FEED THE FUTURE
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Feed the Future Mozambique
Resilient Agriculture Market Activity - Beira Corridor
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Annual Progress Report: October 2018 - September 2019

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Image (cover page): Farmer holding pigeon pea seeds for use in planting cover crops

ACRONYMS AND ABBREVIATIONS

AIPM	Agro MBEU Machine Park
BCC	Behavior Change Communications
CA	Conservation Agriculture
CBSP	Community Based Service Provider
CIMMYT	International Maize and Wheat Research Center
CPI	Investment Promotion Center
DPASA	Provincial Directorates of Agriculture and Food Security
DPIC	Provincial Department of Industry and Commerce
EMM	Multi Media Extension Project
EMMP	Environmental Mitigation and Monitoring Plan
FAO	Food and Agriculture Organization
FAW	Fall Armyworm
FDA	Agrarian Development Fund
FTF	Feed the Future
FTs	Farmer Trainers
Gm / CCS	Green manure/cover crops or mulch crops
GOM	Government of Mozambique
IAP	Agro - Livestock Entries
ICC	International Capital Corporation (M & E firm)
ICS	Institute of Social Communication
IDE	International Development Enterprises
IIAM	Agricultural Research Institute of Mozambique
IMPACTS	M & E platform used in RAMA-BC
Inova	Agricultural innovations
IPM	Integrated Pest Control
K2	Klein Karroo Seed Company
MFF	Model Family Farm
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
OU	Observational Unit
RAMA-BC	Resilient Agricultural Markets Activity – Beira Corridor
RAMA- NC	Resilient Agricultural Markets Activity – Nacala Corridor
RFA	Request for Applications
SDAE	District economic activity services
SEMEAR	FTF project focused on adopting improved seeds
TOR	Terms of reference
TOT	Training of trainers
VSLA	Village Savings and Loans Association

PROJECT OVERVIEW

Activity date Start/End: 12 December 2016 - 11 December 2021

First Implementation Partner: Land O'Lakes Venture37

Project Description: Since December 2016 – the five year USAID Feed the Future and Resilient Agricultural Markets Activity – Beira Corridor (RAMA-BC) supports local producers to increase agricultural productivity, profitability, and resilience. RAMA-BC aims to promote the adoption of sustainable and affordable agricultural technologies and practicesthrough support for and facilitation of private sector engagement to test and develop profitable business models that deliver relevant information, consulting services, inputs, market links, and finance. The project currently operates in 9 of the Feed the Future districts in Manica and Tete provinces and targets key agricultural stakeholders working in the soybean, pigeon pea, sesame, beans, and cow pea value chains[1].

RAMA-BC consists of four components:

1. **Behavior Change Communication (BCC)** - development and implementation of a comprehensive BCC strategy, multimedia campaign, and local promotion through private partners and civil society;
2. **Model Family Farms (MFF)** - provision of business consultancy and technical assistance services through a network of community based demonstration fields and one-hectare Observation Units (based in agricultural colleges);
3. **Sustainable Extension Services** - strengthening of private extension services through Model Family Farms and local and community-based service providers, in coordination with public extension services networks; and
4. **Strengthened Market Systems** - tailored technical assistance to private sector partners and subsidies to ignite innovation in the agricultural sector.

Geographic Coverage: RAMA-BC currently targets the 9 FTF districts in the Beira Corridor zone of influence; namely Gondola, Chimoio, Manica, Barué, Sussundenga, Vanduzi, Macate, Angónia and Tsangano[2].

[1] These value chains are no longer considered 'key' by USAID, which will lead to a more flexible approach that capitalises on market opportunities.

