with a crop insurance are all male. 27.78% Males invested between 0-50 \$, 5.56% between 50-100\$ and 5.56% between 500-1000\$ (Table A3.12), for which they used a loan from a bank or their own savings (Table A3.13). Women however did not invest in this activity last year. 72.22% of the respondents do not perceive any risk involved (Table A3.14) and the majority did not suggest any changes to support this weather smart activity. Only relatively few men recommended a lower interest rate (Table A3.15).

For **Latin America** 85.71% of the respondents do not use weather forecasting services and/or index based insurance (Table A3.11).. None of the respondents invested in weather forecasting services or cop insurance last year (Table A3.12),. Respondents suggested free weather forecast to facilitate this activity (Table A3.15).

For **Southeast Asia** the majority of the respondents (59.90%) use TV as weather forecasting services and 13.64% use internet (Table A3.11). None of the respondents mentioned that they invested in weather forecast or cop insurance (Table A3.12).

In **West Africa** 36.36% of the respondents noted that they use weather forecasting services and/or index based insurance. The majority (both men and women) received weather forecast information from the agro advisory service (Table A3.11). 14.29% Invested 0-50\$ in this activity last year. The majority, however, did not spend any money on this activity (Table A3.12). Amongst the risk options provided, wrong weather prediction was most frequently brought up (by 28.57% of the respondents). However, 27.94% of the interviewees do not perceive any risk and for 33.82% the question about risk was not applicable (Table A3.14). Flexible loans, low interest rates and more location specific forecasts were recommended changes suggested by relatively few respondents (Table A3.15).

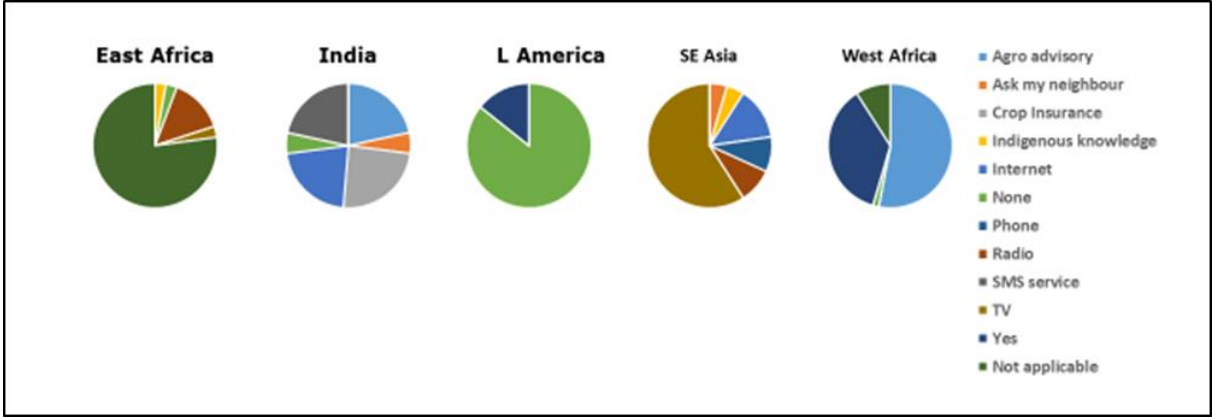


Figure 10: Weather forecasting services and/or index based insurance used/in use

3.3.4 Nutrient management technologies and practices

Results are presented in Figure 11 and tables A3.16 –A3.20 in Annex 3.

For **East Africa**, 29.82% of the respondents apply manure to improve soil fertility, 28.07 % (mainly men) use chemical fertilizers and 7.02 % crop residues on top soils. Women appear to prefer to apply manure for improving soil fertility and structure (Table A3.16). 62.86% of the farmers invested 0-50\$ in nutrient management last year (Table A3.17) for which they (especially women) used a merry-go-round/informal saving network (21.43% of the respondents) and input supplier as financial source (14.29%) (Table A3.18). In terms of risk factors influencing this climate smart activity, 16.22% of the respondents perceived drought as risk and 13.51% the high costs involved (Table A3.19). In order to facilitate this climate smart

activity, 27.27% of the respondents suggested more training activities and 22.73% proposed lower interest rates (Table A3.20).

For **India**, 29.41% of the respondents apply integrated nutrient management practices. The Green Seeker Crop Sensing is in use by 27.45 %, both by men and women. (Table A3.16). 33.33% of the respondents invested 100-500\$ last year, 16.67% 500-1000\$ and 11.11% invested more than 1000\$. (Table A3.17) Men only made the relative larger investments, but 14.29% of the male respondents did not invest at all. 61.51% Of the farmers financed investments from their own savings and 11.11% (especially women) received a loan from a trader. (Table A3.17). Women suggested more soft loans to support this climate smart activity (Table A3.20).

In **Latin America** dominant nutrient management technologies and practices include: PH neutralization with lime (by 29.55% of the respondents), application of manure (by 27.70%), crop residues on top soils (by 22.73%) and 20.45% apply chemical fertilizer (Table A3.16). 42.86% Invested 100-500\$ and 28.57% 500-1000 \$ (Table A3.17) for which respondents mainly used revenues from the sale of farm products (Table A3.18). 42.11 % Of farmers see pests and diseases as risks affecting this climate smart activity and 15.79% mentioned excessive rainfall as risk factor (Table A3.19). In order to facilitate this climate smart activity, 41.18% of the respondents (mainly men) suggested having more specific funds for adaptation to climate change and 23.53% recommended lower interest rates. Women suggested subsidy on fertilizers and manure (Table A3.20).

Southeast Asia respondents perceived this question as non-applicable

For **West Africa** 33.33% of the respondents (men and women) apply manure, 16.19 % compost and 15.24% apply chemical fertiliser to improve soil fertility (Table A3.16). 28.79% Of the respondents invested 0-50\$, 13.64 invested 100-500\$ (Table A3.17). Most of the farmers for whom this question was applicable used their own savings to finance nutrient management (Table A3.18). Especially women perceive injuries during digging pitches and ridges as risks affecting this activity (Table A3.19). Out of the 52% of the respondents who considered the question on recommendations for change applicable, 18.18% did not suggest any changes, relatively few proposed lower interest rates on loans to support nutrient management (Table A3.20).

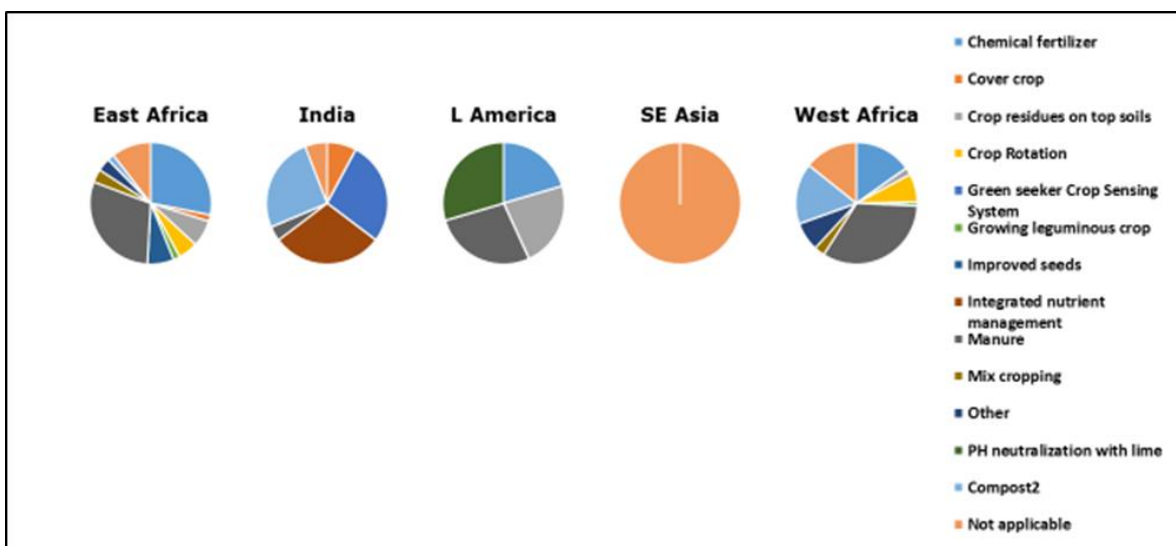


Figure 11: Nutrient management technologies and practices in applied

3.3.5 Other climate smart technology or practice? (e.g. agro forestry, livestock management)

Results are presented in Figure 11 and tables A3.21 - A3.25 in Annex 3).

For **East Arica** other climate smart technology or practices include agroforestry (mentioned by 17.50% of the respondents, especially men), animal rearing (by 17.50%, especially women), livestock management (10.00%), tree planting (5.00%) and others not provided in the list (Table A3.21). For the 55% for which this question was applicable 42.86% invested 0-50\$ in these activities (Table A3.22) for which they mainly used the merry-go-round system or any other informal saving network (26.83%) (Table A3.23). Major risks affecting these activities include 'not enough (stored) water (21.57%) and pest and diseases kills animals (21.57%) (Table A3.24). Suggestion to facilitate these other climate smart activities included training (men and women), subsidy, soft loans and lower interest (only women) (Table A3.25).

For **India** 72.22% of the respondents do not practice any other climate smart activity, 5.56% (men only) of the carry out agroforestry activities (Table A3.21).

For **Latin America** respondents carry out diverse other climate smart activities including food safety home garden (by 33.33% of the respondents, men and women), the use of drought resistant varieties (30.30%, especially by men), wind break trees (15.15%) and climate smart cherry tomato varieties (12.12%, especially by women) (Table A3.21). 21.43% of te respondents invested 100-500\$ last year and 14.29% 500-1000\$. Women appear to invest relatively more in these other climate smart activities than men (Table A3.22). The CCAFS-Ecohabitats project is the main source of funding of these climate smart activities (Table A3.23). Damage from wind and rain and not enough (stored) water are seen as major risks affecting the activities (Table A3.24). Subsidy for adaptation measures to climate change with technical support and lower interest rates are preferred changes to facilitate these other climate smart activities (Table A3.25).

For **Southeast Asia**, all respondents practice aquaculture (Table A3.21). 60% of the respondents (men and women) invested more than 1000\$ in their fish farm / aqua culture and 33.33% between 500-1000\$ (Table A3.22) 33.33% received a loan from a bank to finance these activities, 28.57% used their own saving and 23.81% the merry go round system or any other saving network (Table A3.23). Especially women see water pollution as a major risk affecting aquaculture (Table A3.24). 50% Of the respondents, especially men, suggested higher loans to support fish farming/aqua culture (Table A3.25).

In **West Africa**, other relevant practiced climate smart activities include tree planting (by 28.09% of the respondents, men and women), agroforestry (8.99%, mainly men) and animal rearing (by 20.22%, mainly women) (Table A3.21). As to investments, 31.82% invested between 0-50\$ last year, but 37.88% of the respondents did not investment in these activities at all (Table A3.22). For whom this question was applicable, 15.38% used their own revenues to finance these activities (Table A3.23). Recommendations to facilitate these other climate smart activities included training (men and women), lower interest (mainly men) and soft loans (mainly men) (Table A3.25).

For the five CCAFS regions, almost all respondents pointed out they will increase investment in CSA technologies or practices on their farm if they have (additional) access to a loan or any other financial incentive (Figure 12).

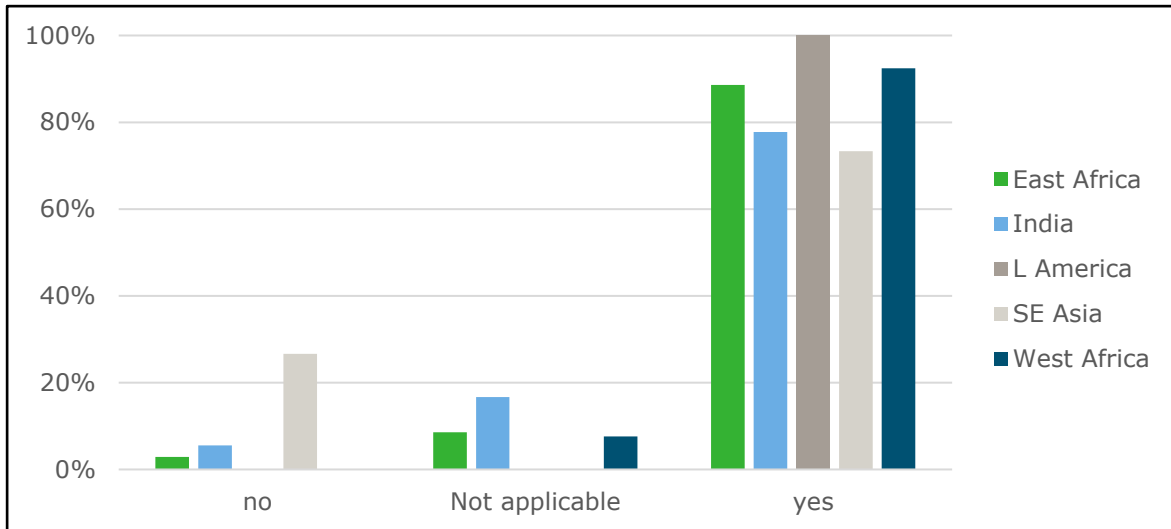


Figure 12: Willingness (% of respondents) to invest more in CSA if farmers/SMEs had (additional) access to finance

In Latin America, Southeast Asia and West Africa, 50% or more of the respondents (men and women) received a training in CSA technologies and practices. In East Africa and India, these figures are a bit lower. Respondents (men and women) followed slightly more trainings in agri business development than in the use of financial products and service (Figure@). In West Africa, training in agri business development seems to be more popular amongst women than men. Female Indian respondents did not receive any training in agri-business development and the use of financial products and service. Only in Southeast Asia, respondents received more training in the use of financial products and service than in agri business development.

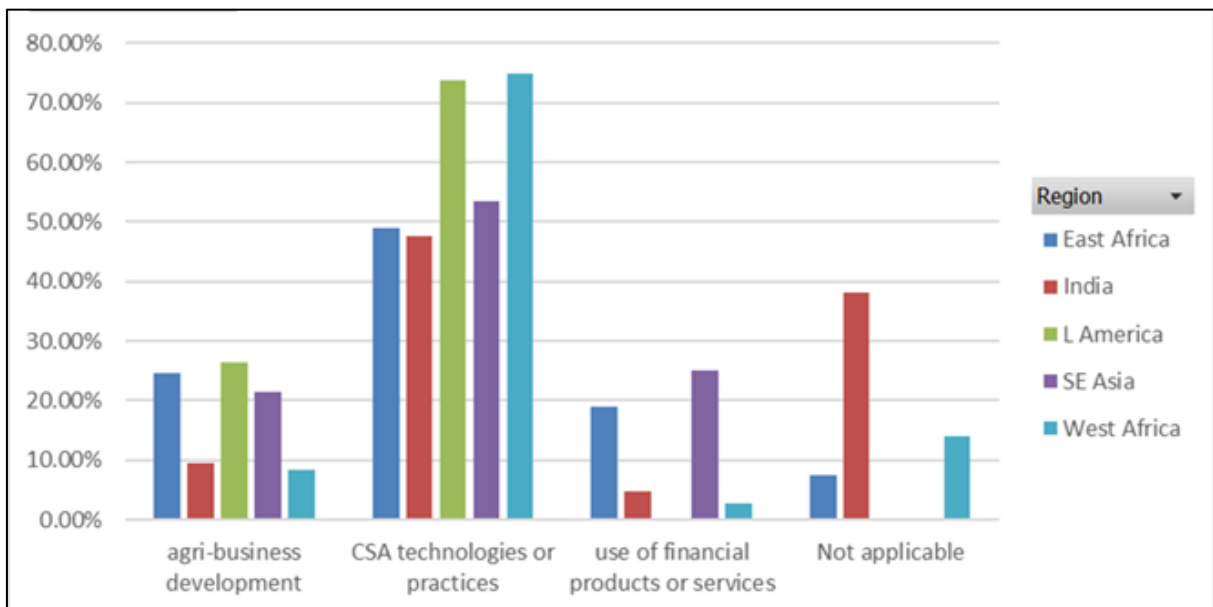


Figure 13: Training

4 Conclusions and perspectives

The inventory 'demand and experiences with financial products and services', though limited and explorative, has generated first insights into farmers of climate smart villages and their awareness, access, use and demand of financial products and services' and signals critical issues in the support of climate smart agriculture technologies and practices.

