Transfer Efficient Agricultural technology through Market Systems in Mozambique

TEAMS PROGRAM | BASELINE REPORT

September 2021

TEAMS

Transfer Efficient Agricultural technology through Market Systems in Mozambique

Funded by

Suécia
Sverige

Implemented by

IFDC
Developing Agriculture from the Ground Up

United Purpose
Beyond aid

KSM
Associação Kwaedza Simukai Manica

African Fertilizer and Agribusiness Partnership
afap
Partnerships. Productivity. Prosperity.

In partnership with

Managed by

IFDC

Table of Contents

INTERNATIONAL FERTILIZER DEVELOPMENT CENTER
Bairro da Ponta Gea, Rua Serpa Pinto No.418, UC-C Q5
Beira, Sofala Province

Acronyms and Abbreviations

AFAP	African Fertilizer and Agribusiness Partnership
AKSM	Association Kwaedza Simukai Manica
CSA	Climate-Smart Agriculture
FAR	Food security through climate Adaptation and Resilience
ha	hectare
ICT4Ag	Information and Comunication Technologies for Agriculture
IFDC	International Fertilizer Development Center
IO	Implementing Organization
kg	kilogram
L	liter
MO	Management Organization
SDAE	District Services for Economic Activities
SHF	Smallholder Farmer
TEAMS	Transfer Efficient Agricultural technologies through Market Systems
UP	United Purpose
VSLA	Village Savings and Loan Association
MELS	Monitoring, Evaluation, Learning and Sharing (MELS)
RHOMIS	Rural Household Multi-Indicator Survey
SPSS	Statistical Package for Social Scientists (SPSS)

INTERNATIONAL FERTILIZER DEVELOPMENT CENTER
Bairro da Ponta Gea, Rua Serpa Pinto No.418, UC-C Q5
Beira, Sofala Province

Executive Summary

TEAMS program engaged 15,418 farmers (62% women) which are being assisted with traineingson the best agricultural practices to increase productivity and resilience to climate change. In partneship with SDAEs and large inputs supply companies, the program is assisting farmers through technicians and through ICT4Ag packages. The program also explored partnerships and synergies with other partners or initiatives outside the consortium. For instance, TEAMS collaborated with the Peace Process Secretariat (PPS) in assisting the Demobilization, Disarmament, and Reintegration (DDR) process through training demobilized guerrillas in CSA and business skills as part of social reintegration. A total of 590 (62 women) ex-combatants were integrated into farmer groups assisted by the program and developed skills for agriculture activity. Therefore, this report provides information on the activities carried out by the TEAMS program in the Manica and Sofala province as follows:

Main findings

- 47% of the interviewed farmers have primary education, 33% have no schooling and 19% have secondary education. More details are in the chart below.
- The Farmer households have on average between 6 and 7 members (6 in Sofala province and & in Manica province), with 52% between 4 and 8 members, these households cultivate areas ranging from 0.1 to 16 Acre.
- 50% of the areas from 2.1 to 4 hectares, 27% from 0 to 2 hectares, and 15% with an area of 4.1 to 6 hectares. 69% of the land plowed by farmers is nearly flat and 31% is sloped.
- For the cultivation process, 92% farmers are using labor from family members, 5% use hired labor, and 3% use labor from family, friends, and neighbors.
- The land is mostly (58.8%) owned by adult men and 40.3% owned by adult women.
- During the last 12 months, farmers produced 96% corn, 32% caw pea, 30% graded nuts, 26% beans, 26% rice, 24% sweet potatoes, 23% sesame, 21% cassava, vegetables, pumpkin, and sorghum.
- The average corn crops the farmer's harvest is 500 kg/ha, 451 kg/ha in Sofala, and 551 kg/ha in Manica, this production is mostly destined for consumption in the household, and a small part 28% is for marketing.
- For rice cultivation, farmers reported harvesting 365 kg/ha, being 422 kg/ha in Sofala and 308 kg in Sofala province, this production is for household consumption and sale, only farmers in Sofala province reported selling rice produced.
- The average bean crop is harvested at 230 kg/ha, most of which are for household consumption and a small amount for marketing, only farmers in the province of Manica reported selling the beans produced.

- The most important for the household, 90% is corn, followed by rice and beans.
- 75% of farmers cultivate Kale, 60% Tomatoes, 50% Cabbage and Lecture
- 49% of farmers have Mango trees, 35% bananas, 20% papaya, and 15% Pineapple and Guava.
- 75% of farmers did not use any type of agricultural inputs and 25% had used at least one type of agricultural input in the last 12 months. 15% used fertilizers, 6% used pesticides and improved seeds.
- 52 Farmers obtain seeds less than 20 km, 4 between 20 and 40 km, and the rest more than 100 km from their household.
- 17% of the households had irrigated agricultural areas and 83% did not. 70% use pouring water by hand, 16% use an Electric or diesel pump.
- Farmers, irrigate their farm in June, July, and August with 13%, 14%, and 15% of responses and in the remaining months of the year with percentages ranging from 5% to 7%.
- 71% of farmers tilled their agricultural areas using swamps (using hands), 20% used animal traction and 3% answered using machines for farming.
- 90% of farmers do not use vegetables to improve soil fertility, 33% of Farmers plants vegetables as a food and sale crop, 6% plants before or after culture, and 5% intercrop.
- The income obtained from the sale of agricultural production 96% used to compare food, 50% to buy possessions (clothes, vehicles, items for the family), 42% with household members (education, health, travel, etc.), and 30% is used to invest in agriculture.
- Farmers have other sources of income, 9% Have onw Business, 5% Work in local business, 3% Labor on other farms, Labor, not on farm and Sale of firewood or charcoal, 2% Work for government or public institution.
- Income from activities outside agriculture 22% used to compare food, 19% to buy possessions (clothes, vehicles, family items), 17% with household members (education, health, travel, etc.), and 10% is used to invest in agriculture
- 60% of the farmers going hungry in January and February, 50% in November and December. In Sofala province with less intensity in November and December with an average below 40%.
- Farmers fed mostly (above 50%) with tubers, vegetables, and leafy vegetables, 30% with vegetables, less than 20% with nut seeds, fruits, eggs, meat, and milk.

- In 2020, 71% of farmers are unable to eat healthy and nutritious food, 68% until only a few kinds of foods, 67% worried about not having enough to eat, 64% had to skip a meal, 63% until less than you thought should, 53% were hungry but did not eat, 52% ran out of food, 29% went without eating for a whole day.

- During the best months of the year, 48% of farmers eat food produced in their fields, 38% bought it, 8% received or made some exchange and 5% did not eat.

- During the worst months of the year, 49% of farmers eat purchased products, 41% depend on what they produce, 7% do not eat, and 6% depend on offers.
- Last year 44% of farmers received aid from the government, NGOs, or other organizations. Of those who received, 89% received agricultural inputs, 44% received food, 2% received money and or animals.
- The assisted farmers raise 50% chickens, 30% goats, 20% cattle and less than 10% raise pigs. Farmers in Manica Province raise more goats and cattle while in Sofala Province raise more Chickens and Goats.

IFDC
INTERNATIONAL FERTILIZER DEVELOPMENT CENTER
Bairro da Ponta Gea, Rua Serpa Pinto No.418, UC-C Q5
Beira, Sofala Province

1. Introduction

International Fertilizer Development Center (IFDC), in partnership with African Fertilizer and Agribusiness Partnership (AFAP), United Purpose (UP), and Associação kwaedza Simukai Manica (AKSM), is implementing the Embassy of Sweden-funded Transfer Efficient Agricultural technologies through Market Systems (TEAMS) program in the Manica and Sofala provinces of Mozambique. Following an inclusive market systems approach, the program is expanding program-supported linkages between farmers and agribusiness to supply essential cost-effective inputs and extension services. Ultimately, scaling the adoption of productivity-enhancing technologies and practices observing gender balance through farm demonstrations organized under public and private sector partnerships. The consortium, led by IFDC, is implementing the TEAMS program, which is a continuation of the program Food security through climate change Adaptation and Resilience (FAR-Sofala). The TEAMS program aims to reach more than 15,000 farmers in three (3) districts of Sofala Province, Nhamatanda, Buzi, and Chibabava, and four (4) districts of Manica Province, Macate, Vanduzi, Sussundenga, and Manica.