[2] There will be a change in geographical coverage from 1 Oct, 2019, as the project withdraws from Tete and one district in Manica, while starting activities in four new districts of Sofala province (Dondo, Gorongosa, Nhamatanda, Buzi)

EXECUTIVE SUMMARY

During this reporting period, October 2018 – September 2019, RAMA-BC produced programs with Community Radio in the five radio districts, produced training and promotional videos with ICS, set up MFFs throughout the project area with private sector involvment, measured significant yield improvements, conducted training with Farmer Trainers and Adopters, responded to Cyclone Idai with sweet potato planting material distribution, worked with seed companies, and public extension partners to increase the profile of improved maize seed varieties and their cover crops and conducted gender and nutrition training through the platform of Savings Groups. This period was also characterised by funding uncertainty, and the project worked closely with USAID to resolve this, discussing options and budget realignment. A consequence of the funding proposal was to close Tete and expand into Cyclone Idai affected districts in Sofala Province. The project also completed the mid-term evaluation survey and subsequent analysis and the project draft is being finalized. The learnings from this mid-term evaluation will support adaptive management and alignment of project activities into the coming year.

An overview – by component follows below:

Component 1. RAMA-BC conducted a total of 227 events in the reporting period, reaching a wide audience through radio programs and spots, community dialogue, and field days. Many people were made aware of the benefits of CSA, with nearly 4,000 taking part in 57 field days, with many more beneficiaries listening to radio programs[3] on a wide variety of CSA related subjects. According to the results of the internal midterm evaluation, 86.7% of the participants had heard about climate change and CSA practices, and 73.7% learning through radio messages. Five videos were also produced by the Institute of Social Communication (ICS) on a variety of topics, including Fall Armyworm (FAW) control, soil fertility, jackbean preparation and the soil 'sponge' effect on rainfall absorption. Some of these programs, such as jackbean preparation and Savings Group meetings were also shown on Canal '0', national television. Land O'Lakes also produced a professional 3-minute promotional video, with a project participant, Farmer Trainer Nelia Francisco from Honde, in the Barue district of Manica province, who conveyed her positive experiences.

Component 2. Throughout the last year, RAMA-BC implemented nearly 130 MFFs in Manica and Tete provinces, where CSA techniques are being modeled and evaluated under farmers own conditions. Nearly half of these MFFs were set up by the private sector, government partners, and civil society. To maintain soil cover, the new concept of rotating the easy to establish and drought tolerant jackbean, with short cycle crops like soya and common bean, were experimented with, with differing results[4].

RAMA-BC has been conducting soil analyses in all districts of Manica province in partnership with Solidariedade who will be processing the analysis through the IAC laboratory. Nutrient levels (N, P, K) including soil health indicators such as acidity (pH) and organic matter /Soil Organic Carbon will be conducted. This will be an important evidence gathering exercise to support the earlier results where, after two seasons of CSA, yields have been improved by 85% when compared with traditional agriculture; soil health being the cause and maize yield being the effect.

[3] Reached 378,903 people at the last annual report. In the 5 radio districts there are a total of 1,479,950 people (ine.gov.mz data for 2019: Angonia: 486,251; Tsangano: 214,560; Barue: 281,828; Sussundenga: 182,179; Manica: 315,132). This is about 25% of the total population assumed reached.

[4] In some places cold weather inhibited development of the young jackbean plants.

Component 3. Engagement with seven seed companies, five universities, colleges and a training centre, along with 15 student interns and participants, five community radios, government SDAEs in four districts has helped to broaden the reach of CSA through other extension networks and actors. Through this cooperation the project has partnered with the University of Eduardo Mondlane on testing the efficacy of cover crops in repelling FAW and the effect of planting date on FAW infestation. It was found, over three successive planting dates, that an earlier planting date has the same effect on reducing FAW incidence and damage as spraying three times. Spraying pesticide also had the effect of reducing key FAW predators. Instead of chemical control as a response, RAMA is of the opinion that a combination of earlier planting and legume intercropping is a far more effective and accessible control method against FAW infestation for small holder farmers.

Component 4. RAMA-BC, over the past year, has also had an impact in the marketing of improved seed through private sector engagement. 12 agrodealers and four seed companies were directly engaged in marketing 22 tons of seed at a value of about $37,000. Another subgrantee, Luteari, who set up six buying points, purchased about 80 tons of pigeon pea and 122 tons of maize from approximately 650 producer households.