4.1 Preliminary insights into demand and experiences with financial products and services'

The following preliminary insights can be presented in this stage:

- *Financial Services for making payments:* Farmers in the CCAFS regions make use of different financial service providers. Banks are relatively more frequently in use in India and Southeast Asia, Mobile Money transfer in East and West Africa and in Latin America farmers predominantly use the post office for making payments.
- *Financial services for savings:* Banks increase in importance for saving purposes in all regions except from Southeast Asia where farmers use more frequently SACCOs. Banks are used for saving by male and female farmers. For Indian female farmers traders are important for saving money.
- *Financial services for credit/loans:* The picture for receiving credit /loans is more diverse. Banks are most frequently used in Latin America, Southeast Asia and India whereas in East African farmers prefer a mobile money system and West African farmers family/friends, banks and SUSUs.
- *Financial services for insurances:* we see a difference in adoption between different regions. Few farmers in East Africa, West Africa and Southeast Asia use financial services to obtain an insurance. In India and Latin America, banks and insurance agencies appear to be most popular for insurance purposes.
- *Important information sources:* Training, self-learning, government extension services, farmers associations, SACCOs, family and friends appear to be frequently used strategies and sources for both male and female farmers to learn about financial products and services.
- *Strategies to overcome financial losses:* In East and West Africa selling livestock or crops to overcome financial losses appear to be a frequently used strategy for men and women to overcome financial losses due to e.g. a bad harvest or illness in the family. Borrowing money from family and friends is a popular strategy for women in Latin America.

Use of financial institutions

The percentage of respondents with a bank account vary significantly between CCAFS regions and between men and women. In India, all respondents do have a bank account, whereas in Southeast Asia only 26%. In India, all female respondents have a bank account, in Latin America 86%, but in Southeast Asia 20% of the female interviewees. Micro-finance institutions and cooperatives are also popular formal financial institutions. SACCOs are in use in East Africa and Southeast Asia. Amongst the informal ways of accessing finance, the merry go round scheme (or any other informal saving network) appears to be most frequently used in all regions, except in India where traders seem to be popular.

Farmers appear to utilise different strategies for financing farm investment. Overall, it seems that self-supporting and not using any external source of finance is the strategy most frequently used. In the regions Latin America and East Africa, the selling of livestock or crops is an important way to create funds for farm investments. The amount of credit received last year varies largely amongst the five regions. For the five CCAFS regions, 64% of the respondents received credit last year, 52% of whom were women. The amount of credit taken varied significantly between the regions. Relatively large loans (1000\$) were

taken by Indian and Southeast Asian respondents, but by males mainly. East and West Africa respondents received small amount of credits, predominantly by women.

Except from Latin America and Southeast Asia, most credits are reimbursed in a period of 3- 24 months. Repayment modalities difference between the regions. In East and West Africa most of the respondents pay back every month, whereas in India farmers pay back after harvest and in Latin America at the end of the year. Interest rates varied largely even within a particular region. Unfortunately, the interviews did not address the specific reasons for these differences. Likewise, the results do not provide insight whether women pay different interest than men for the same amount and duration of the credit. Reimbursement periods and repayment modalities also vary between regions. Detailed research is needed to better explain the reasons behind these differences. Last year's credit is predominantly used for farm investments such as crop and land management. In Southeast Asia, loans are mainly used to invest in aquaculture.

Climate smart agriculture and investments

Results on investments in climate smart agriculture technologies and practices are largely in line with the general results on access and use of financial products and services. Hereafter, we present observations on particular types of climate smart agricultural activities.

Soil conservation and land preparation activities: Farmers in East Africa, India, Latin America and West Africa apply and invest in different soil conservation and land preparation activities, for which they use diverse formal and informal financial institutions. West Africa has relatively the highest percentage of respondents who do not invest in climate smart agriculture technologies and practices. The highest investments are made by Indian farmers. Interesting is the use of remittance funds by women in East Africa to finance soil conservation and land preparation activities and the role of traders for Indian women. Risks affecting this climate smart technology are related to pest, diseases, and high costs involved. Suggested changes in the financial products and services include training, lower interest rates on loans, more subsidy and increased opportunities to get easy access to financial services

Water use efficiency or water conservation technologies and practices: Farmers in East Africa, India, Latin America and West Africa apply and invest in different water use efficiency or water conservation technologies and practices including (drip) irrigation, bed planting, water conservation, direct seeded rice. West Africa and Latin America have relatively the highest percentage of respondents who do not invest in this climate smart agricultural activity, and again Indian farmers make relatively large investments. Noteworthy is the role of the CCAFS-Eco-habitats project that appears to be an important source of finance for Latin America respondent. Risks affecting this climate smart technology are pest, diseases, and droughts. Recommendations for financial products and services to facilitate this activity include training, lower interest rates on loans and more subsidy on adaptation.

Weather forecasting services and/or index based insurances: In India, West Africa and Southeast Asia farmers are using a range of sources to receive information on weather forecast. A high percentage of Latin American respondents do not use weather forecasting services. For a relatively high percentage of East African respondents the question on Weather forecasting services was not applicable. This might be because people do not make use of these services at all. Few Indian (male) farmers do have a crop insurance. A relatively small percentage of respondents from East Africa, India and West Africa invest small amount of money (<50\$) in this type of activity. Indian farmers do make the relatively larger investments (500\$-1000\$), however they are relatively few in number. The most frequently cited risk is 'wrong whether prediction'. Recommended changes to support this weather smart activity include training, more subsidy and more location specific forecasts.

Nutrient management technologies and practices: India, East Africa, West Africa and Southeast Asia a wide range technologies and practices are in use of which the application of manure, chemicals fertilizers and compost are amongst the most frequently cited. Larger investments are made by Indian and Latin American farmers, smaller investments (0-50\$) by East and West African farmers. Risks affecting this climate smart activity are related to droughts, pests and diseases, injuries during digging pitches and

ridges. Suggested changes in the financial products and services include lower interest rates on loans, soft loans and more subsidy on fertilizers and manure.

Other climate smart technology or practice. In Southeast Asia, all respondents practice aquaculture. For East and West Africa, livestock and animal rearing are put forward as important other climate smart activities. In Latin America home garden and the use of drought resistance crop varieties are mentioned in particular. Larger investments (500\$-1000\$, >1000 \$) are mainly made by Southeast Asian farmers for which they receive credit from banks, a merry go round scheme and their own revenues. Water pollution is seen as a major risk affecting aquaculture. Higher loans are suggested to facilitate aquaculture in Southeast Asia.

For the five CCAFS regions almost all respondents pointed out that, they would increase investment in diverse CSA technologies or practices on their farm if they had (additional) access to a loan or any other financial incentive. Naturally it would make sense for a respondent to be positive towards additional finance especially when the conditions are not specified (yet), so this would need further attention in order to draw proper conclusions.

4.2 General conclusions

Overall most of the farmers applying CSA practices (77%), invested either very small amounts (< US\$ 100) or not at all. The rationale behind this cannot be found from the survey. Perhaps CSA practices do not require more investments, but it is equally possible that the farmers would have liked to invest more but were not able to or prioritised other investments or expenditures. We have also found (for example in table 4 and 10) that the use of financing through banks is quite high. An unexpected result is that the income from temporary jobs (table 4) is quite low.

More than half of the farmers was able to finance the CSA practices themselves, either by self-financing, or by selling assets, using remittance funds or drawing from their VSLA or merry-go-round. Approximately 8% financed it through financial institutions (banks, MFIs, SACCOs) and 14% from trade-related sources (traders, shopkeepers, ESSOKO, savings collectors).

The financial profiles differ for soil practices, water practices, weather-practices, nutrient practices and other practices. Although the average amounts and sources of financing differ, these differences are not significant or systematic. It would seem that the differences in financial profiles between individual practices are more significant than the differences between types of practices. Furthermore the influence of specific context is quite strong (location, available services and institutional infrastructure).

The main suggestions **from the farmers**, in order to enhance the application of CSA practices, can be grouped into the following categories:

- *Improvements to the financial product:* roughly 18% of the farmers suggests improvements to the financial products, mainly related to credit. The most frequent suggestion is to have lower interest rates or soft loans, other suggestions relate to changes in the credit product (credit in kind, more flexible loans, higher amounts, easier access).
- *Subsidies:* roughly 11% of the farmers suggest subsidies of some kind. The suggestions range from free weather forecasts, to subsidies for fertilizer and manure, or for adaptation measures.
- *Training:* roughly 9% of the farmers suggests training, sometimes in general and sometimes on specific issues (irrigation, awareness creation of financial services).
- *Other services:* smaller numbers of farmers make other suggestions, for example more location-specific and language-specific weather forecasts, or tractor services or market information. These suggestions are not as generalized as the other suggestions mentioned in the previous points.

4.3 Critical issues and future perspectives

The survey revealed diverse critical issues in the access, awareness and use of financial services and products

Interest rate

Interest rates are not a primary focus considering access to finance. As a relatively high percentage of respondents suggest lower interest rates to facilitate climate smart technologies and practices, it could be considered to improve the understanding of diversity in credit for single and layered use of climate smart technologies and practices. We suggest to select cases and/or support projects where interest rates are further considered relevant with a focus on formal and informal financial institutions, interest rates, collateral, reimbursement and repayment periods as well as the relationships between these aspects. Furthermore such a study could design and implement a pilot in which different financial modalities can be tested

Training

All respondents involved in this survey do have a link with the CCAFS programme, which explains the high rate of those who received a training in climate smart technologies and practices. The percentage of respondents who followed a training on financial products and services as well as on business development is much lower. Considering the number of interviewees recommending more training (without specifying its subject), the selection of case studies/support should be informed by opportunities to:

- Include capacity building of smallholder farmers in the use of financial products and services, and business development;
- Include capacity building of managers of financial institutes in climate change and climate smart agriculture related risks on investments;
- Develop and test training/capacity building material.

Insight into costs and benefits of climate smart agriculture technologies and practices

An issue indirectly emerging from the survey is the need to have insight into (economic/social) costs and benefits of (a mix of) climate smart agriculture technologies and practices. Formal and informal financial institutions as well as farmers who want to borrow money for investing in climate smart agriculture technologies and practices need to know the added value of these technologies and practices as well as the risks involved.

For the selection of future cases and/or support of the granted projects in the call of the Food & Business Global Challenges Programme, we suggest to select cases and/or support projects were in addition to knowledge generation on financial products and services, insights into (economic /social) costs and benefits of climate smart agriculture technologies and practices will be developed as well.

5 References

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Annex 1 Granted projects Food & Business Global Challenges Programme (CCAFS)

Title granted project	Brief summary
<p>Inclusive and climate smart business models in Ethiopian and Kenyan dairy value chains</p>	<p>'Business models Ethiopian and Kenyan dairy chains' - This research aims to describe business models of chain actors and supporters to identify opportunities for scaling up good climate smart practices. It is linked to "Nationally Appropriate Mitigation Actions" (NAMA) in Kenya to reduce GHG emissions from dairy production. Six dairy value chain case studies will be purposely selected, three in Kenya and three in Ethiopia, with varying degrees of market-orientation. Three PhD students will be lead investigator, each in two selected chains.</p>
<p>Understanding and scaling Organizational structures for SMALLholder REsilience (OSMARE) in Malawi, Mozambique, Tanzania, Zambia and Zimbabwe</p>	<p>'Understanding and scaling Organisations for SMALLholder REsilience' - This project seeks to understand when and how the organization of new business models linking farmers to markets leads to resilience of smallholders, in particular youth and women. Resilience will be assessed in terms of development of farmers' adaptive capacity and their engagement with other stakeholders in the system. During and after the investigation, personal and group trainings will provide spaces for smallholders, their representatives and stakeholders to exchange knowledge and reciprocally foster their capacities.</p>
<p>Upscaling CSA with small-scale food producers organised via VSLAs: Financing for adoption, behavioural change and resilience in rural Iringa Region, Tanzania</p>	<p>Upscaling climate smart agriculture via micro finance' - The small-scale agriculture sector and food systems in rural Tanzania are in critical need of investment towards Climate smart Agriculture (CSA) that satisfy criteria of sustainability, profitability, equity and resilience (SuPER). This project will provide practical and conceptual insight in the appropriate combinations of business training (through Farmer Field & Business Schools - FFBS) and financial services (through Village Savings & Loans Associations – VSLA) that support community-based adaptation (CBA) action plans.</p>
<p>Multiple pathways and inclusive low emission development: navigating towards leverage points in the East-African dairy sector</p>	<p>'Inclusive Low-Emission Development (i-LED): East African dairy' - Reducing emissions intensity of livestock is high on the agenda in East Africa. This research analyses institutional conditions for scaling inclusive Low-Emission Development (i-LED) interventions that account for the diversity of practices, development pathways and interests in the Kenyan and Tanzanian dairy sectors. The project engages governments, leading dairy firms, service providers and male and female livestock keepers in research-driven dialogues to design a portfolio of context-sensitive LED-approaches reducing emissions intensity while enhancing socio-economic inclusivity.</p>
<p>Understanding and improving scaling readiness of climate smart, nutrient management decision support tools (DST) in different institutional environments: Ethiopia & Tanzania</p>	<p>'Scaling climate smart nutrient management tools in Africa' - This project aims to improve the delivery and uptake of nutrient management advisory tools that aim to increase African maize production while avoiding increases in greenhouse gas emissions. Working directly with different types of farmers and advisory services, the project examines the 'user logics' and institutional environments that affect the large-scale uptake of these climate smart nutrient management advisory tools by smallholder farmers in Ethiopia and Tanzania.</p>