To ensure long-term sustainable interventions, the program followed market systms approach. The consortium increased the reach of existing inputs suppliers and supported the creation of input suppliers in areas where none were present. This two-pronged approach led to the development of local capacities, the creation of employment opportunities and increased resilience of rural communities to irregular weather and other external shocks and resulted in increased production and food security of rural households. Private sector engagement in agricultural inputs provision has been very successful and is essential to ensure sustainable linkages are established between rural communities and suppliers that outlast project lifetimes. This first component, which focuses on inputs provision, was complemented by a second component that focused on the promotion of climate smart agriculture, including integrated soil fertility management, and a third component that supported the creation and strengthening of village savings and loan association (VSLA).

1.1. Objective

the baseline study will help program to determine the current status (productivity, cultivated crops, agricultural practices used, access to food) of the farmers that are being assisted by program in the Sofala (in the districts of Nhamatanda, Chibabava, and Búzi) and Manica (in the districts of Sussundenga, Macate, Vanduzi, and Manica) provinces in aspectsn related to ***i)*** Food Availability – Adaptive capacities through CSA Solutions and ***ii)*** Food access.

The findings and recommendations of the Baseline Survey will inform the implementing organizations (IOs) and the Monitoring Organization (MO), the District Services for Economic Activities, and other interested parties about the status of agriculture and it will serve as a basis for development of specific strategies for program implementation.

1.2. Methodology

Based on a simple random sampling strategy, interviews with 380 (50% women) farmers were conducted using a structured questionnaire including quantitative but also qualitative questions. Using the data collection collection solution "RHOMIS", a questionnaire was programmed, uploaded into mobiles by the Kobo toolbox software, and tested the Monitoring, Evaluation, Learning and Sharing (MELS) To adjust the data collection tool to the program requirements.

After data collection the the gathered data is automatically processed into an MS excel file by the Kobo toolbox software. The Statistical Package for Social Scientists (SPSS) was used for analysis.

2. Sample Summary

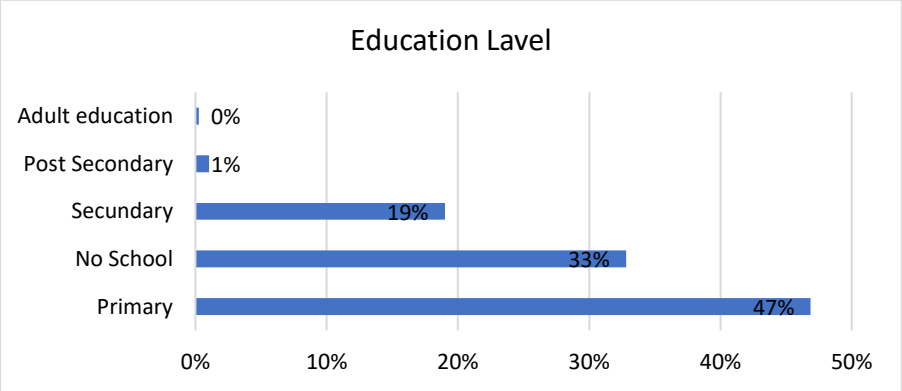
Household interviews were carried out in Mozambique, across 2 provinces Sofala and Manica across 7 districts Nhamatanda, Búzi, Chibabava, Macate, Manica, Vanduzi, and Sussundenga. 382 farmers were interviewed 34 % male and 66% female. 59% of respondents self-identified as a household head (the remainder were either spouse of head or child of head). According to the enumerator evaluation of responses on survey implementation (reliability and rapport), it seemed to go well. The survey duration averaged 19 mins, *which is shorter than the expected duration for the questionnaire*.

Table 1: Summary of Survey Respondents by Region

variable	Sofala		Manica		Total
	N	%	N	%	
V2	192	50%	190	50%	382
Female respondents	62	47%	69	53%	131
Male respondents	38	55%	31	45%	69
Household heads	64	54%	54	46%	118
Reliable or very reliable	91	50%	91	50%	182
Easy or medium rapport	94	50%	93	50%	187

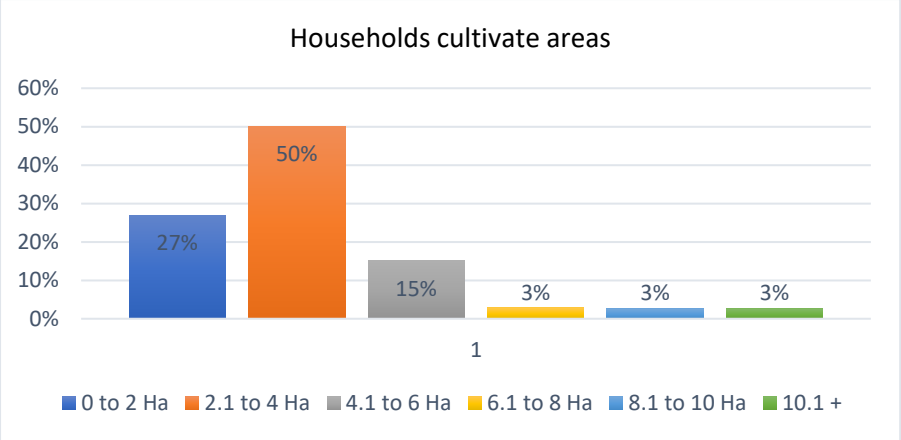
2.1. Farmers Characteristics

47% of the interviewed farmers have primary education, 33% have no schooling and 19% have secondary education. More details are in the chart below.



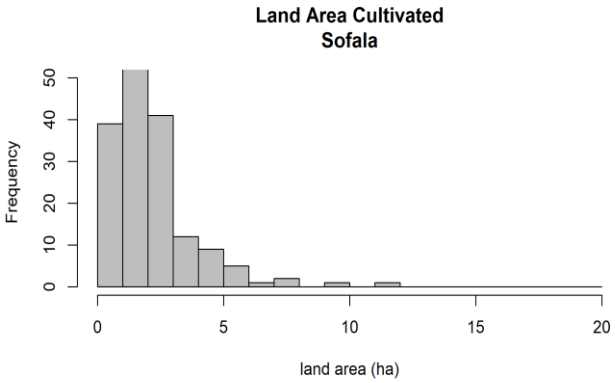
Graphic 1: Entreviewed farmers lavel of education

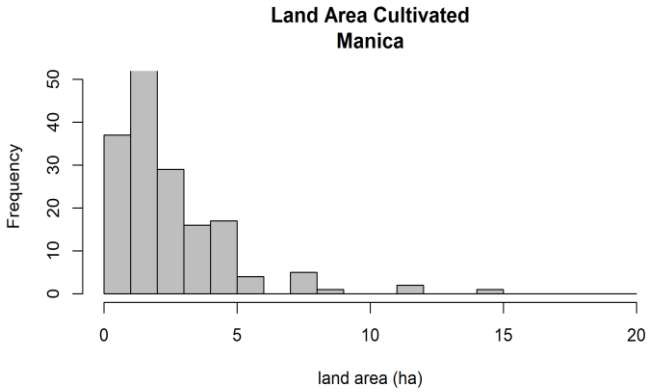
Farmer households interviewed have on average between 6 and 7 members (6 in Sofala province and & in Manica province), with 52% between 4 and 8 members, these households cultivate areas ranging from 0.1 to 16 Acre. 50% of the areas from 2.1 to 4 hectares, 27% from 0 to 2 hectares, and 15% with an area of 4.1 to 6 hectares. 69% of the land plowed by farmers is nearly flat and 31% is sloped.
See the XX chart below



Graphic 2: Households cultivate areas

Analyzing the data by provinces, they have similar characteristics regarding cultivated areas of up to 5 hectares, a small difference in the number of farmers who cultivate up to 10 hectares, and a significant difference in the number of farmers who cultivate more than 10 hectares. In the cultivation process, 92% of respondents report using labor from family members, 5%





use hired labor, and 3% use labor from family, friends, and neighbors. On average, they spend 5,000 meticais per agricultural season.