<p>Citizen's Science approach to climate smart and nutrition sensitive seed value chains for food and nutrition security in Uganda and Ethiopia</p>	<p>'Citizen's Science for climate smart nutritious varieties' - Traditionally new varieties of crops are being tested by agricultural scientists, with farmers, in controlled trials. In 'citizen science' samples of candidate varieties are send to a large group of farmers. They test the candidate varieties and provide simple feedback on its performance. This project will bring 'citizen science' into use in variety testing and registration in Ethiopia and Uganda. Focus will be on selection of varieties with high nutritional value adapted to climate stress.</p>
<p>Promoting climate resilient seed varieties: Smallholder barriers to adoption and willingness to pay for seed of drought tolerant maize varieties in Uganda</p>	<p>'Promoting climate resilient maize varieties in Uganda' - The uptake of certified maize seed by smallholder farmers is persistently low despite the fact that this seed has much higher yield potential and is often more tolerant to drought than the varieties traditionally grown by farmers. This project investigates the main sources of risk for smallholder farmers, and whether offering appropriate insurance products together with maize seed will increase their willingness to pay for drought tolerant maize varieties.</p>
<p>Using Climate Smart Financial Diaries for Scaling in the Nyando Basin, Kenya</p>	<p>'Climate smart Financial Diaries for Scaling in Kenya' - Nyando Basin in western Kenya experiences agricultural stagnation, environmental degradation and deepening poverty, aggravated by climate change. Previous CCAFS-projects identified the combination drought-resistant breeds of goats/horticulture/agroforestry as a promising strategy that is climate-resilient and climate smart in closing nutrient cycles. This project will support upscaling this business model addressing three challenges: (1) designing a conducive financial environment, (2) identifying additional value chain partners, and (3) identifying constraints, opportunities and required policy interventions at landscape level.</p>

Annex 2 Survey results (part 1)

Table A2.1: Financial institutions used for transfer of money (disaggregated by gender)

Row Labels	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	2.78%	52.94%	11.76%	38.89%	32.31%	29.79%
female	100.00%	16.67%	100.00%	42.86%	61.90%	50.00%
male	0.00%	83.33%	0.00%	57.14%	38.10%	50.00%
Family/Friends	0.00%	41.18%	5.88%	27.78%	10.00%	14.04%
female		35.71%	100.00%	20.00%	61.54%	45.45%
male		64.29%	0.00%	80.00%	38.46%	54.55%
Mobile Money	97.22%	2.94%	0.00%	0.00%	56.92%	46.81%
female	54.29%	0.00%			41.89%	45.45%
male	45.71%	100.00%			58.11%	54.55%
Post office	0.00%	0.00%	82.35%	0.00%	0.00%	5.96%
female			85.71%			85.71%
male			14.29%			14.29%
Trader	0.00%	2.94%	0.00%	0.00%	0.00%	0.43%
male		100.00%				100.00%
Not applicable	0.00%	0.00%	0.00%	33.33%	0.77%	2.98%
female				33.33%	100.00%	42.86%
male				66.67%	0.00%	57.14%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.2: Financial institutions used for savings, disaggregated by gender

Row Labels	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	30.61%	58.06%	83.33%	12.50%	34.78%	39.30%
female	53.33%	22.22%	80.00%	0.00%	47.50%	47.78%
male	46.67%	77.78%	20.00%	100.00%	52.50%	52.22%
Cooperative	0.00%	0.00%	11.11%	0.00%	0.00%	0.87%
female			100.00%			100.00%
family/friends	4.08%	35.48%	5.56%	0.00%	18.26%	15.28%
female	100.00%	18.18%	100.00%		33.33%	34.29%
male	0.00%	81.82%	0.00%		66.67%	65.71%
Informal saving network	0.00%	0.00%	0.00%	31.25%	0.00%	2.18%
female				20.00%		20.00%
male				80.00%		80.00%
MFI	2.04%	0.00%	0.00%	0.00%	7.83%	4.37%
female	100.00%				44.44%	50.00%
male	0.00%				55.56%	50.00%
Mobile Money	48.98%	0.00%	0.00%	0.00%	9.57%	15.28%
female	54.17%				63.64%	57.14%
male	45.83%				36.36%	42.86%
SACCO	0.00%	0.00%	0.00%	0.00%	0.87%	0.44%

female					100.00%	100.00%
SUSU	0.00%	0.00%	0.00%	0.00%	22.61%	11.35%
female					57.69%	57.69%
male					42.31%	42.31%
trader	0.00%	6.45%	0.00%	0.00%	0.00%	0.87%
female		100.00%				100.00%
VSLA	6.12%	0.00%	0.00%	0.00%	4.35%	3.49%
female	100.00%				20.00%	50.00%
male	0.00%				80.00%	50.00%
Not applicable	8.16%	0.00%	0.00%	56.25%	1.74%	6.55%
female	50.00%			44.44%	0.00%	40.00%
male	50.00%			55.56%	100.00%	60.00%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.3: Sources used for credit, disaggregated by gender

Row Labels	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	16.67%	35.90%	82.35%	48.15%	25.47%	32.07%
female	87.50%	0.00%	85.71%	23.08%	44.44%	44.74%
male	12.50%	100.00%	14.29%	76.92%	55.56%	55.26%
Business partners	4.17%	0.00%	0.00%	0.00%	0.00%	0.84%
male	100.00%					100.00%
Cooperative	2.08%	2.56%	5.88%	0.00%	0.00%	1.27%
female	100.00%	0.00%	100.00%			66.67%
male	0.00%	100.00%	0.00%			33.33%
Family/Friends	6.25%	20.51%	11.76%	7.41%	26.42%	18.14%
female	66.67%	50.00%	100.00%	0.00%	39.29%	44.19%
male	33.33%	50.00%	0.00%	100.00%	60.71%	55.81%
Informal saving network	2.08%	0.00%	0.00%	37.04%	0.00%	4.64%
female	100.00%			40.00%		45.45%
male	0.00%			60.00%		54.55%
MFI	6.25%	0.00%	0.00%	0.00%	10.38%	5.91%
female	66.67%				45.45%	50.00%
male	33.33%				54.55%	50.00%
Mobile Money	31.25%	0.00%	0.00%	0.00%	0.94%	6.75%
female	53.33%				0.00%	50.00%
male	46.67%				100.00%	50.00%
moneylender	0.00%	7.69%	0.00%	0.00%	5.66%	3.80%
female		33.33%			16.67%	22.22%
male		66.67%			83.33%	77.78%
SACCO	8.33%	0.00%	0.00%	0.00%	0.94%	2.11%
female	50.00%				100.00%	60.00%
male	50.00%				0.00%	40.00%
SUSU	0.00%	0.00%	0.00%	0.00%	23.58%	10.55%
female					56.00%	56.00%
male					44.00%	44.00%
Trader	0.00%	33.33%	0.00%	0.00%	0.00%	5.49%
female		30.77%				30.77%

male		69.23%				69.23%
VSLA	14.58%	0.00%	0.00%	0.00%	1.89%	3.80%
female	100.00%				0.00%	77.78%
male	0.00%				100.00%	22.22%
Not applicable	8.33%	0.00%	0.00%	7.41%	4.72%	4.64%
female	0.00%			0.00%	20.00%	9.09%
male	100.00%			100.00%	80.00%	90.91%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.3: Sources used for insurance, disaggregated by gender

Row Labels	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	27.03%	36.36%	26.67%	0.00%	1.23%	14.92%
female	20.00%	16.67%	75.00%		0.00%	25.93%
male	80.00%	83.33%	25.00%		100.00%	74.07%
Cooperative	2.70%	3.03%	20.00%	0.00%	0.00%	2.76%
female	0.00%	0.00%	100.00%			60.00%
male	0.00%	100.00%	0.00%			20.00%
(blank)	100.00%	0.00%	0.00%			20.00%
Government organization	0.00%	27.27%	0.00%	0.00%	0.00%	4.97%
female		33.33%				33.33%
male		66.67%				66.67%
Insurance Company	16.22%	30.30%	33.33%	20.00%	38.27%	30.39%
female	100.00%	10.00%	80.00%	33.33%	51.61%	50.91%
male	0.00%	90.00%	20.00%	66.67%	48.39%	49.09%
MFI	0.00%	0.00%	0.00%	0.00%	1.23%	0.55%
female					100.00%	100.00%
Mobile Money	8.11%	0.00%	0.00%	0.00%	4.94%	3.87%
female	66.67%				100.00%	85.71%
male	33.33%				0.00%	14.29%
SACCO	0.00%	0.00%	0.00%	0.00%	13.58%	6.08%
female					36.36%	36.36%
male					63.64%	63.64%
Not applicable	45.95%	3.03%	20.00%	80.00%	40.74%	36.46%
female	58.82%	100.00%	100.00%	33.33%	33.33%	43.94%
male	41.18%	0.00%	0.00%	66.67%	66.67%	56.06%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.4: Sources used to improve knowledge about financial products and services, disaggregated by gender

Source of information	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	0.86%	14.89%	0.00%	11.11%	2.27%	3.97%
female	100.00%	14.29%		50.00%	75.00%	43.75%
male	0.00%	85.71%		50.00%	25.00%	56.25%
CCAFs Agent	0.00%	0.00%	0.00%	0.00%	1.70%	0.74%
female					66.67%	66.67%
male					33.33%	33.33%
Community members	1.72%	14.89%	0.00%	5.56%	5.68%	5.21%

female	100.00%	14.29%		100.00%	50.00%	47.62%
male	0.00%	85.71%		0.00%	50.00%	52.38%
Development partners	4.31%	2.13%	0.00%	0.00%	9.09%	5.46%
female	40.00%	0.00%			37.50%	36.36%
male	60.00%	100.00%			62.50%	63.64%
Extension agent	5.17%	0.00%	0.00%	0.00%	5.68%	3.97%
female	66.67%				40.00%	50.00%
male	33.33%				60.00%	50.00%
Facilitating agencies	7.76%	0.00%	39.29%	8.33%	5.11%	7.94%
female	66.67%		81.82%	0.00%	44.44%	59.38%
male	33.33%		18.18%	100.00%	55.56%	40.63%
Farmers associations	7.76%	4.26%	7.14%	16.67%	10.23%	9.18%
female	33.33%	0.00%	50.00%	33.33%	55.56%	43.24%
male	66.67%	100.00%	50.00%	66.67%	44.44%	56.76%
Friends/Family	2.59%	17.02%	3.57%	13.89%	10.23%	8.68%
female	66.67%	12.50%	100.00%	20.00%	38.89%	34.29%
male	33.33%	87.50%	0.00%	80.00%	61.11%	65.71%
Government extension services	16.38%	8.51%	0.00%	0.00%	9.09%	9.68%
female	36.84%	50.00%			18.75%	30.77%
male	63.16%	50.00%			81.25%	69.23%
Internet	0.86%	4.26%	0.00%	0.00%	0.00%	0.74%
female	0.00%	50.00%				33.33%
male	100.00%	50.00%				66.67%
MFI	0.86%	0.00%	0.00%	0.00%	1.14%	0.74%
female	100.00%				100.00%	100.00%
News, magazines	2.59%	8.51%	0.00%	0.00%	0.00%	1.74%
male	100.00%	100.00%				100.00%
Radio	6.90%	4.26%	0.00%	0.00%	7.95%	5.96%
female	50.00%	0.00%			50.00%	45.83%
male	50.00%	100.00%			50.00%	54.17%
SACCO	2.59%	0.00%	0.00%	16.67%	0.00%	2.23%
female	33.33%			50.00%		44.44%
male	66.67%			50.00%		55.56%
Savings & credit group	6.90%	0.00%	0.00%	0.00%	2.27%	2.98%
female	87.50%				50.00%	75.00%
male	12.50%				50.00%	25.00%
School	0.00%	2.13%	0.00%	0.00%	1.14%	0.74%
female		100.00%			50.00%	66.67%
male		0.00%			50.00%	33.33%
Self-learning	6.03%	4.26%	25.00%	22.22%	13.07%	11.66%
female	71.43%	0.00%	85.71%	37.50%	56.52%	57.45%
male	28.57%	100.00%	14.29%	62.50%	43.48%	42.55%
SMS services	0.86%	4.26%	0.00%	0.00%	2.84%	1.99%
female	100.00%	0.00%			60.00%	50.00%
male	0.00%	100.00%			40.00%	50.00%
Spouse	0.86%	2.13%	0.00%	0.00%	0.57%	0.74%
female	100.00%	100.00%			100.00%	100.00%
Traders/ middlemen	1.72%	4.26%	0.00%	0.00%	0.57%	1.24%
female	50.00%	0.00%			100.00%	40.00%

male	50.00%	100.00%			0.00%	60.00%
Trainings	22.41%	0.00%	25.00%	2.78%	9.09%	12.41%
female	57.69%		85.71%	0.00%	50.00%	58.00%
male	42.31%		14.29%	100.00%	50.00%	42.00%
Other	0.86%	4.26%	0.00%	2.78%	0.00%	0.99%
female	100.00%	0.00%		0.00%		25.00%
male	0.00%	100.00%		100.00%		75.00%
Not applicable	0.00%	0.00%	0.00%	0.00%	2.27%	0.99%
female					50.00%	50.00%
male					50.00%	50.00%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.5: Banks were respondents have an account, gender disaggregated

Banks	East Africa	India	L America	SE Asia	West Africa	Grand Total
Agribank	0.00%	0.00%	0.00%	26.67%	0.00%	2.60%
female				25.00%		25.00%
male				75.00%		75.00%
Axis bank	0.00%	18.18%	0.00%	0.00%	0.00%	2.60%
female		25.00%				25.00%
male		75.00%				75.00%
Banco de Bogotá	0.00%	0.00%	73.33%	0.00%	0.00%	7.14%
female			90.91%			90.91%
male			9.09%			9.09%
BBVA	0.00%	0.00%	6.67%	0.00%	0.00%	0.65%
female			100.00%			100.00%
CNCAS	0.00%	0.00%	0.00%	0.00%	1.52%	0.65%
male					100.00%	100.00%
Community bank	0.00%	0.00%	0.00%	0.00%	1.52%	0.65%
female					100.00%	100.00%
Coomeva	0.00%	0.00%	6.67%	0.00%	0.00%	0.65%
female			100.00%			100.00%
Cooperative	2.78%	0.00%	0.00%	0.00%	0.00%	0.65%
female	100.00%					100.00%
Crédit Mutuel du Sénégal (CMS)	0.00%	0.00%	0.00%	0.00%	10.61%	4.55%
female					14.29%	14.29%
male					85.71%	85.71%
Credit union	0.00%	0.00%	0.00%	0.00%	1.52%	0.65%
female					100.00%	100.00%
Diamond Winners	0.00%	0.00%	0.00%	0.00%	1.52%	0.65%
female					100.00%	100.00%
Equity bank	8.33%	0.00%	0.00%	0.00%	0.00%	1.95%
female	66.67%					66.67%
male	33.33%					33.33%
HDFC Bank	0.00%	13.64%	0.00%	0.00%	0.00%	1.95%
male		100.00%				100.00%
KCB	25.00%	0.00%	0.00%	0.00%	0.00%	5.84%
female	55.56%					55.56%
male	44.44%					44.44%
KWE (KENYA WOMEN ENTERPRISE)	2.78%	0.00%	0.00%	0.00%	0.00%	0.65%
female	100.00%					100.00%