Others farm characteristics are summarized in the table below.

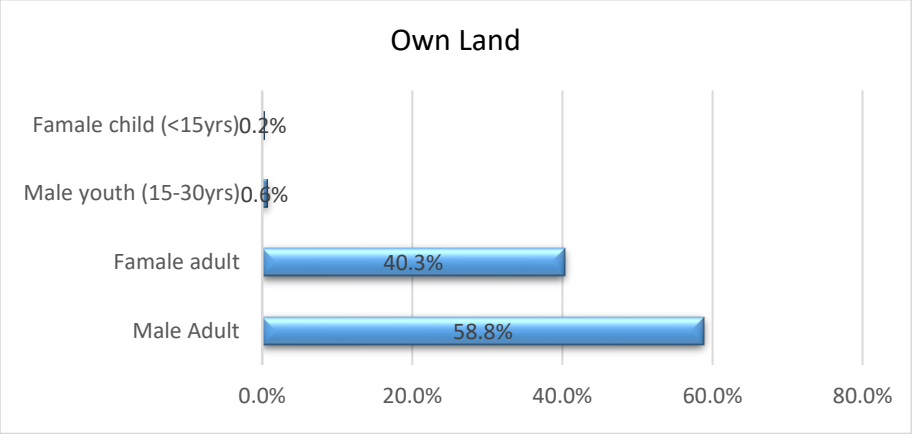
Table 2: Farm Characteristics by Group

Variable	Measure	Sofala	Manica
Household Size Members	Mean Se	6.1 (0.2)	6.9 (0.2)
Land Cultivated HA	Mean Se	2.3 (0.1)	2.6 (0.3)
Livestock Holdings TLU	Mean Se	0.6 (0.3)	1.1 (0.2)

Variable	Measure	Sofala	Manica
Crop Diversity	Mean Se	7.8 (0.3)	7.8 (0.3)
Livestock Diversity	Mean Se	2 (0.1)	2.3 (0.1)

N.B. Crop and livestock diversity is taken directly from the survey question "Crop Count" and "Livestock Count".

Farmers interviewed reported having vast portions of land where they only exploit to cultivate a portion. For example, on average they have 2.5 ha and only explore 2.3 Ha, remaining unexplored. More details are in the table below.



Graphic 3: Own Land

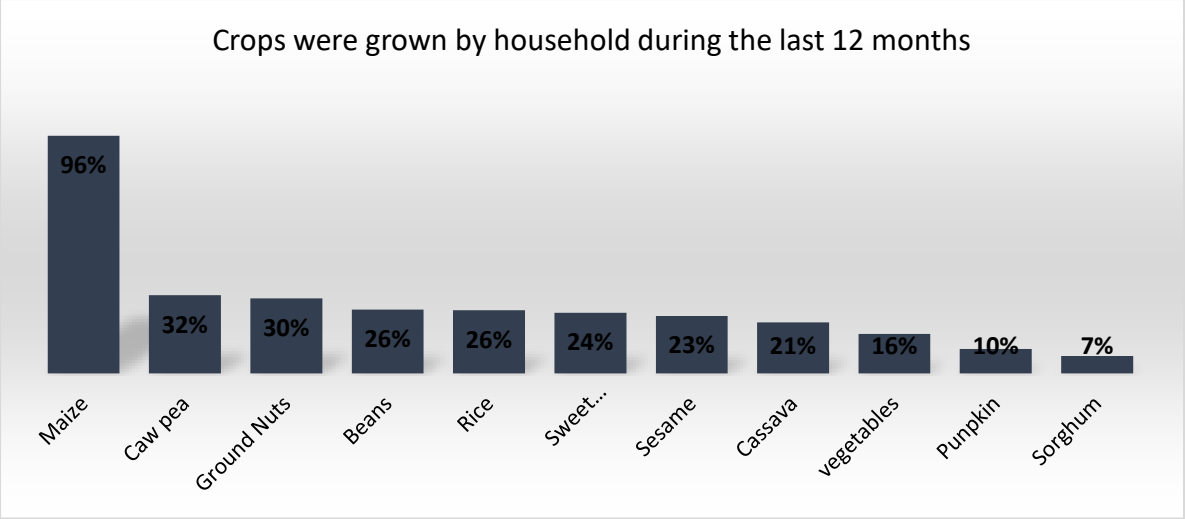
The land is mostly (58.8%) owned by adult men and 40.3% owned by adult women. A slight change is taking place in the issue of access to resources as it is already known that in rural areas of the provinces of Sofala and Manica and Mozambique in general, man is the holder and responsible for resources in the household.

Table 3: Land Tenure and Size (ha) by Group

Variable	Measure	Sofala	Manica
Land Tenure	Own Land	91	93
Land Tenure Own Land	Mean Se	2.5 (0.1)	2.8 (0.3)
Land Tenure Cultivated	Mean Se	2.3 (0.1)	2.6 (0.3)

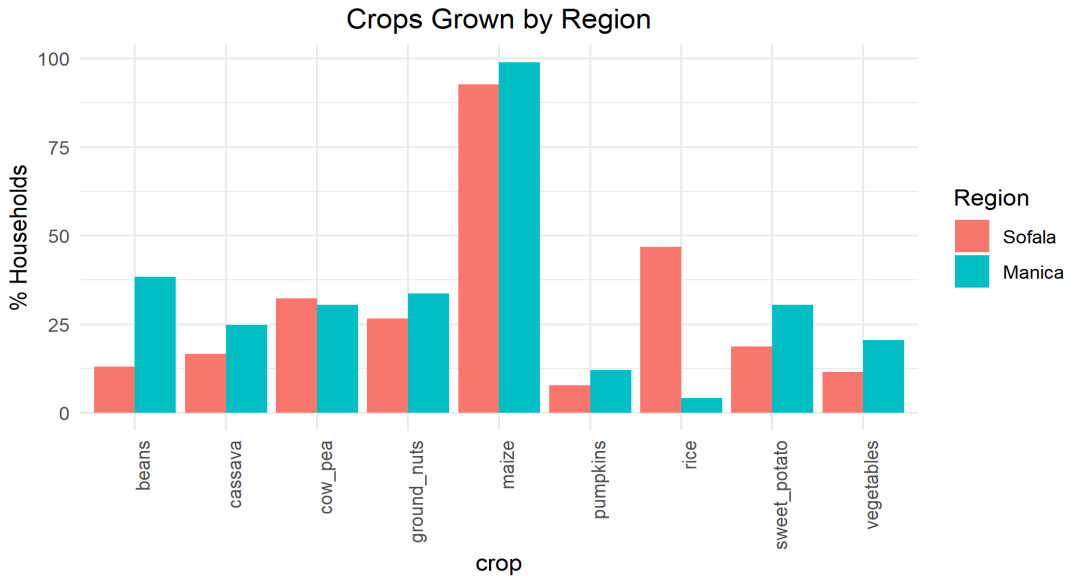
2.2. Crops

During the last 12 months, the interviewed farmers reported that they produced in their totality 96% having produced corn, 32% caw pea, 30% graded nuts, 26% beans, 26% rice, 24% sweet potatoes, 23% sesame, 21% cassava, vegetables, pumpkin, and sorghum.



Graphic 4: Crops were grown by household during the last 12 months

In both provinces, corn represents the main crop produced, followed by caw pea and groundnuts. Rice is mostly produced in Sofala province, this is since the district of Búzi one of the program intervention districts in Sofala province has favorable conditions for the cultivation of this crop. More details are in the chart below.



According to the interviewees, the decision about which crop to grow, 75% answered that the decision is taken by the adult men of the household and 25% answered that the women decide which crop should be planted.