MFI - Rafiki	2.78%	0.00%	0.00%	0.00%	0.00%	0.65%
female	100.00%					100.00%
NBM	5.56%	0.00%	0.00%	0.00%	0.00%	1.30%
male	100.00%					100.00%
No	52.78%	0.00%	13.33%	73.33%	66.67%	49.35%
female	52.63%		50.00%	36.36%	45.45%	46.05%
male	47.37%		50.00%	63.64%	54.55%	53.95%
Oriental Bank of Commerce	0.00%	9.09%	0.00%	0.00%	0.00%	1.30%
male		100.00%				100.00%
PAMECAS	0.00%	0.00%	0.00%	0.00%	1.52%	0.65%
male					100.00%	100.00%
Punjab National Bank	0.00%	27.27%	0.00%	0.00%	0.00%	3.90%
male		100.00%				100.00%
Rural Bank	0.00%	0.00%	0.00%	0.00%	12.12%	5.19%
female					25.00%	25.00%
male					75.00%	75.00%
State Bank of India	0.00%	22.73%	0.00%	0.00%	0.00%	3.25%
female		40.00%				40.00%
male		60.00%				60.00%
Syndicate bank	0.00%	4.55%	0.00%	0.00%	0.00%	0.65%
female		100.00%				100.00%
Union Bank of India	0.00%	4.55%	0.00%	0.00%	0.00%	0.65%
male		100.00%				100.00%
AD Bank	0.00%	0.00%	0.00%	0.00%	3.03%	1.30%
female					100.00%	100.00%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.6: Benefits of having a bank account, disaggregated by gender

Benefits	East Africa	India	L America	SE Asia	West Africa	Grand Total
Ability to do more business	3.33%	10.53%	0.00%	5.56%	2.46%	3.92%
female	50.00%	0.00%		0.00%	33.33%	20.00%
male	50.00%	100.00%		100.00%	66.67%	80.00%
Ability to get a loan	16.67%	28.95%	5.88%	0.00%	17.21%	16.86%
female	50.00%	9.09%	100.00%		33.33%	32.56%
male	50.00%	90.91%	0.00%		66.67%	67.44%
Ability to save money	20.00%	18.42%	5.88%	0.00%	22.13%	18.43%
female	50.00%	14.29%	100.00%		33.33%	36.17%
male	50.00%	85.71%	0.00%		66.67%	63.83%
Ability to send or receive money	5.00%	21.05%	5.88%	11.11%	4.92%	7.84%
female	66.67%	12.50%	100.00%	50.00%	33.33%	35.00%
male	33.33%	87.50%	0.00%	50.00%	66.67%	65.00%
Ability to send or receive payments	0.00%	10.53%	64.71%	0.00%	6.56%	9.02%
female		0.00%	90.91%		62.50%	65.22%
male		100.00%	9.09%		37.50%	34.78%
Avoid lengthy wait times for getting paid	1.67%	2.63%	0.00%	5.56%	0.00%	1.18%
female	100.00%	0.00%		0.00%		33.33%
male	0.00%	100.00%		100.00%		66.67%
Don't have	0.00%	0.00%	0.00%	0.00%	0.82%	0.39%
female					100.00%	100.00%
Don't know	10.00%	2.63%	0.00%	0.00%	6.56%	5.88%

Table A2.8: Informal financial institutions providing financial services and products, disaggregated by gender

Informal financial institution	East Africa	India	L America	SE Asia	West Africa	Grand Total
A money guard	0.00%	0.00%	0.00%	19.05%	7.07%	4.95%
female				50.00%	28.57%	36.36%
male				50.00%	71.43%	63.64%
Input supplier (e.g. goods on credit)	6.56%	29.63%	7.14%	0.00%	6.06%	8.56%
female	100.00%	0.00%	100.00%		50.00%	42.11%
male	0.00%	100.00%	0.00%		50.00%	57.89%
Merry-go-round/informal saving network	36.07%	0.00%	42.86%	71.43%	23.23%	29.73%
female	59.09%		100.00%	33.33%	65.22%	59.09%
male	40.91%		0.00%	66.67%	34.78%	40.91%
Other groups	3.28%	3.70%	0.00%	0.00%	5.05%	3.60%
female	100.00%	0.00%			40.00%	50.00%
male	0.00%	100.00%			60.00%	50.00%
Processing industry	0.00%	0.00%	0.00%	0.00%	4.04%	1.80%
female					50.00%	50.00%
male					50.00%	50.00%
Remittances funds	8.20%	0.00%	0.00%	0.00%	7.07%	5.41%
female	60.00%				85.71%	75.00%
male	40.00%				14.29%	25.00%
Savings collectors (not closely related to the family)	4.92%	0.00%	0.00%	9.52%	7.07%	5.41%
female	66.67%			50.00%	85.71%	75.00%
male	33.33%			50.00%	14.29%	25.00%
Shop keepers	18.03%	14.81%	21.43%	0.00%	12.12%	13.51%
female	63.64%	0.00%	66.67%		16.67%	36.67%
male	36.36%	100.00%	33.33%		83.33%	63.33%
Trader	16.39%	48.15%	0.00%	0.00%	4.04%	12.16%
female	50.00%	23.08%			75.00%	40.74%
male	50.00%	76.92%			25.00%	59.26%
Vouchers	4.92%	0.00%	0.00%	0.00%	0.00%	1.35%
female	33.33%					33.33%
male	66.67%					66.67%
not applicable	1.64%	3.70%	28.57%	0.00%	24.24%	13.51%
female	100.00%	100.00%	75.00%		33.33%	43.33%
male	0.00%	0.00%	25.00%		66.67%	56.67%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.9: Percentage of respondents who received credit/a loan last year, differentiated by gender

	Count of used credit
no	35.81%
female	35.85%
East Africa	26.32%
India	5.26%
L America	21.05%
West Africa	47.37%
male	64.15%
East Africa	23.53%
India	8.82%
L America	2.94%
SE Asia	2.94%
West Africa	61.76%
yes	64.19%
female	51.58%
East Africa	28.57%
India	6.12%
L America	16.33%
SE Asia	10.20%
West Africa	38.78%
male	48.42%
East Africa	17.39%
India	23.91%
L America	2.17%
SE Asia	19.57%
West Africa	36.96%
Grand Total	100.00%

Table A2.10: Financial institutions that provided loan/credit last year, disaggregated by gender

Financial institution	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	5.26%	34.62%	42.86%	47.06%	2.78%	16.17%
female	50.00%	0.00%	100.00%	25.00%	50.00%	37.04%
male	50.00%	100.00%	0.00%	75.00%	50.00%	62.96%
Cooperative	2.63%	0.00%	7.14%	0.00%	1.39%	1.80%
female	100.00%		100.00%		0.00%	66.67%
male	0.00%		0.00%		100.00%	33.33%
Family	0.00%	3.85%	7.14%	5.88%	4.17%	3.59%
female		0.00%	0.00%	100.00%	0.00%	16.67%
male		100.00%	100.00%	0.00%	100.00%	83.33%
Friend	2.63%	3.85%	7.14%	5.88%	5.56%	4.79%
female	100.00%	100.00%	100.00%	0.00%	75.00%	75.00%
male	0.00%	0.00%	0.00%	100.00%	25.00%	25.00%
MFI	7.89%	0.00%	0.00%	0.00%	9.72%	5.99%
female	66.67%				14.29%	30.00%
male	33.33%				85.71%	70.00%
Moneylender	0.00%	3.85%	0.00%	0.00%	2.78%	1.80%

female		0.00%			100.00%	66.67%
male		100.00%			0.00%	33.33%
Others	7.89%	0.00%	0.00%	17.65%	6.94%	6.59%
female	33.33%			66.67%	40.00%	45.45%
male	66.67%			33.33%	60.00%	54.55%
SACCO	13.16%	0.00%	0.00%	5.88%	0.00%	3.59%
female	20.00%			100.00%		33.33%
male	80.00%			0.00%		66.67%
Trader	0.00%	38.46%	0.00%	0.00%	0.00%	5.99%
female		30.00%				30.00%
male		70.00%				70.00%
VSLA	21.05%	0.00%	0.00%	5.88%	30.56%	18.56%
female	87.50%			0.00%	68.18%	70.97%
male	12.50%			100.00%	31.82%	29.03%
Not applicable	39.47%	15.38%	35.71%	11.76%	36.11%	31.14%
female	46.67%	25.00%	80.00%	0.00%	30.77%	38.46%
male	53.33%	75.00%	20.00%	100.00%	69.23%	61.54%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.11: Repayment modality

Repayment modality	East Africa	India	L America	SE Asia	West Africa	Grand Total
After harvesting	2.86%	72.22%	0.00%	6.67%	15.15%	16.89%
Every 3 months	5.71%	0.00%	0.00%	0.00%	12.12%	6.76%
Every month	54.29%	0.00%	14.29%	86.67%	16.67%	30.41%
Every year	5.71%	0.00%	50.00%	0.00%	3.03%	7.43%
Other	2.86%	0.00%	7.14%	0.00%	3.03%	2.70%
Not applicable	28.57%	27.78%	28.57%	6.67%	50.00%	35.81%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A2.12: Reasons for not asking credit from a bank

Reasons	East Africa	India	L America	SE Asia	West Africa	Grand Total
Don't know procedures	0.00%	0.00%	7.14%	0.00%	4.55%	2.70%
Farming is very risky and banks have no confidence to farmers	0.00%	0.00%	7.14%	0.00%	16.67%	8.11%
Interest rate too high	0.00%	0.00%	7.14%	0.00%	3.03%	2.03%
Other	0.00%	0.00%	0.00%	0.00%	4.55%	2.03%
Procedures complicated	0.00%	0.00%	0.00%	0.00%	6.06%	2.70%
Not applicable	100.00%	100.00%	78.57%	100.00%	65.15%	82.43%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Annex 3 Survey results (part 2-Climate Smart Agriculture and Investments)

Soil conservation or land preparation technologies or practices

Table A3.1: Soil conservation or land preparation technologies or practices applied, disaggregated by gender

Technologies/practices	East Africa	India	L America	SE Asia	West Africa	Grand Total
Crop and pasture rotation	0.00%	10.71%	4.08%	0.00%	2.78%	3.87%
female		0.00%	50.00%		66.67%	27.27%
male		100.00%	50.00%		33.33%	72.73%
Fire	0.00%	0.00%	0.00%	0.00%	10.19%	3.87%
female					18.18%	18.18%
male					81.82%	81.82%
Ground cover	0.00%	0.00%	8.16%	0.00%	0.00%	1.41%
female			100.00%			100.00%
Intercropping	1.79%	0.00%	2.04%	0.00%	4.63%	2.46%
female	100.00%		100.00%		40.00%	57.14%
male	0.00%		0.00%		60.00%	42.86%
Laser Land Leveller	0.00%	32.14%	0.00%	0.00%	0.00%	6.34%
female		22.22%				22.22%
male		77.78%				77.78%
Nutrient management	26.79%	5.36%	28.57%	0.00%	7.41%	14.08%
female	46.67%	0.00%	85.71%		37.50%	55.00%
male	53.33%	100.00%	14.29%		62.50%	45.00%
Other	17.86%	12.50%	4.08%	0.00%	10.19%	10.56%
female	30.00%	0.00%	100.00%		27.27%	26.67%
male	70.00%	100.00%	0.00%		72.73%	73.33%
Ploughing	7.14%	1.79%	26.53%	0.00%	1.85%	7.04%
female	100.00%	0.00%	84.62%		0.00%	75.00%
male	0.00%	100.00%	15.38%		100.00%	25.00%
RNA	0.00%	0.00%	0.00%	0.00%	21.30%	8.10%
female					43.48%	43.48%
male					56.52%	56.52%
Scraping before sowing	0.00%	0.00%	0.00%	0.00%	7.41%	2.82%
male					100.00%	100.00%
Turbo Happy Seeder	0.00%	26.79%	0.00%	0.00%	0.00%	5.28%
female		20.00%				20.00%
male		80.00%				80.00%
Water management	42.86%	1.79%	0.00%	0.00%	28.70%	19.72%
female	54.17%	0.00%			51.61%	51.79%
male	45.83%	100.00%			48.39%	48.21%
Zero/minimum tillage	0.00%	8.93%	26.53%	0.00%	5.56%	8.45%
female		20.00%	84.62%		50.00%	62.50%
male		80.00%	15.38%		50.00%	37.50%
Not applicable	3.57%	0.00%	0.00%	100.00%	0.00%	5.99%

female	100.00%			33.33%		41.18%
male	0.00%			66.67%		58.82%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.2 : Amount of investment in soil conservation or land preparation technologies or practices applied, disaggregated by gender

Amount (\$)	East Africa	India	L America	SE Asia	West Africa	Grand Total
0	0.00%	5.56%	0.00%	0.00%	38.46%	17.69%
female		0.00%			36.00%	34.62%
male		100.00%			64.00%	65.38%
0-50	62.86%	0.00%	21.43%	0.00%	36.92%	33.33%
female	54.55%		100.00%		45.83%	53.06%
male	45.45%		0.00%		54.17%	46.94%
50-100	0.00%	0.00%	7.14%	0.00%	6.15%	3.40%
female			100.00%		50.00%	60.00%
male			0.00%		50.00%	40.00%
100-500	8.57%	27.78%	42.86%	0.00%	3.08%	10.88%
female	33.33%	60.00%	83.33%		50.00%	62.50%
male	66.67%	40.00%	16.67%		50.00%	37.50%
500-1000	0.00%	5.56%	28.57%	0.00%	0.00%	3.40%
female		0.00%	75.00%			60.00%
male		100.00%	25.00%			40.00%
>1000	0.00%	27.78%	0.00%	0.00%	0.00%	3.40%
female		20.00%				20.00%
male		80.00%				80.00%
Not Applicable	28.57%	33.33%	0.00%	100.00%	15.38%	27.89%
female	60.00%	0.00%		33.33%	50.00%	39.02%
male	40.00%	100.00%		66.67%	50.00%	60.98%
(blank)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
male						
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.4: Risks in soil conservation or land preparation technologies or practices, disaggregated by gender

Risks	East Africa	India	L America	SE Asia	West Africa	Grand Total
Diseases	2.63%	0.00%	42.86%	0.00%	0.00%	4.38%
female	100.00%		83.33%			85.71%
male	0.00%		16.67%			14.29%
Drought	13.16%	0.00%	7.14%	0.00%	4.11%	5.63%
female	40.00%		100.00%		33.33%	44.44%
male	60.00%		0.00%		66.67%	55.56%
Erosion	10.53%	0.00%	0.00%	0.00%	1.37%	3.13%
female	50.00%				0.00%	40.00%
male	50.00%				100.00%	60.00%
High costs	28.95%	5.00%	0.00%	0.00%	16.44%	15.00%
female	54.55%	0.00%			66.67%	58.33%
male	45.45%	100.00%			33.33%	41.67%
Higher weeds	0.00%	5.00%	0.00%	0.00%	1.37%	1.25%
male		100.00%			100.00%	100.00%
Lower yield	0.00%	5.00%	7.14%	0.00%	0.00%	1.25%
female		0.00%	100.00%			50.00%
male		100.00%	0.00%			50.00%
None	2.63%	85.00%	35.71%	0.00%	38.36%	31.88%
female	100.00%	23.53%	80.00%		39.29%	39.22%
male	0.00%	76.47%	20.00%		60.71%	60.78%
Other	31.58%	0.00%	7.14%	0.00%	12.33%	13.75%
female	50.00%		100.00%		66.67%	59.09%
male	50.00%		0.00%		33.33%	40.91%
Physical damage	0.00%	0.00%	0.00%	0.00%	8.22%	3.75%
female					16.67%	16.67%
male					83.33%	83.33%
Reptile bites	0.00%	0.00%	0.00%	0.00%	5.48%	2.50%
female					75.00%	75.00%
male					25.00%	25.00%
Not applicable	10.53%	0.00%	0.00%	100.00%	12.33%	17.50%
female	50.00%			33.33%	11.11%	28.57%
male	50.00%			66.67%	88.89%	71.43%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.5: Suggested changes in financial products and services to facilitate soil conservation or land preparation, disaggregated by gender

Changes	East Africa	India	L America	SE Asia	West Africa	Grand Total
Awareness Creation on Financial services	0.00%	0.00%	0.00%	0.00%	4.17%	1.78%
female					66.67%	66.67%
male					33.33%	33.33%
Easy Access to financial services	0.00%	0.00%	0.00%	0.00%	11.11%	4.73%
female					25.00%	25.00%
male					75.00%	75.00%
Lower interest rates	26.09%	15.00%	18.75%	0.00%	2.78%	11.83%
female	41.67%	33.33%	66.67%		50.00%	45.00%
male	58.33%	66.67%	33.33%		50.00%	55.00%
None	0.00%	35.00%	12.50%	0.00%	22.22%	14.79%
female		14.29%	100.00%		43.75%	40.00%
male		85.71%	0.00%		56.25%	60.00%
Other	26.09%	5.00%	6.25%	0.00%	6.94%	11.24%
female	50.00%	0.00%	100.00%		60.00%	52.63%
male	50.00%	100.00%	0.00%		40.00%	47.37%
They should link us In-Kind	0.00%	0.00%	0.00%	0.00%	6.94%	2.96%
female					40.00%	40.00%
male					60.00%	60.00%
Training	28.26%	0.00%	0.00%	0.00%	4.17%	9.47%
female	46.15%				33.33%	43.75%
male	53.85%				66.67%	56.25%
More subsidies	6.52%	20.00%	62.50%	0.00%	9.72%	14.20%
female	66.67%	25.00%	90.00%		71.43%	70.83%
male	33.33%	75.00%	10.00%		28.57%	29.17%
Not applicable	13.04%	25.00%	0.00%	100.00%	31.94%	28.99%
female	66.67%	20.00%		33.33%	30.43%	34.69%
male	33.33%	80.00%		66.67%	69.57%	65.31%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Water use efficiency or conservation technologies and practices

Table A3.6: Water use efficiency or conservation technologies and practices applied, disaggregated by gender

Technologies & practices	East Africa	India	L America	SE Asia	West Africa	Grand Total
Alternate wetting and drying	0.00%	7.14%	0.00%	0.00%	0.00%	1.42%
female		33.33%				33.33%
male		66.67%				66.67%
Bed planting	0.00%	28.57%	0.00%	0.00%	0.00%	5.69%
female		33.33%				33.33%
male		66.67%				66.67%
Bunding	0.00%	9.52%	0.00%	0.00%	7.23%	4.74%
female		25.00%			50.00%	40.00%
male		75.00%			50.00%	60.00%
Drip irrigation	0.00%	0.00%	38.24%	0.00%	0.00%	6.16%
female			92.31%			92.31%
male			7.69%			7.69%
DSR	0.00%	11.90%	0.00%	0.00%	0.00%	2.37%

female		60.00%				60.00%
male		40.00%				40.00%
irrigation	29.73%	0.00%	0.00%	0.00%	0.00%	5.21%
female	45.45%					45.45%
male	54.55%					54.55%
Laser land leveler	0.00%	26.19%	0.00%	0.00%	0.00%	5.21%
female		18.18%				18.18%
male		81.82%				81.82%
Nutrient management	2.70%	4.76%	0.00%	0.00%	7.23%	4.27%
female	100.00%	0.00%			66.67%	55.56%
male	0.00%	100.00%			33.33%	44.44%
Other	5.41%	4.76%	8.82%	0.00%	1.20%	3.79%
female	100.00%	0.00%	66.67%		100.00%	62.50%
male	0.00%	100.00%	33.33%		0.00%	37.50%
RNA	0.00%	0.00%	0.00%	0.00%	25.30%	9.95%
female					38.10%	38.10%
male					61.90%	61.90%
Tied ridges	2.70%	0.00%	0.00%	0.00%	24.10%	9.95%
female	100.00%				65.00%	66.67%
male	0.00%				35.00%	33.33%
Water conservation	35.14%	0.00%	52.94%	0.00%	3.61%	16.11%
female	53.85%		72.22%		66.67%	64.71%
male	46.15%		27.78%		33.33%	35.29%
Zai Method	0.00%	0.00%	0.00%	0.00%	10.84%	4.27%
female					33.33%	33.33%
male					66.67%	66.67%
Not applicable	24.32%	7.14%	0.00%	100.00%	20.48%	20.85%
female	55.56%	0.00%		33.33%	29.41%	34.09%
male	44.44%	100.00%		66.67%	70.59%	65.91%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.7: Amount of investment (\$) in water use efficiency or conservation technologies and practices, disaggregated by gender

Amount (\$)	East Africa	India	L America	SE Asia	West Africa	(blank)	Grand Total
0	0.00%	22.22%	35.71%	0.00%	39.39%	0.00%	23.49%
female		25.00%	100.00%		38.46%		45.71%
male		75.00%	0.00%		61.54%		54.29%
0-50	45.71%	5.56%	35.71%	0.00%	25.76%	0.00%	26.17%
female	56.25%	0.00%	80.00%		35.29%		48.72%
male	43.75%	100.00%	20.00%		64.71%		51.28%
50-100	2.86%	11.11%	7.14%	0.00%	0.00%	0.00%	2.68%
female	100.00%	100.00%	100.00%				100.00%
100-500	11.43%	33.33%	21.43%	0.00%	0.00%	0.00%	8.72%
female	0.00%	16.67%	66.67%				23.08%
male	100.00%	83.33%	33.33%				76.92%
500-1000	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.67%
(blank)						100.00%	100.00%
>1000	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.67%
male		100.00%					100.00%

Table A3.9: Risks in water use efficiency or conservation technologies and practices, disaggregated by gender

Risks	East Africa	India	L America	SE Asia	West Africa	Grand Total
Drought	16.22%	0.00%	40.00%	0.00%	0.00%	7.84%
female	50.00%		100.00%			75.00%
male	50.00%		0.00%			25.00%
Erosion	0.00%	0.00%	0.00%	0.00%	4.41%	1.96%
female					66.67%	66.67%
male					33.33%	33.33%
Expensive to construct water pan	10.81%	0.00%	0.00%	0.00%	0.00%	2.61%
female	75.00%					75.00%
male	25.00%					25.00%
Injuries digging pits and ridges	2.70%	0.00%	0.00%	0.00%	17.65%	8.50%
female	0.00%				50.00%	46.15%
male	100.00%				50.00%	53.85%
Labour intensive	5.41%	0.00%	0.00%	0.00%	2.94%	2.61%
female	0.00%				50.00%	25.00%
male	100.00%				50.00%	75.00%
None	0.00%	61.11%	33.33%	0.00%	33.82%	25.49%
female		36.36%	60.00%		43.48%	43.59%
male		63.64%	40.00%		56.52%	56.41%
Not enough reservoirs	0.00%	0.00%	26.67%	0.00%	1.47%	3.27%
female			100.00%		100.00%	100.00%
Pests and diseases	21.62%	0.00%	0.00%	0.00%	0.00%	5.23%
female	62.50%					62.50%
male	37.50%					37.50%
Siltation of water pan	10.81%	0.00%	0.00%	0.00%	0.00%	2.61%
female	75.00%					75.00%
male	25.00%					25.00%
Snake and scorpion bites	0.00%	0.00%	0.00%	0.00%	5.88%	2.61%
female					50.00%	50.00%
male					50.00%	50.00%
Weeds	0.00%	16.67%	0.00%	0.00%	0.00%	1.96%
male		100.00%				100.00%
Not applicable	32.43%	22.22%	0.00%	100.00%	33.82%	35.29%
female	58.33%	0.00%		33.33%	34.78%	37.04%
male	41.67%	100.00%		66.67%	65.22%	62.96%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.10: Suggested changes in financial products and services to facilitate water use efficiency or conservation technologies and practices, disaggregated by gender

Changes	East Africa	India	L America	SE Asia	West Africa	Grand Total
Lower interest rates	2.63%	11.11%	23.53%	0.00%	11.94%	9.68%
female	100.00%	50.00%	75.00%		62.50%	66.67%
male	0.00%	50.00%	25.00%		37.50%	33.33%
More subsidy	0.00%	0.00%	29.41%	0.00%	0.00%	3.23%
female			100.00%			100.00%
More subsidy for adaptation	15.79%	0.00%	23.53%	0.00%	5.97%	9.03%
female	50.00%		50.00%		75.00%	57.14%
male	50.00%		50.00%		25.00%	42.86%
None	0.00%	44.44%	5.88%	0.00%	22.39%	15.48%
female		25.00%	100.00%		46.67%	41.67%
male		75.00%	0.00%		53.33%	58.33%
Soft loan	15.79%	0.00%	0.00%	0.00%	4.48%	5.81%
female	50.00%				33.33%	44.44%
male	50.00%				66.67%	55.56%
Tractor services	0.00%	0.00%	0.00%	0.00%	13.43%	5.81%
female					33.33%	33.33%
male					66.67%	66.67%
Training	21.05%	0.00%	5.88%	0.00%	1.49%	6.45%
female	50.00%		100.00%		100.00%	60.00%
male	50.00%		0.00%		0.00%	40.00%
Training on irrigation	13.16%	0.00%	0.00%	0.00%	0.00%	3.23%
female	40.00%					40.00%
male	60.00%					60.00%
Not applicable	31.58%	44.44%	11.76%	100.00%	40.30%	41.29%
female	66.67%	12.50%	100.00%	33.33%	33.33%	39.06%
male	33.33%	87.50%	0.00%	66.67%	66.67%	60.94%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Weather forecasting services and/or index based insurance

Table A3.11: Weather forecasting services applied and/or index based insurance in use, disaggregated by gender

Technologies & practices	East Africa	India	L America	SE Asia	West Africa	Grand Total
Agro advisory	0.00%	21.62%	0.00%	0.00%	53.03%	24.71%
female		12.50%			45.71%	39.53%
male		87.50%			54.29%	60.47%
Ask my neighbour	0.00%	5.41%	0.00%	4.55%	0.00%	1.72%
female		100.00%		0.00%		66.67%
male		0.00%		100.00%		33.33%
Crop Insurance	0.00%	24.32%	0.00%	0.00%	0.00%	5.17%
male		100.00%				100.00%
Indigenous knowledge	2.86%	0.00%	0.00%	4.55%	0.00%	1.15%
female	100.00%			0.00%		50.00%
male	0.00%			100.00%		50.00%
Internet	0.00%	21.62%	0.00%	13.64%	0.00%	6.32%
female		12.50%		33.33%		18.18%

male		87.50%		66.67%		81.82%
None	2.86%	5.41%	85.71%	0.00%	1.52%	9.20%
female	100.00%	100.00%	83.33%		0.00%	81.25%
male	0.00%	0.00%	16.67%		100.00%	18.75%
Phone	0.00%	0.00%	0.00%	9.09%	0.00%	1.15%
female				100.00%		100.00%
Radio	14.29%	0.00%	0.00%	9.09%	0.00%	4.02%
female	100.00%			50.00%		85.71%
male	0.00%			50.00%		14.29%
SMS service	0.00%	21.62%	0.00%	0.00%	0.00%	4.60%
female		12.50%				12.50%
male		87.50%				87.50%
TV	2.86%	0.00%	0.00%	59.09%	0.00%	8.05%
female	100.00%			30.77%		35.71%
male	0.00%			69.23%		64.29%
Yes	0.00%	0.00%	14.29%	0.00%	36.36%	14.94%
female			100.00%		37.50%	42.31%
male			0.00%		62.50%	57.69%
Not applicable	77.14%	0.00%	0.00%	0.00%	9.09%	18.97%
female	40.74%				50.00%	42.42%
male	59.26%				50.00%	57.58%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.12: Amount of investment (\$) in weather forecasting services and/or index based insurance, disaggregated by gender

Amount	East Africa	India	L America	SE Asia	West Africa	(blank)	Grand Total
0	0.00%	33.33%	14.29%	0.00%	48.48%	0.00%	26.85%
female		33.33%	100.00%		31.25%		35.00%
male		66.67%	0.00%		68.75%		65.00%
0-50	14.29%	27.78%	0.00%	0.00%	19.70%	0.00%	15.44%
female	40.00%	0.00%			30.77%		26.09%
male	60.00%	100.00%			69.23%		73.91%
50-100	0.00%	5.56%	0.00%	0.00%	1.52%	0.00%	1.34%
female		0.00%			100.00%		50.00%
male		100.00%			0.00%		50.00%
100-500	0.00%	0.00%	0.00%	0.00%	1.52%	0.00%	0.67%
male					100.00%		100.00%
500-1000	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.67%
male		100.00%					100.00%
>1000	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.67%
(blank)						100.00%	100.00%
Not applicable	85.71%	27.78%	85.71%	100.00%	28.79%	0.00%	54.36%
female	56.67%	40.00%	83.33%	33.33%	68.42%		58.02%
male	43.33%	60.00%	16.67%	66.67%	31.58%		41.98%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.13: Sources used to invest in weather forecasting services and/or index based insurance, disaggregated by gender

Sources	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	0.00%	11.11%	0.00%	0.00%	0.00%	1.32%
male		100.00%				100.00%
CCAFS-Ecohabitats project	0.00%	0.00%	14.29%	0.00%	5.88%	3.97%
female			100.00%		75.00%	83.33%
male			0.00%		25.00%	16.67%
Cooperative	0.00%	0.00%	0.00%	0.00%	1.47%	0.66%
male					100.00%	100.00%
ESOKO	0.00%	0.00%	0.00%	0.00%	10.29%	4.64%
female					42.86%	42.86%
male					57.14%	57.14%
Merry-go-round	11.11%	0.00%	0.00%	0.00%	0.00%	2.65%
female	100.00%					100.00%
Other	0.00%	0.00%	0.00%	0.00%	4.41%	1.99%
female					33.33%	33.33%
male					66.67%	66.67%
Remittances funds	5.56%	0.00%	0.00%	0.00%	1.47%	1.99%
female	100.00%				100.00%	100.00%
Self-financed	8.33%	27.78%	0.00%	0.00%	10.29%	9.93%
female	0.00%	0.00%			57.14%	26.67%
male	100.00%	100.00%			42.86%	73.33%
VSLA	0.00%	0.00%	0.00%	0.00%	1.47%	0.66%
male					100.00%	100.00%
Not applicable	75.00%	61.11%	85.71%	100.00%	64.71%	72.19%
female	51.85%	36.36%	83.33%	33.33%	40.91%	46.79%
male	48.15%	63.64%	16.67%	66.67%	59.09%	53.21%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.14: Risks in weather forecasting services and/or index based insurance, disaggregated by gender