Table 4: Staple cereails Crops by Place

Province	Crop	Average Farmer Area	Average Produtivity with farmers practice
Sofala	Ground Nuts	1	**535**
	Common Beans	0.295	**120**
	Nhemba beans	0.5	**120**
	Sessame	0.625	**318**
	Maize	1.523	**650**
	Rice	0.8	**422**
Manica	Ground Nuts	1	**183**
	Common Beans	0.295	**182**
	Nhemba beans	0.5	**120**
	Sessame	0.625	**350**
	Maize	1.523	**770**

The average corn crop the farmer's harvest is 500 kg/ha, 451 kg/ha in Sofala, and 551 kg/ha in Manica, this production is mostly destined for consumption in the household, and a small part 28% is for marketing.

For rice cultivation, farmers reported harvesting 365 kg/ha, being 422 kg/ha in Sofala and 308 kg in Sofala province, this production is for household consumption and sale, only farmers in Sofala province reported selling rice produced.

The average bean crop is harvested at 230 kg/ha, most of which are for household consumption and a small amount for marketing, only farmers in the province of Manica reported selling the beans produced. Asked which crop was the most important for the household, 90% answered that corn is the most important, followed by rice and beans.

2.3. Vegetables

Vegetable production is dominated by Kale, where 75% reported producing Kale, 60% producing Tomatoes, half (50%) producing Cabbage and Lecture as shown in the chart below in more detail.

Graphic 5: Vegetables does household grow

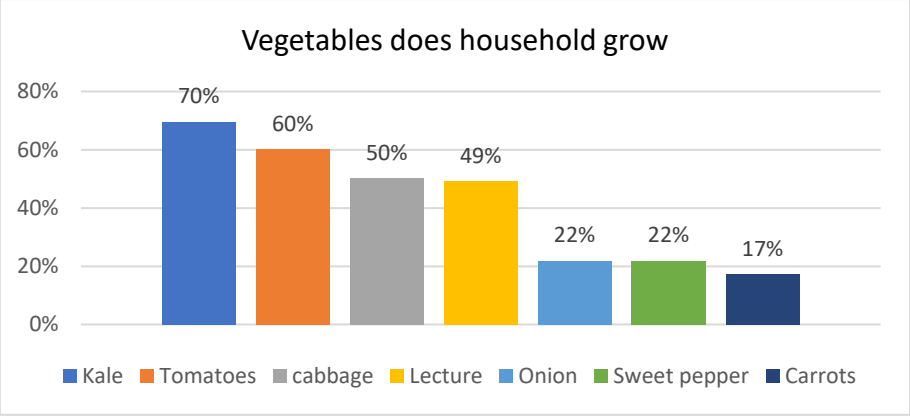
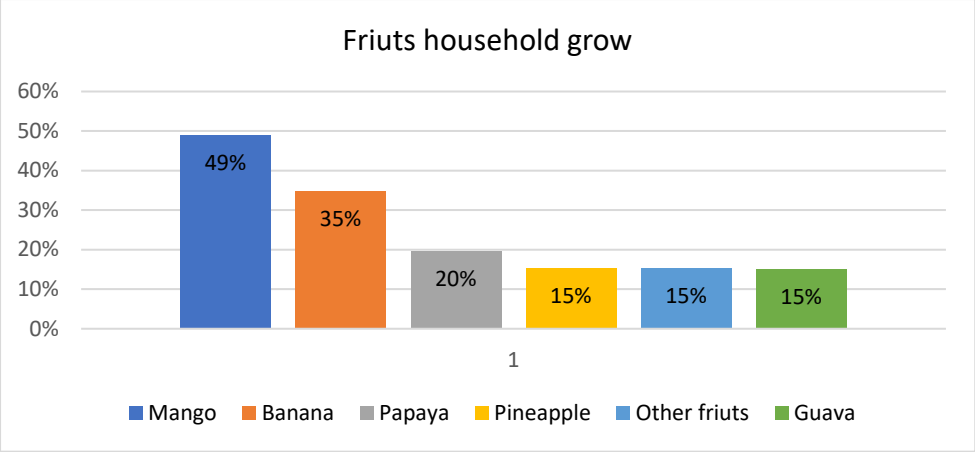


Table 5: Staple vegetable Crops by Place

Province	Crop	Average Farmer Area	Average Produtivity with farmers practice
Sofala	Cabage	0	1983
	Carrot	0.09	2000
	Green Beans	0.12	660
	Kale	0.21	1955
	Onion	0.19	1380
	Piper	0.55	869
	Tomato	0.35	1200
Manica	Cabage	0	2365
	Carrot	0.1	1865
	Green Beans	0.19	853
	Kale	0.21	2195
	Onion	0.19	1380
	Piper	0.55	756
	Tomato	0.4	1365

2.4. Fruits

The interviewed farmers reported having fruit trees. Half (49%) have Mango trees, 35% cultivate bananas, 20% papaya and 15% cultivate Pineapple and Guava.

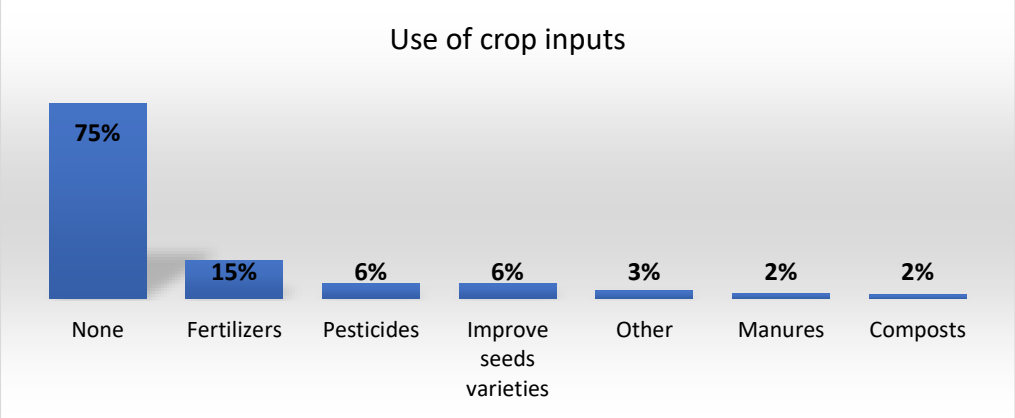


Graphic 6: Friuts does household grow

96% of the interviewed farmers answered that they had not harvested their crop before maturation and 4% did. Those who harvested early did so for fear of erratic rainfall or poor weather, for the most part, for hunger, fear of theft, and high market prices.

2.5. Agri Inputs

By August 2021 when data were collected, 75% of farmers responded that they did not use any type of agricultural inputs and 25% responded that they had used at least one type of agricultural input in the last 12 months. Of the farmers who used inputs, 15% used fertilizers, 6% used pesticides, and improved seeds.



Graphic 7: Use of crop inputs during the last 12 months

The table below presents disaggregated data on the use of agricultural inputs.

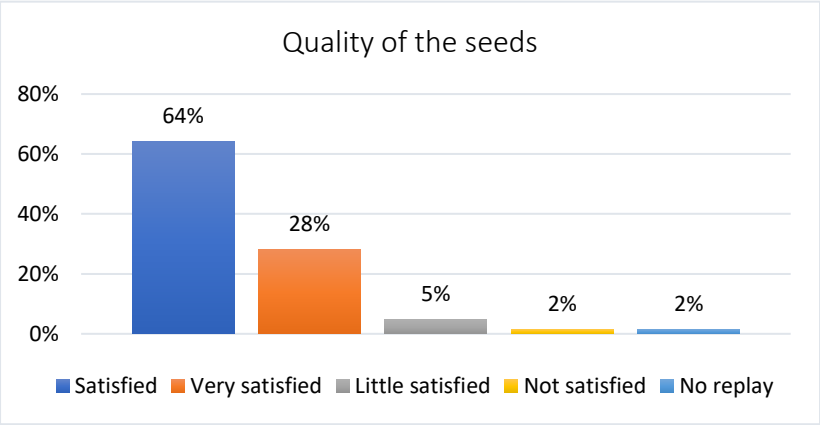
Table 5: Land Management by Group

Variable	Measure	Sofala	Manica
Agri Inputs	Compost	2	1
	Manure	2	3
	Fertilizer	20	10

The 64 farmers reported using certified seeds and that 37 bought at the local agro-dealers shop, 11 at the local market, 9 received it as a donation from other projects, 6 at agricultural fairs, 3 received it with SIDAE.