Count of e34risksweather	Column Labels					Grand Total
Row Labels	East Africa	India	L America	SE Asia	West Africa	Grand Total
No credit to call	0.00%	0.00%	0.00%	0.00%	7.35%	3.33%
female					20.00%	20.00%
male					80.00%	80.00%
No phones	0.00%	0.00%	0.00%	0.00%	1.47%	0.67%
female					100.00%	100.00%
None	0.00%	72.22%	0.00%	0.00%	27.94%	21.33%
female		15.38%			47.37%	34.38%
male		84.62%			52.63%	65.63%
Not up to date	2.86%	0.00%	0.00%	0.00%	0.00%	0.67%
female	100.00%					100.00%
Poor Network Services	0.00%	0.00%	0.00%	0.00%	7.35%	3.33%
female					60.00%	60.00%
male					40.00%	40.00%
The person does not identify risks	0.00%	0.00%	14.29%	0.00%	0.00%	1.33%
female			50.00%			50.00%
male			50.00%			50.00%
Wrong weather prediction	28.57%	0.00%	7.14%	0.00%	22.06%	17.33%
female	40.00%		100.00%		53.33%	50.00%

male	60.00%		0.00%		46.67%	50.00%
Not applicable	68.57%	27.78%	78.57%	100.00%	33.82%	52.00%
female	58.33%	40.00%	90.91%	33.33%	30.43%	48.72%
male	41.67%	60.00%	9.09%	66.67%	69.57%	51.28%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.15: Suggested changes in financial products and services to facilitate weather forecasting services and/or index based insurance, disaggregated by gender

Changes	East Africa	India	L America	SE Asia	West Africa	Grand Total
Flexible Loans	8.11%	0.00%	0.00%	0.00%	8.33%	5.77%
female	66.67%				83.33%	77.78%
male	33.33%				16.67%	22.22%
Free weather forecast	0.00%	0.00%	21.43%	0.00%	0.00%	1.92%
female			66.67%			66.67%
male			33.33%			33.33%
Lower interest rates	0.00%	5.56%	0.00%	0.00%	15.28%	7.69%
female		0.00%			63.64%	58.33%
male		100.00%			36.36%	41.67%
Market information	5.41%	0.00%	0.00%	0.00%	0.00%	1.28%
male	100.00%					100.00%
More location and language specific forecast	0.00%	0.00%	0.00%	0.00%	6.94%	3.21%
male					100.00%	100.00%
More location specific forecast	0.00%	0.00%	0.00%	0.00%	9.72%	4.49%
female					28.57%	28.57%
male					71.43%	71.43%
More subsidy	16.22%	0.00%	0.00%	0.00%	6.94%	7.05%
female	50.00%				60.00%	54.55%
male	50.00%				40.00%	45.45%
None	0.00%	38.89%	7.14%	0.00%	20.83%	14.74%
female		14.29%	100.00%		46.67%	39.13%
male		85.71%	0.00%		53.33%	60.87%
Training	13.51%	0.00%	7.14%	0.00%	0.00%	3.85%
female	60.00%		0.00%			50.00%
male	40.00%		100.00%			50.00%
Not applicable	56.76%	55.56%	64.29%	100.00%	31.94%	50.00%
female	57.14%	30.00%	100.00%	33.33%	39.13%	48.72%
male	42.86%	70.00%	0.00%	66.67%	60.87%	51.28%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Nutrient management technologies and practices

Table A3.16: Types of nutrient management technologies and practices applied, disaggregated by gender

Technologies & practices	East Africa	India	L America	SE Asia	West Africa	Grand Total
Chemical fertilizer	28.07%	0.00%	20.45%	0.00%	15.24%	15.07%
female	43.75%		88.89%		50.00%	56.10%
male	56.25%		11.11%		50.00%	43.90%
Cover crop	1.75%	7.84%	0.00%	0.00%	0.00%	1.84%
female	100.00%	0.00%				20.00%
male	0.00%	100.00%				80.00%

Crop residues on top soils	7.02%	0.00%	22.73%	0.00%	1.90%	5.88%
female	25.00%		80.00%		50.00%	62.50%
male	75.00%		20.00%		50.00%	37.50%
Crop Rotation	5.26%	0.00%	0.00%	0.00%	7.62%	4.04%
female	66.67%				50.00%	54.55%
male	33.33%				50.00%	45.45%
Green seeker Crop Sensing System	0.00%	27.45%	0.00%	0.00%	0.00%	5.15%
female		28.57%				28.57%
male		71.43%				71.43%
Growing leguminous crop	1.75%	0.00%	0.00%	0.00%	0.95%	0.74%
female	0.00%				100.00%	50.00%
male	100.00%				0.00%	50.00%
Improved seeds	7.02%	0.00%	0.00%	0.00%	0.00%	1.47%
female	50.00%					50.00%
male	50.00%					50.00%
Integrated nutrient management	0.00%	29.41%	0.00%	0.00%	0.00%	5.51%
female		26.67%				26.67%
male		73.33%				73.33%
Manure	29.82%	3.92%	27.27%	0.00%	33.33%	24.26%
female	70.59%	50.00%	91.67%		42.86%	59.09%
male	29.41%	50.00%	8.33%		57.14%	40.91%
Mix cropping	3.51%	0.00%	0.00%	0.00%	2.86%	1.84%
female	100.00%				33.33%	60.00%
male	0.00%				66.67%	40.00%
Other	3.51%	0.00%	0.00%	0.00%	7.62%	3.68%
female	50.00%				50.00%	50.00%
male	50.00%				50.00%	50.00%
PH neutralization with lime	0.00%	0.00%	29.55%	0.00%	0.00%	4.78%
female			84.62%			84.62%
male			15.38%			15.38%
Compost2	1.75%	25.49%	0.00%	0.00%	16.19%	11.40%
female	0.00%	15.38%			52.94%	35.48%
male	100.00%	84.62%			47.06%	64.52%
Not applicable	10.53%	5.88%	0.00%	100.00%	14.29%	14.34%
female	66.67%	0.00%		33.33%	26.67%	33.33%
male	33.33%	100.00%		66.67%	73.33%	66.67%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.17: Investment amount (\$) in nutrient management technologies and practices in the past year, disaggregated by gender

Amount(\$)	East Africa	India	L America	SE Asia	West Africa	Grand Total
0	2.86%	11.11%	0.00%	0.00%	25.76%	13.51%
female	100.00%	0.00%			17.65%	20.00%
male	0.00%	100.00%			82.35%	80.00%
0-50	62.86%	0.00%	14.29%	0.00%	28.79%	29.05%
female	54.55%		100.00%		47.37%	53.49%
male	45.45%		0.00%		52.63%	46.51%

50-100	5.71%	11.11%	14.29%	0.00%	9.09%	8.11%
female	50.00%	50.00%	100.00%		66.67%	66.67%
male	50.00%	50.00%	0.00%		33.33%	33.33%
100-500	2.86%	33.33%	42.86%	0.00%	13.64%	14.86%
female	0.00%	50.00%	83.33%		55.56%	59.09%
male	100.00%	50.00%	16.67%		44.44%	40.91%
500-1000	0.00%	16.67%	28.57%	0.00%	0.00%	4.73%
female		0.00%	75.00%			42.86%
male		100.00%	25.00%			57.14%
>1000	0.00%	11.11%	0.00%	0.00%	0.00%	1.35%
male		100.00%				100.00%
Not Applicable	25.71%	16.67%	0.00%	100.00%	22.73%	28.38%
female	55.56%	0.00%		33.33%	46.67%	40.48%
male	44.44%	100.00%		66.67%	53.33%	59.52%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.18: Sources of finance used for paying nutrient management technologies and practices last year, disaggregated by gender

Sources	East Africa	India	L America	SE Asia	West Africa	Grand Total
A money guard	2.33%	0.00%	0.00%	0.00%	1.33%	1.21%
female	0.00%				100.00%	50.00%
male	100.00%				0.00%	50.00%
Bank	0.00%	5.56%	0.00%	0.00%	0.00%	0.61%
male		100.00%				100.00%
Input supplier	13.95%	0.00%	0.00%	0.00%	1.33%	4.24%
female	50.00%				0.00%	42.86%
male	50.00%				100.00%	57.14%
Merry-go-round	23.26%	0.00%	0.00%	0.00%	4.00%	7.88%
female	70.00%				100.00%	76.92%
male	30.00%				0.00%	23.08%
Other	0.00%	0.00%	7.14%	0.00%	5.33%	3.03%
female			100.00%		100.00%	100.00%
Remittances funds	9.30%	0.00%	0.00%	0.00%	8.00%	6.06%
female	50.00%				66.67%	60.00%
male	50.00%				33.33%	40.00%
SACCO	6.98%	0.00%	0.00%	0.00%	1.33%	2.42%
female	33.33%				0.00%	25.00%
male	66.67%				100.00%	75.00%
Sale of farm products	0.00%	0.00%	85.71%	0.00%	5.33%	9.70%
female			83.33%		75.00%	81.25%
male			16.67%		25.00%	18.75%
Savings collectors	2.33%	0.00%	0.00%	0.00%	2.67%	1.82%
female	0.00%				50.00%	33.33%

male	100.00%				50.00%	66.67%
Self-financed	6.98%	61.11%	7.14%	0.00%	26.67%	21.21%
female	66.67%	27.27%	100.00%		45.00%	42.86%
male	33.33%	72.73%	0.00%		55.00%	57.14%
Trader	4.65%	11.11%	0.00%	0.00%	1.33%	3.03%
female	0.00%	50.00%			100.00%	40.00%
male	100.00%	50.00%			0.00%	60.00%
VSLA	4.65%	0.00%	0.00%	0.00%	4.00%	3.03%
female	50.00%				33.33%	40.00%
male	50.00%				66.67%	60.00%
Cooperative	2.33%	0.00%	0.00%	0.00%	0.00%	0.61%
female	100.00%					100.00%
Not applicable	23.26%	22.22%	0.00%	100.00%	38.67%	35.15%
female	60.00%	0.00%		33.33%	27.59%	32.76%
male	40.00%	100.00%		66.67%	72.41%	67.24%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.19: Risks in nutrient management technologies and practices, disaggregated by gender

Risks	East Africa	India	L America	SE Asia	West Africa	Grand Total
Availability of materials	5.41%	0.00%	0.00%	0.00%	1.47%	1.91%
female	50.00%				100.00%	66.67%
male	50.00%				0.00%	33.33%
Climatic conditions	8.11%	0.00%	0.00%	0.00%	0.00%	1.91%
female	33.33%					33.33%
male	66.67%					66.67%
Drought	16.22%	0.00%	10.53%	0.00%	1.47%	5.73%
female	33.33%		100.00%		100.00%	55.56%
male	66.67%		0.00%		0.00%	44.44%
Erosion	2.70%	0.00%	0.00%	0.00%	1.47%	1.27%
male	100.00%				100.00%	100.00%
Excessive rainfall	0.00%	0.00%	15.79%	0.00%	0.00%	1.91%
female			100.00%			100.00%
Expensive	13.51%	0.00%	0.00%	0.00%	2.94%	4.46%
female	60.00%				50.00%	57.14%
male	40.00%				50.00%	42.86%
Injuries digging pits and ridges	0.00%	0.00%	0.00%	0.00%	14.71%	6.37%
female					70.00%	70.00%
male					30.00%	30.00%
Labour intensive	0.00%	11.11%	0.00%	0.00%	4.41%	3.18%
male		100.00%			100.00%	100.00%
Leaching	5.41%	0.00%	0.00%	0.00%	0.00%	1.27%
female	50.00%					50.00%
male	50.00%					50.00%
None	0.00%	72.22%	21.05%	0.00%	23.53%	21.02%
female		30.77%	75.00%		43.75%	42.42%
male		69.23%	25.00%		56.25%	57.58%
Other	10.81%	0.00%	5.26%	0.00%	4.41%	5.10%
female	50.00%		100.00%		33.33%	50.00%
male	50.00%		0.00%		66.67%	50.00%
Pests and diseases	2.70%	0.00%	42.11%	0.00%	0.00%	5.73%
female	100.00%		87.50%			88.89%

male	0.00%		12.50%			11.11%
Snake and scorpion bites	0.00%	0.00%	0.00%	0.00%	11.76%	5.10%
female					62.50%	62.50%
male					37.50%	37.50%
Poor knowledge of using fertilizer	5.41%	0.00%	5.26%	0.00%	1.47%	2.55%
female	50.00%		100.00%		0.00%	50.00%
male	50.00%		0.00%		100.00%	50.00%
Not applicable	29.73%	16.67%	0.00%	100.00%	32.35%	32.48%
female	63.64%	0.00%		33.33%	31.82%	37.25%
male	36.36%	100.00%		66.67%	68.18%	62.75%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.20: Suggested changes in financial products and services to facilitate nutrient management technologies and practices, disaggregated by gender

Changes	East Africa	India	L America	SE Asia	West Africa	Grand Total
Lower interest rates	22.73%	0.00%	23.53%	0.00%	10.61%	13.13%
female	40.00%		75.00%		42.86%	47.62%
male	60.00%		25.00%		57.14%	52.38%
None	0.00%	44.44%	11.76%	0.00%	18.18%	13.75%
female		25.00%	100.00%		41.67%	40.91%
male		75.00%	0.00%		58.33%	59.09%
Other	4.55%	0.00%	0.00%	0.00%	1.52%	1.88%
female	50.00%				100.00%	66.67%
male	50.00%				0.00%	33.33%
Soft loans	6.82%	5.56%	5.88%	0.00%	4.55%	5.00%
female	33.33%	100.00%	100.00%		66.67%	62.50%
male	66.67%	0.00%	0.00%		33.33%	37.50%
Specific funds for adaptation to climate change	0.00%	0.00%	41.18%	0.00%	0.00%	4.38%
female			71.43%			71.43%
male			28.57%			28.57%
Subsidies with suppliers of inputs	0.00%	0.00%	5.88%	0.00%	3.03%	1.88%
female			100.00%		0.00%	33.33%
male			0.00%		100.00%	66.67%
Subsidy on Fertilizers and Manure	9.09%	0.00%	11.76%	0.00%	12.12%	8.75%
female	75.00%		100.00%		75.00%	78.57%
male	25.00%		0.00%		25.00%	21.43%
Training	27.27%	0.00%	0.00%	0.00%	1.52%	8.13%
female	41.67%				100.00%	46.15%
male	58.33%				0.00%	53.85%
Not applicable	29.55%	50.00%	0.00%	100.00%	48.48%	43.13%
female	61.54%	11.11%		33.33%	31.25%	34.78%
male	38.46%	88.89%		66.67%	68.75%	65.22%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.22: Investment amount (\$) in other CSA technologies and practices in the past year, disaggregated by gender

Amount (\$)	East Africa	India	L America	SE Asia	West Africa	Grand Total
0	0.00%	0.00%	42.86%	0.00%	37.88%	20.95%
female			83.33%		36.00%	45.16%
male			16.67%		64.00%	54.84%
0-50	42.86%	0.00%	0.00%	0.00%	31.82%	24.32%
female	66.67%				52.38%	58.33%
male	33.33%				47.62%	41.67%
50-100	5.71%	0.00%	7.14%	0.00%	3.03%	3.38%
female	100.00%		0.00%		100.00%	80.00%
male	0.00%		100.00%		0.00%	20.00%
100-500	5.71%	5.56%	21.43%	6.67%	4.55%	6.76%
female	100.00%	0.00%	100.00%	0.00%	0.00%	50.00%
male	0.00%	100.00%	0.00%	100.00%	100.00%	50.00%
500-1000	0.00%	0.00%	14.29%	33.33%	0.00%	4.73%
female			100.00%	40.00%		57.14%
male			0.00%	60.00%		42.86%
>1000	0.00%	0.00%	0.00%	60.00%	0.00%	6.08%
female				33.33%		33.33%
male				66.67%		66.67%
Not Applicable	45.71%	94.44%	14.29%	0.00%	22.73%	33.78%
female	31.25%	23.53%	100.00%		40.00%	34.00%
male	68.75%	76.47%	0.00%		60.00%	66.00%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.23: Sources of finance used to invest in other CSA technologies and practices in the past year, disaggregated by gender

Sources	East Africa	India	L America	SE Asia	West Africa	Grand Total
Bank	0.00%	0.00%	0.00%	33.33%	0.00%	3.87%
female				14.29%		14.29%
male				85.71%		85.71%
CAAFS-Ecohabitats project	0.00%	0.00%	52.17%	0.00%	0.00%	6.63%
female			83.33%			83.33%
male			16.67%			16.67%
Cooperative	2.44%	0.00%	0.00%	0.00%	1.28%	1.10%
female	100.00%				0.00%	50.00%
male	0.00%				100.00%	50.00%
Input supplier	4.88%	0.00%	0.00%	0.00%	2.56%	2.21%
female	0.00%				50.00%	25.00%
male	100.00%				50.00%	75.00%
Merry-go-round	26.83%	0.00%	4.35%	23.81%	3.85%	11.05%
female	90.91%		100.00%	40.00%	66.67%	75.00%
male	9.09%		0.00%	60.00%	33.33%	25.00%
Microfinance institution	2.44%	0.00%	0.00%	0.00%	1.28%	1.10%
female	100.00%				100.00%	100.00%
Other	0.00%	0.00%	21.74%	4.76%	6.41%	6.08%
female			80.00%	0.00%	60.00%	63.64%

male			20.00%	100.00%	40.00%	36.36%
Remittances funds	4.88%	0.00%	0.00%	0.00%	2.56%	2.21%
female	100.00%				50.00%	75.00%
male	0.00%				50.00%	25.00%
SACCO	9.76%	0.00%	0.00%	0.00%	1.28%	2.76%
female	75.00%				100.00%	80.00%
male	25.00%				0.00%	20.00%
Sale of farm products	0.00%	0.00%	13.04%	4.76%	0.00%	2.21%
female			100.00%	100.00%		100.00%
Savings collectors	0.00%	0.00%	0.00%	0.00%	3.85%	1.66%
female					66.67%	66.67%
male					33.33%	33.33%
Self- financed	7.32%	5.56%	4.35%	28.57%	15.38%	12.71%
female	33.33%	0.00%	100.00%	66.67%	50.00%	52.17%
male	66.67%	100.00%	0.00%	33.33%	50.00%	47.83%
Trader	4.88%	0.00%	0.00%	0.00%	3.85%	2.76%
female	0.00%				66.67%	40.00%
male	100.00%				33.33%	60.00%
VSLA	0.00%	0.00%	0.00%	0.00%	7.69%	3.31%
female					50.00%	50.00%
male					50.00%	50.00%
Not Applicable	36.59%	94.44%	4.35%	4.76%	50.00%	40.33%
female	33.33%	23.53%	100.00%	0.00%	33.33%	31.51%
male	66.67%	76.47%	0.00%	100.00%	66.67%	68.49%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.24: Risks in other CSA technologies and practices, disaggregated by gender

Risks	East Africa	India	L America	SE Asia	West Africa	Grand Total
Animal grazing	0.00%	0.00%	5.26%	0.00%	5.13%	2.69%
female			100.00%		50.00%	60.00%
male			0.00%		50.00%	40.00%
Bush fire	0.00%	0.00%	0.00%	0.00%	6.41%	2.69%
female					100.00%	100.00%
Cattle theft	3.92%	0.00%	0.00%	0.00%	1.28%	1.61%
female	100.00%				0.00%	66.67%
male	0.00%				100.00%	33.33%
Damage from wind and rain	7.84%	0.00%	21.05%	5.00%	3.85%	6.45%
female	100.00%		100.00%	0.00%	66.67%	83.33%
male	0.00%		0.00%	100.00%	33.33%	16.67%
Fear of reptile bite	0.00%	0.00%	0.00%	0.00%	2.56%	1.08%
female					100.00%	100.00%
Lack of forage accessibility	3.92%	0.00%	0.00%	5.00%	1.28%	2.15%
female	100.00%			0.00%	0.00%	50.00%
male	0.00%			100.00%	100.00%	50.00%
Lack of Technical know how	0.00%	0.00%	0.00%	0.00%	2.56%	1.08%
female					50.00%	50.00%
male					50.00%	50.00%
None	0.00%	5.56%	10.53%	0.00%	12.82%	6.99%
female		0.00%	50.00%		40.00%	38.46%
male		100.00%	50.00%		60.00%	61.54%

Not enough (stored) water	21.57%	0.00%	21.05%	5.00%	14.10%	14.52%
female	81.82%		100.00%	0.00%	45.45%	66.67%
male	18.18%		0.00%	100.00%	54.55%	33.33%
Pest and Diseases kills our animals	21.57%	0.00%	0.00%	0.00%	5.13%	8.06%
female	72.73%				25.00%	60.00%
male	27.27%				75.00%	40.00%
Plagues and diseases	3.92%	0.00%	26.32%	0.00%	2.56%	4.84%
female	100.00%		80.00%		100.00%	88.89%
male	0.00%		20.00%		0.00%	11.11%
The use of traditional methods	0.00%	0.00%	0.00%	10.00%	0.00%	1.08%
male				100.00%		100.00%
Trader is set up the price	0.00%	0.00%	0.00%	10.00%	0.00%	1.08%
male				100.00%		100.00%
Unpredictable weather	7.84%	0.00%	0.00%	0.00%	1.28%	2.69%
female	75.00%				0.00%	60.00%
male	25.00%				100.00%	40.00%
Water pollution	0.00%	0.00%	0.00%	60.00%	0.00%	6.45%
female				33.33%		33.33%
male				66.67%		66.67%
Other	1.96%	0.00%	10.53%	5.00%	1.28%	2.69%
female	100.00%		100.00%	100.00%	0.00%	80.00%
male	0.00%		0.00%	0.00%	100.00%	20.00%
Capital missing	5.88%	0.00%	0.00%	0.00%	0.00%	1.61%
female	33.33%					33.33%
male	66.67%					66.67%
Not Applicable	21.57%	94.44%	5.26%	0.00%	39.74%	32.26%
female	27.27%	23.53%	100.00%		35.48%	31.67%
male	72.73%	76.47%	0.00%		64.52%	68.33%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A3.25: Suggested changes to facilitate other CSA technologies and practices, disaggregated by gender

Changes	East Africa	India	L America	SE Asia	West Africa	Grand Total
credit In-Kind	2.50%	0.00%	5.00%	5.56%	4.23%	3.59%
female	0.00%		100.00%	100.00%	100.00%	83.33%
male	100.00%		0.00%	0.00%	0.00%	16.67%
Higher loans needed	0.00%	0.00%	0.00%	50.00%	0.00%	5.39%
female				11.11%		11.11%
male				88.89%		88.89%
Lower interest	2.50%	0.00%	15.00%	5.56%	5.63%	5.39%
female	100.00%		66.67%	0.00%	0.00%	33.33%
male	0.00%		33.33%	100.00%	100.00%	66.67%
None	0.00%	0.00%	20.00%	22.22%	8.45%	8.38%
female			100.00%	50.00%	33.33%	57.14%
male			0.00%	50.00%	66.67%	42.86%
Other	17.50%	0.00%	0.00%	0.00%	9.86%	8.38%
female	85.71%				57.14%	71.43%
male	14.29%				42.86%	28.57%
Soft loans	12.50%	0.00%	20.00%	5.56%	5.63%	8.38%

Annex 4 Questionnaire



Questionnaire 'Understanding the demand for financial products and services in CSA'



Introduction

This survey is part of the CCAFS project 'Business models, incentives and innovative finance for scaling CSA'. The survey has been developed by Wageningen University & Research. It aims to understand:

- the use of financial products and services by smallholder farmers and SMEs
- the requirement of smallholder farmers and SMEs for financial products and services
- the competence which is needed to enable them to use these financial products and services to invest in climate smart agriculture

The results of the questionnaire will be used to:

- Select 1-2 case studies where we will study factors, conditions and impact of 'packages' including financial products and services, capacity building and climate smart business development
- Jointly develop a working paper on the requirements of smallholder farmers and SMEs for financial products and services to invest in CSA

Questionnaire

(1)

This questionnaire focuses on potential case studies which the CCAFS Regional Programme Leaders

have identified at an earlier stage. **If more than two potential case studies per region have been identified, you are asked to focus on the two most promising ones. For each of the potential case studies, you are kindly requested to conduct 15 interviews.** The data will be collected via the semi-structured questionnaire presented hereafter.

Depending on the potential case study, respondents of the questionnaire will be:

- Female and male smallholder farmers. At least 50% of the respondents should be female farmers
- SMEs involved in different stages of the value chain (e.g. service providers, input suppliers). At least 25% of the respondents should be (women-led) SMEs.

Each interview should last no more than 45 minutes. All answers to the questions are mandatory. If there is no answer possible, please fill out 'not applicable'.

Helpdesk

The questionnaire is a digital version. However, if preferred you can use a hard copy version in the field. Once the questionnaire has been completed, you can enter the data in the digital form. If you have any questions about the questionnaire, please do not hesitate to contact the helpdesk, Annemarie Groot (annemarie.groot@wur.nl).

Deadline

Mid March	Start pre-testing (3 respondents)
Monday 3 April	Closure pre-testing
Friday 14 April	Implementation corrections in the digital system Receipt final version of questionnaire
Monday 15 May	Submission results of the questionnaire through the digital system

Sections

The questionnaire is organised in the following sections:

A.	Identification details
B.	General characteristics of farm household
C.	Awareness about availability and access of financial service providers
D.	Use of financial products and services

(1)

Based on Anderson, J. C. Marita and D. Musiime, 2016. CGAP – National Survey and Segmentation of Smallholder households in Tanzania – Understanding their demand for financial, agricultural and digital solutions

Please fill out:

A. Interviewer information

A1. Name *

A2. Organization *

A3. Email *

A4. Date *

 dd/mm/yyyy

A5. Details on potential case study filled in by interviewer (tick as appropriate)

A5.1 East Africa (If other, please note location and project) *

- Tanzania, Lushoto CSVs, in Tanga Province. Improved potato varieties and soil management, enhancing resilience and food security
- Kenya, Nyando climate smart villages. Improved ruminant breed varieties and soil management, enhancing resilience and food security
- Kenya, Nyando climate smart villages. Introduction of Sorghum varieties and soil management, enhancing resilience and food security
- Other?

A5.2 West Africa (If other, please note location and project) *

- Senegal, climate information through PICSA approach
- Ghana, climate information through PICSA approach
- Niger, climate information through PICSA approach
- Burkina Faso, climate information through PICSA approach

Ghana Northern, Agro-advisory and climate information, via ICT platform

Other?

A5.3 Latin America (If other, please note location and project) *

Colombia, Cauca CSV, municipality of Popayan. Pest resistant varieties and management

Other?

A5.4 South Asia (If other, please note location and project) *

India: ICT and machinery provision

Bangladesh: ICT and machinery provision

Nepal: ICT and machinery provision

Other?

A5.5 Southeast Asia (If other, please note location and project) *

Laos, Savannakhet Prov: drought and erratic start of the rainy season. Opportunity for new seed varieties and mechanisation

Vietnam, Bac Lieu Prov: drought and salinity intrusion. Opportunity for new seed varieties and mechanisation

Vietnam, Hoang Phong commune, Hoang Hoa District, Thanh Hoa province: Aquaculture farming for livelihoods and food security

Laos, Samphan District, Mai District: Meteorological station providing weather information

Laos, My Loi CSV, Ha Tinh; Dien Bien, Dien Bien. Meteorological station providing weather information

Cambodia, Tra Hat village, Bac Lieu province. Pest resistant varieties and management

Cambodia, Ekxang village, Vientiane Province. Pest resistant varieties and management

Cambodia, Rohal Suong CSV, Battambang. Pest resistant varieties and management

Other?

Instructions for selection of interviewees:

- Please chose 15 respondent per case study
- Respondents include female and male smallholder farmers. At least 50% of the respondents should be female farmers

- SMEs involved in different stages of the value chain (e.g. service providers, input suppliers). At least 25% of the respondents should be (women-led) SMEs

Respondent identification details:

A6. Interview number *

A7. Name of respondent *

A8. Gender *

>>Please make a choice (only one answer possible):

male
female

A9. Age *

A10. Orientation/location *

>>Please make a choice (only one answer possible):

rural
urban

A11. Country *

>>Please fill in:

country

A12. State/province/region *

A13. District/county *

A14. Village/climate smart village *

A15. If applicable, name of SME *

B. General characteristics of farm household

B1a. What is the gender of head of household? *

B1b. What is the age of head of household? *

B2. Number of people in your household *

B3. How many years have you been farming? *

<please make a choice>



B4. What is the highest education in your family/farm/company? *



Note: this question includes all family members living/contributing to the household. E.g. if some member lives abroad and sends money, should be included.

- >> Please make a choice (only one answer possible):
- Never attended school
 - Pre primary
 - Primary
 - Secondary
 - High School
 - Higer education

<please make a choice>



B5. What is the household's current financial status? *

- >> Please make a choice (only one answer possible):
- Not enough money for food
 - Enough money for food and clothes only
 - Enough money for food and clothes and can save a bit, but not enough to buy expensive goods
 - Afford to buy certain expensive goods

Farm size and production:



Note: This refers to ALL farm production

B6. How many hectares (ha) of agricultural land do you cultivate? *

B7. What are the main crops on your farm? (maximum of 5 most important crops) *

B8. If you rear livestock, which livestock do you rear? Please list all. *

B9. What is the size of your pond? *

Owned: ... please fill out
 Rented: ... please fill out
 Or fill out: not applicable

B10. For aquaculture, which species/varieties do you breed? *

Household income, divided in: Yearly gross income from this activity last year (amount in local currency) and Yearly costs from this activity (last year) (amount in local currency)

B11a. Income from farming activities: inputs (fertilizer, pesticides etc.) *

B11b. Income from farming activities: labor *

B11c. Income from farming activities: machineries (purchase or rent) *

B12. Business trade-retail (including value addition and stocks if existing) *

B13. Paid labour on other farms *	<input type="text"/>	<input type="text"/>
B14. Other business (retail, manufacturing, services) *	<input type="text"/>	<input type="text"/>
B15. Retirement *	<input type="text"/>	<input type="text"/>
B16. Remittances income *	<input type="text"/>	<input type="text"/>
B17. Income from other sources (please specify sources) *	<input type="text"/>	<input type="text"/>

C. Awareness about availability and access of financial service providers

Availability of financial service providers: *(Try to list ALL the sources that could be available to the respondent, and not only the sources that he/she actually uses)*

C1. PAYMENTS: if you would like to send money to someone else who lives far away, where could you do that?