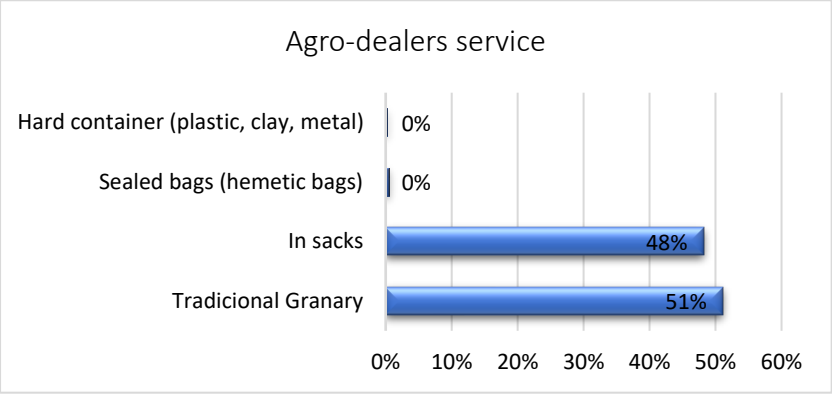
The farmers who report having access to seeds 52 obtained less than 20 km, 4 between 20 and 40 km, and the rest more than 100 km from their household.

2.5.1. Satisfaction

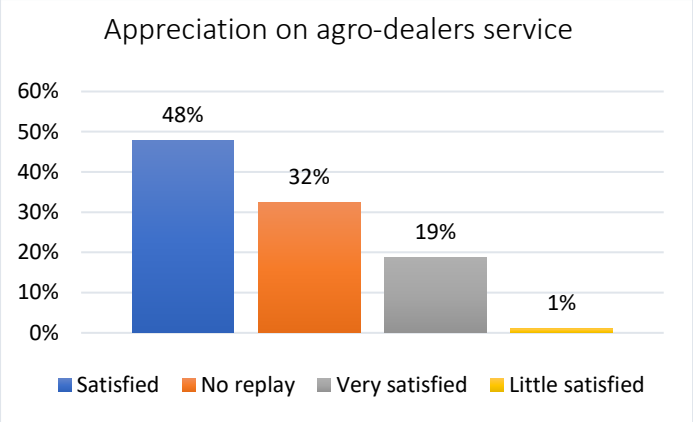


Of the 64 farmers (25% of the sample) who purchased improved seeds, 91% reported being satisfied with the purchased seed, (28% are very satisfied and 64% are satisfied).

Graphic 8: Appreciation on quality of the seeds



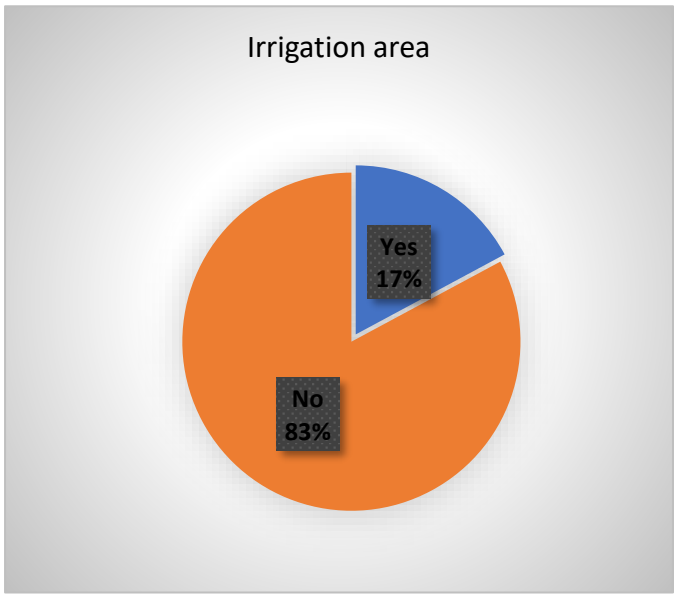
Graphic 10: Agro-dealers service

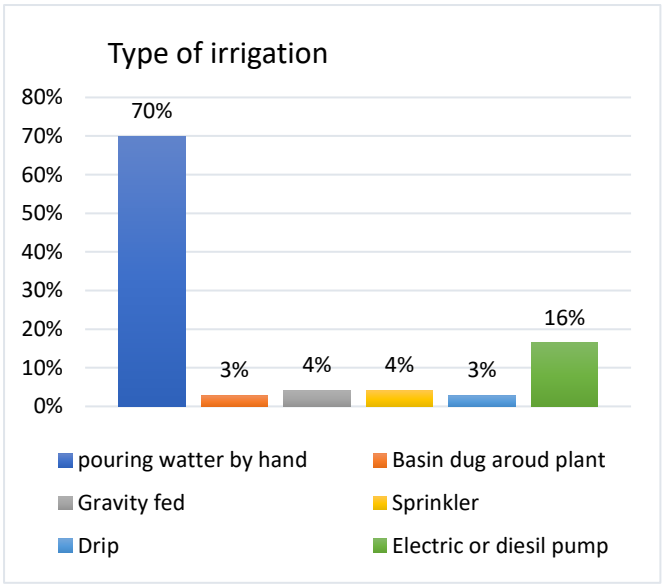


Graphic 9: Appreciation on agro-dealers service

2.6. Irrigation

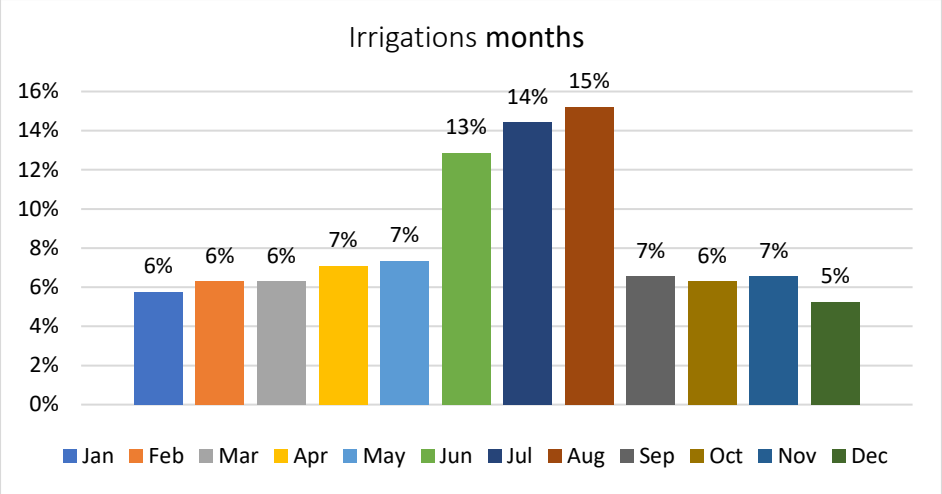
By the time the survey was carried out, 17% of the households had irrigated agricultural areas and 83% did not. Of those who use irrigation 70% use pouring water by hand, 16% use an Electric or diesel pump.





Graphic 11: Irrigation area during the last 12 months Graphic 12: Type of irrigation

According to farmers, irrigation is carried out throughout the year with more incidence in June, July, and August with 13%, 14%, and 15% of responses and in the remaining months of the year with percentages ranging from 5% to 7% more details the chart below.