First column Name of institution, group or person (in case of person, fill out 'person', name is not necessary)
 Second column Type or source (bank, MFI, SACCO, moneylender, susu, family/friends, mobile money, etc.; check both formal and informal!)

Name institution

Type or source

<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

C2. SAVINGS: If you would like to deposit your savings in a safe place, where could you do that?

First column Name of institution, group or person (in case of person, fill out 'person', name is not necessary)

Second column Type or source (bank, MFI, SACCO, moneylender, susu, family/friends, mobile money, etc.; check both formal and informal!)

Name institution

Type or source

C3. CREDIT: If you would need to borrow money, for your family expenses or for your farm, what are the places where you could go?

First column Name of institution, group or person (in case of person, fill out 'person', name is not necessary)

Second column Type or source (bank, MFI, SACCO, moneylender, susu, family/friends, mobile money, etc.; check both formal and informal!)

Name institution

Type or source

C4. INSURANCE: if you would like to have any type of insurance (for example health insurance or agricultural insurance), where could you get that?

First column Name of institution, group or person (in case of person, fill out 'person', name is not necessary)

Second column Type or source (bank, MFI, SACCO, moneylender, susu, family/friends, mobile money, etc.; check both formal and informal!)

Name institution

Type or source

C5. What are your most important sources to improve knowledge on financial products and services? (3 most important) *

- Self-learning
- Facilitating agencies
- Internet
- News, magazines, books
- Trainings
- Development partners
- Government extension services
- Farmers associations
- SMS services
- Radio
- School
- Spouse
- Friends/ family
- Community members
- Traders/ middlemen
- Input supplier

<p>C6. In case you have a loss event (for example bad harvest or illness in the family), how do you finance this loss? (tick the most important ones only, max 3) *</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Savings & credit group <input type="checkbox"/> MFI <input type="checkbox"/> SACCO <input type="checkbox"/> Bank <input type="checkbox"/> Extension agent <input type="checkbox"/> Other (please specify): <input type="text"/> <input type="checkbox"/> I am self-supporting and do not use external finance <input type="checkbox"/> By borrowing money from a bank <input type="checkbox"/> By borrowing money from an family/friends <input type="checkbox"/> By borrowing money from elsewhere, please specify <input type="checkbox"/> By subsidy or gifts (and by whom?) <input type="checkbox"/> By taking a temporary job <input type="checkbox"/> By borrowing money from friends/family <input type="checkbox"/> By selling livestock or crop <input type="checkbox"/> By selling asset/building <input type="checkbox"/> By having an insurance <input type="checkbox"/> By all the above <input type="checkbox"/> Other (please specify): <input type="text"/>
<p>D. Use of financial products and services</p>	
<p>D1. Do you personally, or your company, have a bank account? (tick only one) *</p>	<ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Yes, please provide the name of the bank <input type="text"/>

< please make a choice >

D2. Can you make bank transactions with your computer or cell phone? (if you have them) *

>> Please make a choice (only one answer possible):

Not applicable
 No
 Yes, with computer
 Yes, with cell phone

D3. If you have a bank account, what are the benefits to having a bank account? (tick the most important ones only, max 3) *

Ability to save money
 Saving money in a secure location
 Ability to get a loan
 Ability to send or receive money
 Avoid lengthy wait times for getting paid
 Ability to send or receive payments
 Ability to do more business
 Don't know
 Other (please specify):

D4. Did you ever use any of the following? (tick the most important ones only, max 3)

Microfinance institution
 SACCO
 Cooperative
 Post office
 Not applicable
 Other (please specify):

D5. Have you ever used any of the following? (tick the most important ones only, max 3) *

Merry-go-round/informal saving network
 Shop keepers
 Trader
 Processing industry
 Input supplier (e.g. goods on credit)

- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- Other groups
- A digital card or recharge card that is not attached to a bank or MFI account
- Vouchers
- Remittances funds
- Others (please specify):

D6. If applicable, when was the last time you used these services or service providers for any financial activity (tick which applies)

D6.1 Merry-go-round/informal saving network *

- Past 7 days
- Past 30 days
- More than 30 days ago
- Stopped using
- Don't know
- Not applicable

D6.2 Shop keeper *

- Past 7 days
- Past 30 days
- More than 30 days ago
- Stopped using
- Don't know
- Not applicable

D6.3 A money guard/someone in workplace or neighbourhood that collects and keeps savings *

- Past 7 days
- Past 30 days
- More than 30 days ago
- Stopped using

D7. What could be the reason why you borrow money? (tick the most important ones only, max 3) *

- Don't know
- Not applicable
- To pay for school fees
- To pay for food
- To pay for other household/family expenditures
- To invest in (aquaculture) farm inputs (for example fingerlings and feed)
- To invest in equipment of my farm/company
- To build a factory, sheds etc. to grow my farm/company
- To renew equipment
- To hire (new) personnel
- To finance negative events not related to climate change
- To finance negative events related to climate change
- Other (please specify):

D8. In the case of investments in your farm for inputs (for example seed and fertilizer) how do you finance this investment? (tick the most important ones only, max 3) *

- I am self-supporting and do not use external finance
- By borrowing money from a bank
- By borrowing money from an family/friends
- By subsidy or gifts (and by whom?)
- By taking a temporary job
- By borrow money from friends/family
- By selling livestock, crop or aquaculture products
- By selling asset/building
- By having an Insurance
- By borrowing money from elsewhere (please specify):

D9. Credit sources and allocation

D9.1 Did you use a credit/loan in the last year? *

yes

no

D9.2 If yes, how much? (in local currency) *

D9.3 From where? (if more than one loan is requested, tick the three most important ones) *

- Not applicable
- Bank
- Cooperative
- Friend
- MFI
- VSLA
- Family
- SACCO
- Post office
- Trader
- Processing company
- Input dealer
- Moneylender
- Others

D9.4 For the most important loan: what was the interest rate per year? (in %) *

D9.5 For the most important loan: what was the duration of the loan? (reimbursement period in months) *

D9.6 For the most important loan: what is the repayment modality? *

- <please make a choice>
- Not applicable
- Every month
- Every year

After harvesting
 Other (please specify):

D9.7 For the most important loan: have you been asked collateral to get credit? *
>> Please make a choice (only one answer possible):
Not applicable
 Yes
 No

D9.8 For the most important loan: if you have been asked collateral to get credit, what type of collateral?
 Not applicable
 Farm/land certificate
 House certificate
 Animal
 Money to be deposited
 A witness (especially employed person)
 Group guarantee
 Other (please specify):

D9.9 For the most important loan: how did you allocate the credit received? *
 Not applicable
 Investment in land management
 Investment in crop management
 Investment in livestock management
 Investment in aquaculture management
 Buying food
 Schooling
 Health care
 Other (please specify):

D9.10 For the most important loan: how much of this loan was used for investments in aquaculture production? *

>> Please make a choice (only one answer possible):
 Not applicable
 Less than 25%
 Between 25 and 50%
 Between 50 and 75%
 Between 75% and 100%


D9.11 If applicable, why did you not ask for a credit? *

- Not applicable
- Farming is very risky and banks have no confidence to farmers
- Lack of collateral
- Interest rate too high
- Procedures complicated
- Don't know procedures
- I'm so far from lenders
- Other (please specify):

E. Climate smart agriculture and investments

E1. Soil conservation or land preparation technologies or practices

E1.1 What, if any, soil conservation or land preparation technologies or practices do you apply? *

 Fill out: Types of land preparation, technologies or practices or not applicable

E1.2 How much did you invest in these soil conservation or land preparation technologies or practices in the past year? (in local currency) *


E1.3 How did you finance these investments (source of finance)? (tick the most important ones only, max 3)

- Microfinance institution
- SACCO
- Cooperative
- Post office
- Merry-go-round/informal saving network
- Shop keepers
- Trader
- Processing industry
- Input supplier (e.g. goods on credit)
- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- A digital card or recharge card that is not attached to a bank or MFI account
- Vouchers
- Remittances funds
- Others (please specify):

E1.4 What risks are involved in these soil conservation or land preparation technologies or practices? *

A rectangular text input area with a light gray background and a thin border. It features a vertical scrollbar on the right side and horizontal scrollbars at the top and bottom.

E1.5 Is there anything they should change in the financial service offered, in order to better facilitate this CSA activity? *

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E2. Water use efficiency or water conservation technologies and practices

E2.1 What, if any, water use efficiency or conservation technologies and practices do you apply? *



Fill out: Types of water use efficiency or conservation technologies and practices or not applicable

E2.2 How much did you invest in these water use efficiency or conservation technologies and practices in the past year? (in local currency) *

E2.3 How did you finance these water use efficiency or conservation technologies and practices (source of finance)? (tick the most important ones only, max 3)


- Microfinance institution
- SACCO
- Cooperative
- Post office
- Merry-go-round/informal saving network
- Shop keepers
- Trader
- Processing industry
- Input supplier (e.g. goods on credit)
- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- A digital card or recharge card that is not attached to a bank or MFI account
- Vouchers
- Remittances funds
- Others (please specify):

E2.4 What risks are involved in these water use efficiency or conservation technologies and practices? *

E2.5 Is there anything they should change in the financial service offered, in order to better facilitate this CSA activity? *

E3. Weather forecasting services and/or index based insurance

E3.1 Do you use weather forecasting services and/or index based insurance? *

 Fill out: Types of weather smart activity or not applicable

E3.2 How much did you invest in these weather smart activities in the past year? (in local currency) *

E3.3 How did you finance these weather smart activities (source of finance)? (tick the most important ones only, max 3)

- Microfinance institution
- SACCO
- Cooperative
- Post office
- Merry-go-round/informal saving network
- Shop keepers
- Trader

- Processing industry
- Input supplier (e.g. goods on credit)
- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- A digital card or recharge card that is not attached to a bank or MFI account
- Vouchers
- Remittances funds
- Others (please specify):

E3.4 What risks are involved in these weather efficiency or conservation technologies and practices? *




E3.5 Is there anything they should change in the financial service offered, in order to better facilitate this CSA activity? *



E4. Nutrient management technologies and practices

E4.1 What, if any, nutrient management technologies and practices do you apply? *

 Fill out: Types nutrient management technologies and practices or not applicable



E4.2 How much did you invest in these nutrient management technologies and practices in the past year? (in local currency) *

E4.3 How did you finance these nutrient management technologies and practices (source of finance)? (tick the most important ones only, max 3)

- Microfinance institution
- SACCO
- Cooperative
- Post office
- Merry-go-round/informal saving network
- Shop keepers
- Trader
- Processing industry
- Input supplier (e.g. goods on credit)
- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- A digital card or recharge card that is not attached to a bank or MFI account
- Vouchers
- Remittances funds
- Others (please specify):

E4.4 What risks are involved in these nutrient management technologies? *

E4.5 Is there anything they should change in the financial service offered, in order to better facilitate this CSA activity? *

E5. Other climate smart technology or practice? (e.g. agro forestry, livestock management)

E5.1 Do you apply any other climate smart technology or practice? (e.g. agro forestry, livestock management) *



Fill out: Any other climate smart technology or practice or not applicable

E5.2 How much did you invest in these other CSA technologies and practices in the past year? (in local currency) *

E5.3 How did you finance these other CSA technologies and practices (source of finance)? (tick the most important ones only, max 3)

- Microfinance institution
- SACCO
- Cooperative
- Post office
- Merry-go-round/informal saving network
- Shop keepers
- Trader
- Processing industry
- Input supplier (e.g. goods on credit)
- A money guard/someone in workplace or neighbourhood that collects and keeps savings (usually someone closely related to the family)
- Savings collectors (not closely related to the family)
- A digital card or recharge card that is not attached to a bank or MFI account

- Vouchers
- Remittances funds
- Others (please specify):

E5.4 What risks are involved in these other CSA technologies and practices? *

E5.5 Is there anything they should change in the financial service offered, in order to better facilitate this CSA activity? *

E6. Would you increase investment in CSA technologies or practices on your farm if you had (additional) access to a loan or any other financial incentive? *

- yes
- no

E7. If you had (additional) access to a loan or any other financial incentive in which climate smart technologies or practices would you invest (more)? *

- yes
- no

E8. Do you see the financial service providers as partners for your CSA activity? *

- yes
- no

E9. Have you received training or education for any of the following in the past three years? (tick all that apply) *

- not applicable
- CSA technologies or practices
- use of financial products or services
- agri-business development

F.**Glossary**

Agri business	Businesses involved in the production, trading and processing of agricultural commodities.
Climate Agriculture	<p>SmartClimate Smart Agriculture (CSA) is an integrative approach to address the interlinked challenges of food security and climate change that explicitly aims for three objectives:</p> <ul style="list-style-type: none">• Sustainably increasing agricultural productivity, to support equitable increase in farm incomes, food security and development• Adapting and building resilience of agricultural and food security systems to climate change at multiple levels• Reducing greenhouse gases emissions from agriculture and/or increase carbon sequestration <p>Examples of climate smart agriculture technologies and practices include: zero tillage, residue management, direct dry seeded rice, nutrient management decision support tools, agroforestry, crop diversification, grassland restoration, manure management and climate information services.</p>
Collateral	In lending agreements, collateral is a borrower's pledge of specific property to a lender, to secure repayment of a loan. The collateral serves as a lender's protection against a borrower's default, that is if they fail to repay the loan.
Financial product	A financial product is a facility through which, or through the acquisition of which, a person or SME does one or more of the following: makes a financial investment, manages financial risk and/or makes non-cash payments. Examples of financial products include, banking (having a bank account), loans, micro credit, insurance), savings.

Financial service	General term for all kinds of services around depositing and lending out of money, management of capital funds and money transactions, and buying and selling of financial risks. In the world of international financial inclusion, financial services generally comprise credit and investments, savings, insurance, and payment services.
Financial institution	A financial institution (FI) is a company or organisation engaged in the business of dealing with monetary transactions, such as deposits, loans, investments and currency exchange.
Informal financial institution	An informal financial institution provides a potentially wide range of financial activities and services that take place beyond the scope of a country's formalized financial institutions and lie outside financial sector regulations.
Formal financial institution	A formal financial institution is a legal incorporated company or organisation, operating within financial sector regulations.
MFI	Micro Financial Institutions
SACCO	Savings and Credit Cooperative Organizations
SME	Microenterprise-up to 10 employees, total assets of up to \$10,000 and total annual sales of up to \$100,000; small enterprise- up to 50 employees, total assets and total sales of up to \$3 million; medium enterprise – up to 300 employees, total assets and total sales of up to \$15 million (SME Department, World Bank in: http://siteresources.worldbank.org/DEC/Resources/84797-1114437274304/SME_globe.pdf)
VSLA	Village Savings and Loan Association

* = Input is required

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