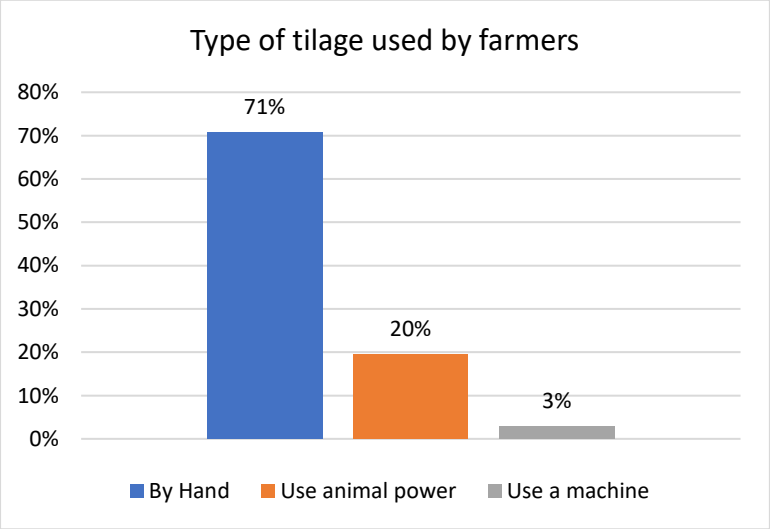


Graphic 12: Irrigations months

10% of the interviewed farmers reported using other inputs (diesel, gasoline, outsourced services, etc.) for the last agricultural campaign. These reported having spent an average of 2 thousand meticais.

2.7. Tillage

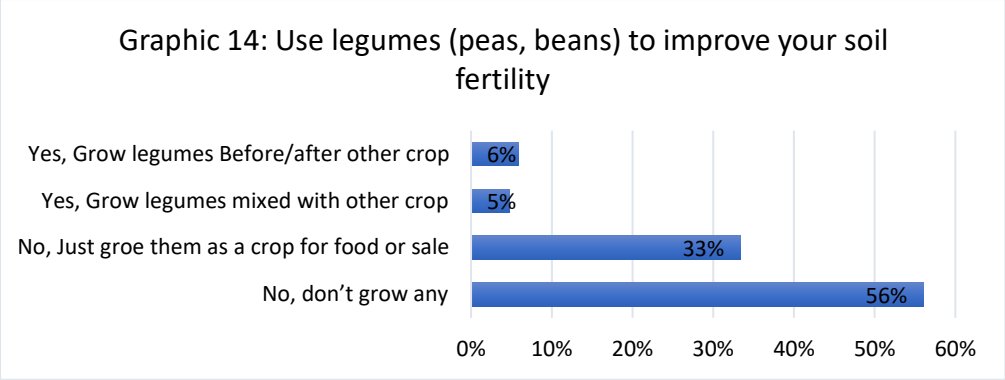
71% of the interviewed farmers answered that they tilled their agricultural areas using swamps (using hands), 20% used animal traction and 3% answered using machines for farming.



Graphic 13: Type of tilage used by farmers

2.7.1. Use legumes (peas, beans) to improve your soil fertility

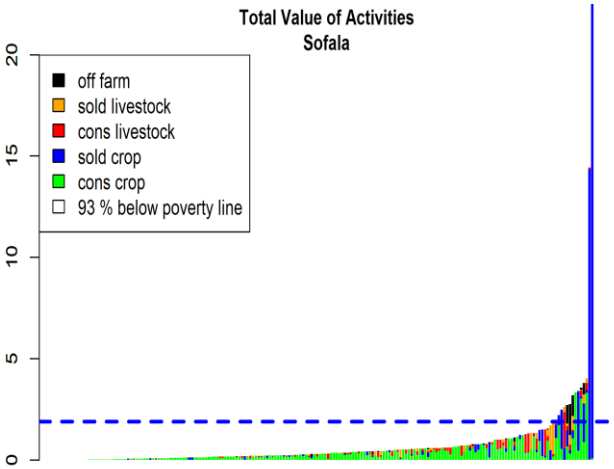
To improve soil fertility 90% responded not to use vegetables to improve soil fertility, 56% do not cultivate vegetables, 33% plants vegetables as a food and sale crop, 6% cultivate before or after a crop, and 5% intercrop.

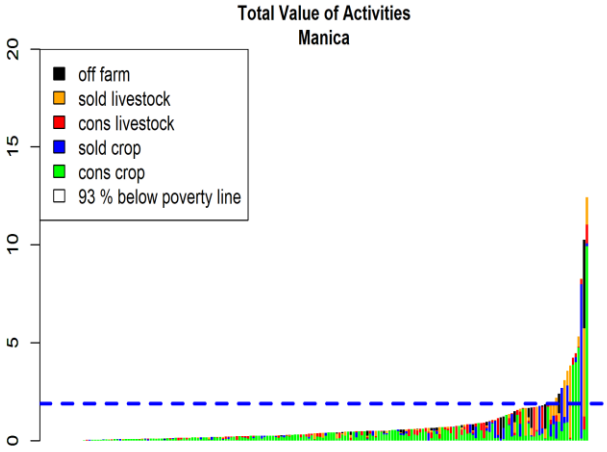


10% of the farmers interviewed are aware of agricultural practices that can damage soils. Of those who know the practices, 20 knew the demonstration fields on field days, 10 in training or training, and 10 with agro-dealers.

2.8. Farm Incomes and Productivity

Bar charts below show the total value of households' income and agricultural production. The height of each bar represents the total value in terms of USD per household member per day. The colors within the bars show where that income or value came from crops that were consumed; crops that were sold; livestock produce that was sold; paid off-farm activities. Note that due to the differing number of interviews in each case, there is a differing number of vertical bars, as each bar represents one household.





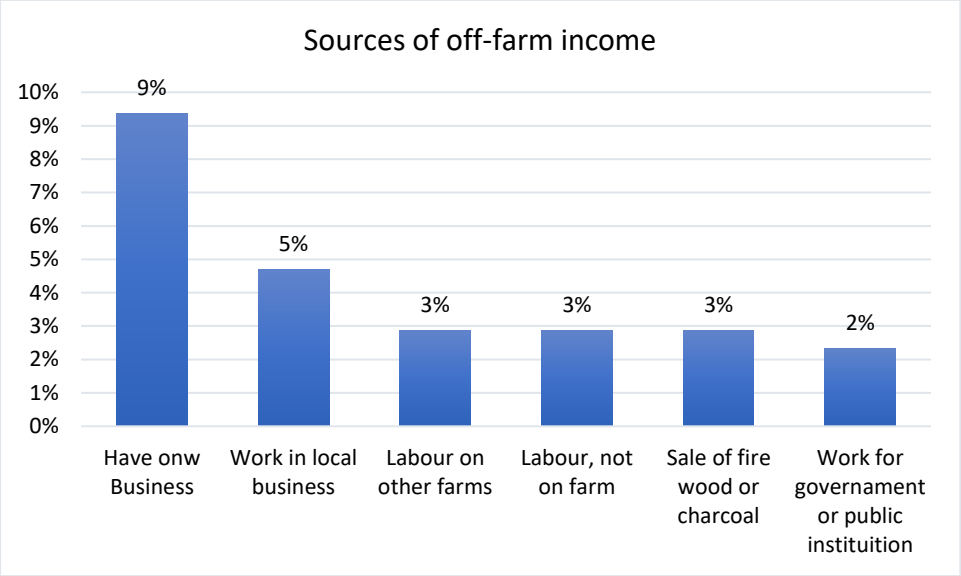
A produção dos agricultores entrevistados destina se basicamente ao consumo familiar

Table 6: Farm Incomes and Productivity Group

Variable	Measure	Sofala	Manica
TVAp MAE	MeanSe	0.5 (0.2)	0.6 (0.1)
Cash Income Dollar per day	MeanSe	0.1 (0.2)	0.2 (0.1)

Variable	Measure	Sofala	Manica
Crop Value per year	MeanSe	533.8 (199.2)	611.8 (196.7)
Livestock Value per year	MeanSe	128.3 (35.7)	230.2 (138.6)
Off-Farm Income value per year	MeanSe	4.6 (12.8)	22 (72.3)
Num In come Sources	MeanSe	3 (0.1)	3 (0.1)
Market Orientation per cent produce sold	MeanSe	0.1 (0)	0.2 (0)

The income obtained from the sale of agricultural production 96% uses to compare food, 50% to buy possessions (clothes, vehicles, items for the family), 42% with household members (education, health, travel, etc) and 30% is used to invest in agriculture.
Farmers are not in the habit of using the income from agriculture in agriculture, so there is a need to encourage them to invest more in agriculture and thus increase their areas and productivity to obtain more income and consequently more gains.
In addition to agriculture, respondents have other sources of income, 9% Have on Business, 5% Work in local business, 3% Labor on other farms, Labor, not on farm and Sale of firewood or charcoal, 2% Work for the government or public institution. According to the farmers interviewed, the income that comes from activities outside agriculture 22% used to compare food, 19% to buy possessions (clothes, vehicles, items for the family), 17% with household members (education, health, travel, etc) and 10% is used to invest in agriculture.



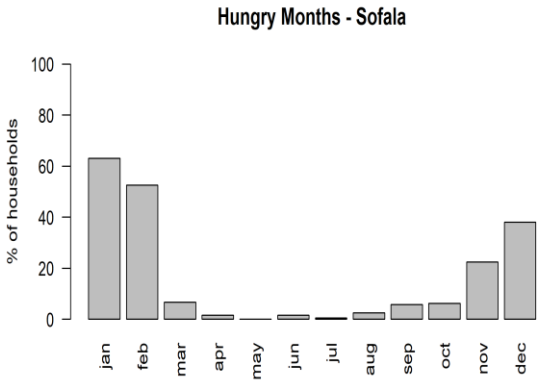
Graphic 15: sources of off-farm income

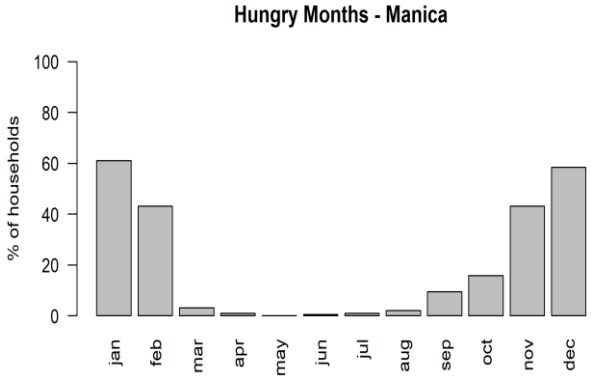
3. Food Security

Farmers interviewed 60% reported going hungry in January and February, 50% in November and December. In Sofala province with less intensity in November and December with an average below 40%, this and the farmers of the province of Manica face more difficulties in

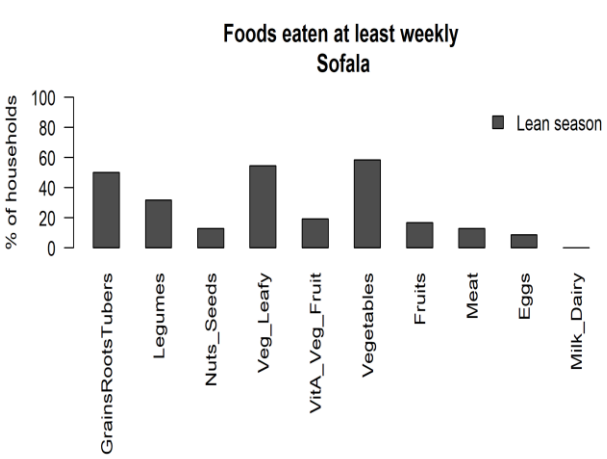
the availability of food in November and December concerning the ones of the province of Sofala.

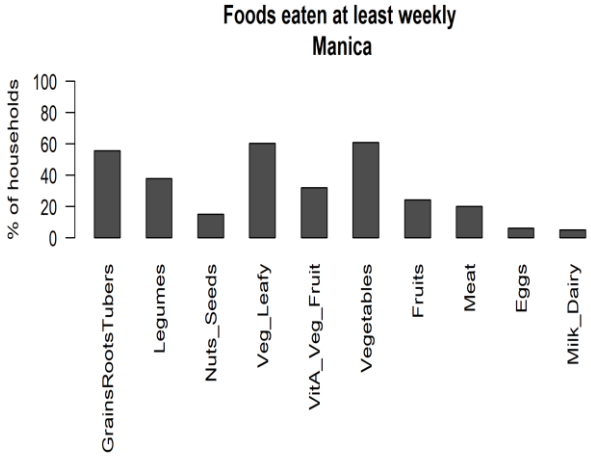
The graph below illustrates the months of food shortage as reported by households.



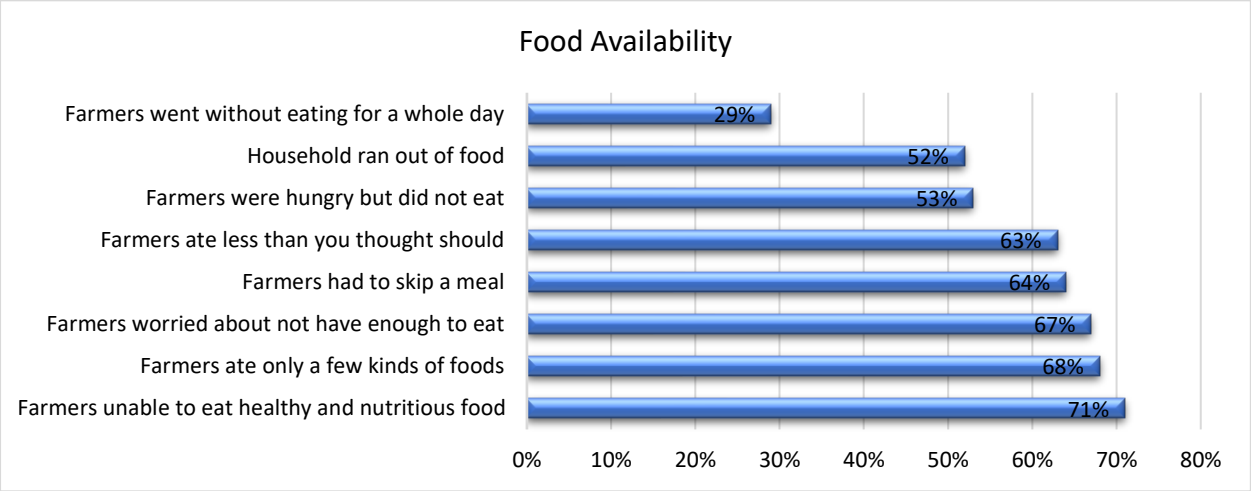


Farmers interviewed responded that they fed mostly (above 50%) with tubers, vegetables, and vegetable leaves, 30% with vegetables, less than 20% with nut seeds, fruits, eggs, meat, and milk.



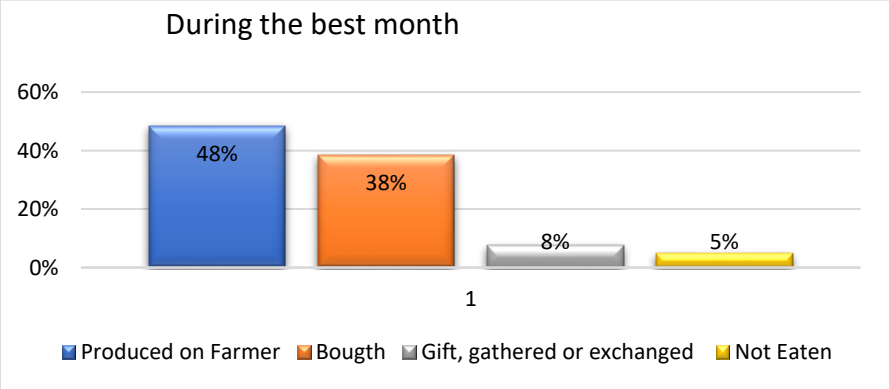


Farmers assisted by TEAMS their food chain is made of tubers, vegetables, and leafy vegetables and in the minority fruits, eggs, milk, and meats.



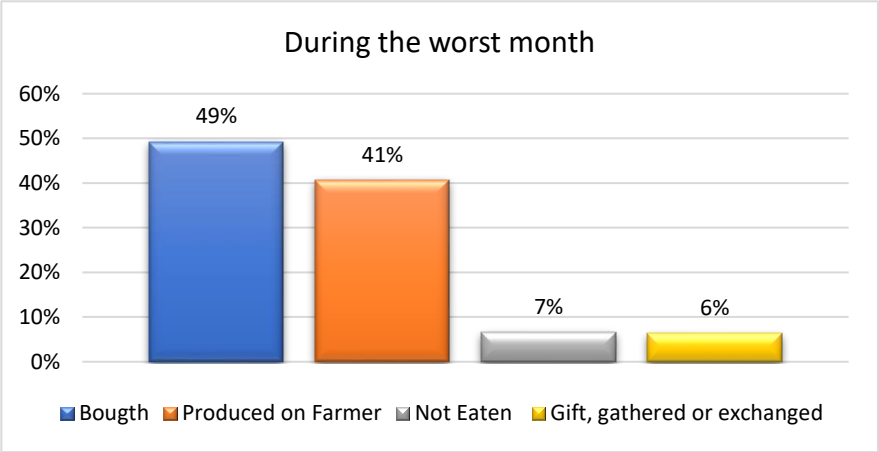
Graphic 16: Food Availability

During 2020, 71% of the farmers interviewed reported being unable to eat healthy and nutritious food, 68% even reported only a few kinds of foods, 67% worried about not having enough to eat, 64% had to skip a meal, 63% even less than you thought should, 53% were hungry but did not eat, 52% ran out of food, 29% went without eating for a whole day.



During the best months of the year, 48% of farmers eat food produced in their fields, 38% bought it, 8% received or exchanged it and 5% did not eat.

Graphic 17: Availability of food during the best month



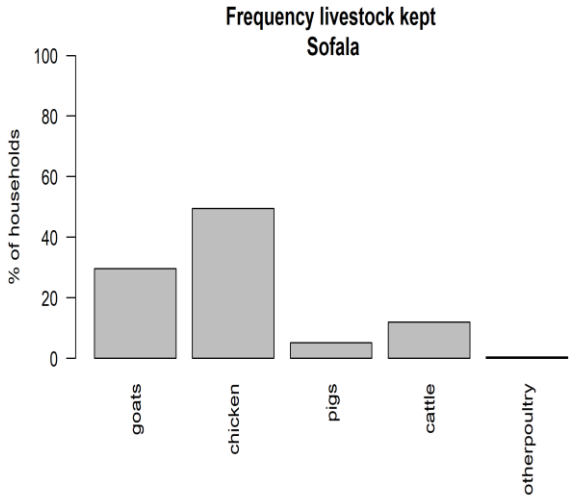
During the worst months of the year, 49% of farmers feed on purchased products, 41% depending on what they produce and 7% do not eat, and 6% depending on offers.

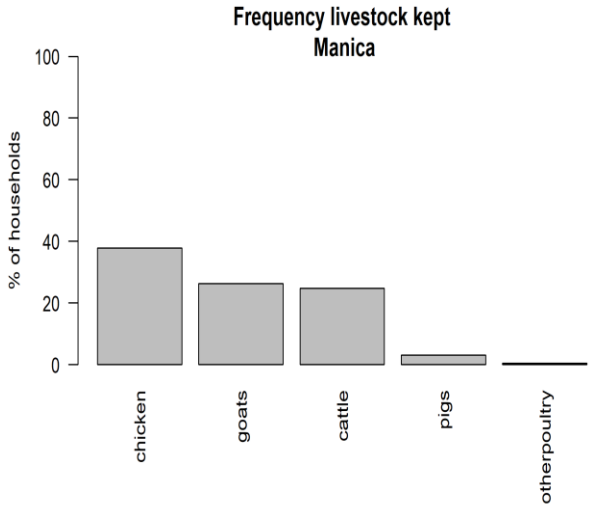
Graphic 18: Availability of food During the worst month

Last year 44% of respondents reported having received aid from the government, NGOs, or other organizations. Of those who received, 89% received agricultural inputs, 44% received food, 2% received money and or animals.

3.1. Livestock

The assisted farmers raise 50% chickens, 30% goats, 20% cattle and less than 10% raise pigs. Farmers in Manica Province raise more goats and cattle while in Sofala Province raise more Chickens and Goats.





Cattle raising is intended for sale, goat farms are raised for marketing and consumption in the household, chickens are mostly raised for marketing and consumption. More details are in the table below.

Table 7: Primary Livestock by Place

Animal	Variable	Measure	Sofala	Manica
Cattle	kept	MeanSe	0.3 (0.4)	1 (0.3)
	sold	MeanSe	0.5 (0.1)	0.5 (0.1)
	slaughtered	MeanSe	0 (0)	0.1 (0)
Goats	kept	MeanSe	1.1 (0.3)	1.4 (0.3)
	sold	MeanSe	0.9 (0.2)	1 (0.1)
	slaughtered	MeanSe	0.9 (0.1)	0.7 (0.1)

Animal	Variable	Measure	Sofala	Manica
Chickens	kept	MeanSe	6.1 (0.8)	9.7 (1.5)
	sold	MeanSe	2.4 (0.3)	2 (0.4)
	slaughtered	MeanSe	4.2 (0.3)	4.4 (0.3)

4. Conclusion and Recomedations

The TEAMS program is based on 3 specific outcomes which are:

1. continue to support scaling the adoption of new climate-adapted technologies and practices for sustainable diversification
2. Intensification of cereal, legume, and vegetable crop production,
3. improve household nutrition increaseaing food availability and dietary diversity from diversified farming systems that can grow more demand-preferred crops and nutritious foods, which can then be sold to market or consumed by households.

In interventions that aim to support the adoption at the scale of new technologies and practices adapted to the climate for sustainable diversification and intensification of the production of cereals, pulses, and vegetables, currently, farmers reported low incomes, and these crops represent the main source of food and income. thus, having a major impact on their lives. Therefore, the improvement of the techniques used in the cultivation of this crop could lead to an increase in production and productivity and, to a certain extent, improve the living conditions of farmers through the gains obtained from the sale of this cash crop, so TEAMS must guarantee that these improved and environmentally friendly production techniques are disseminated and adopted by the majority of farmers assisted through the UTTIAS technology transfer units, engaging a greater number of producers in the routine activities of the activities, on-field days and creating ownership by the farmers guaranteeing in this way that they applied the techniques in their Farm. The same can be applied in the production of horticulture where farmers are betting on cabbage, tomatoes, and cabbage, then, on how to improve their production, encourage the use of short-cycle varieties, drought-resistant varieties, and high productivity.

To improve household nutrition by increasing the availability of foods and foods from diversified farming systems that demand more diversified foods and preferred diversified foods, which can be sold in the market or household consumers. Since most farmers do not use seeds and improved varieties, fertilizers, and/or pesticides on their fields, it is, therefore, necessary to demonstrate the advantages these inputs have over the methods currently used to influence farmers to adapt and invest in seeds. and improved varieties, fertilizers, and pesticides, to increase their yields and consequently gains.

Of the few that have access to inputs, they travel long distances to acquire which makes them expensive to acquire, so we must create conditions for local resellers of inputs established by the program to have the varieties and cultures disclosed and demonstrated by UTTIAS, reinforcing information about the availability of inputs in stores with farmers to join the stores and the types of inputs disclosed.

The set of activities incorporates the appropriate applications of an extension adapted to access through ICT4Ag the measures integrated to the integration of Mozambican social services and digital resources for better agricultural management tools and other services to the integration of COVID-19 social distancing and that provides critical information related to climate and climate. The farmer is not aware of the practices that can harm the soils, therefore, these practices must be disseminated to preserve the soils and maintain their fertility for a long period.

The farmer tends to use the income from the commercialization of agricultural surpluses and other sources of income mainly with other foods, buy goods and spend on health, education, travel and not invest the gains in agriculture to grow and produce more and earn more. It is necessary to encourage them to invest in agriculture to improve their working conditions, to make them realize that agriculture is sustainable work and a source of income and not just a means of subsistence.

IFDC
INTERNATIONAL FERTILIZER DEVELOPMENT CENTER
Bairro da Ponta Gea, Rua Serpa Pinto No.418, UC-C Q5
Beira, Sofala Province