RAMA-BC has also focused on gender and nutrition in the past year, using the platform of 37 Savings Groups, mobilized by 14 community animators, mostly women. These Savings Groups are helping to facilitate community-based entrepreneurship and access to improved inputs. In this initiative, $8,500 was loaned out to members to finance a diverse range of activity, both consumption and business related; 600kg of seed, supplied by K2 to four Savings Groups, valued at $1,000 was sold on; 15 groups 'cashed out' $14,000 at the end of their first 'cycle'; Savings Groups engaging in trading purchased another 4 tons of maize production for $3,300 at a 50% profit[5]. These Saving Group platforms for gender and nutrition topics were involved in training and interaction on Gender Based Violence, vegetable drying, and processing of jackbean.

After the destruction by Cyclone Idai throughout the project area, RAMA-BC responded by acquiring 6 tons of Orange Fleshed Sweet Potato vines and distributing about 5kg of these vines to each of 1,074 households in 29 villages of 4 districts affected by flooding and wind damage.

RAMA-BC conducted yield measurements in 24 Model Family Farms (MFFs) across Manica and Tete. All of which have utilized two consecutive seasons of climate smart agricultural (CSA) practices. It is only in the second season, that the use of CSA practices starts to result in increased production through better soil health[6]. Results were compared with yields of traditional agricultural practices, as shown in 'control' sites. The results showed an overall maize yield increase of 85% as compared to the 'traditional' sites. This is encouraging, as it shows that the project is on the right track, increasing resilience and productivity in a way that does not rely on external inputs such as chemical fertilizer, which is beyond the reach of many farmers in Mozambique. This is also without accounting for the increase in yields due to intercropping with pigeon peas, lablab or cowpea, which aside from increasing yield per unit area, also 'stretches' the time period in which farmers are able to harvest fresh from the field. This effect is particularly significant pre and post-harvest, when food scarcity peaks. The same effect however, from this 'pilot' sample, will take time to disseminate to the larger population of farmers, as most adoption has taken place in the second season. This has been verified in the internal midterm evaluation, conducted in this period, and which has been submitted to USAID on October 30, 2019.

[5] This is a very high price, but quantities were small and frequently traded, the maize price has also increased due to scarcity

[6] Soil organic matter content, microbial activity, nutrient availability, water absorption and retention capacity

3. IMPLEMENTATION OF ACTIVITIES

3.1 Component I: Behavior Change Communication

In this year, the main activities carried out in Component 1 were the production and broadcasting of radio spots on the following topics: use of certified seed, preparation of jack beans for human consumption, and diversified foods (enriched porridge). These spots were produced in both Portuguese and local languages. Awareness activities on yield and gross margin calculation were conducted through radio programs, community dialogues and field days. Table 1 below shows the number and types of awareness events that were held in each district throughout the year.

Table 1: Number of awareness events per district

District	Type of events				Number of events
	Radio	Dialogues	Field days	Radio spots	
Chimoio	0	3	6	0	9
Sussundenga	20	14	6	4	44
Angónia	5	13	9	3	30
Tsangano	4	17	7	3	31
Macate	0	11	6	0	17
Barue	13	9	4	3	29
Vanduzi	0	1	5	0	6
Manica	35	12	3	3	53
Gondola	0	5	3	0	8
Total	**77**	**85**	**49**	**16**	**227**

One of RAMA-BC's radio programs is called "Producer's Hour," an adaptation of the radio series called Shamba Shape Up, produced by the Kenyan company MEDIAE. For this, a model family is chosen in each district where the project has a partnership with the community radio station (Sussundenga, Manica, Barué, Angónia, and Tsangano). These families are then followed up with twice a month to discuss their farming activities. This year, several topics were discussed: introduction to the Producer's Hour program (program debut), field preparation techniques using the principles of conservation agriculture, sowing techniques, improved seed use, intercropping, and the importance of weeding for a maize crop.

During field days, topics covered included the effects of green manure, processing of jack beans for human consumption, how to identify market opportunities, drama programs focusing on acknowledging and preventing gender based violence (GBV), incorporation of animal protein in the diet, how to cook green vegetables for health, how to solar treat seed and obtain maximum germination, drying fresh produce and conserving Vitamin A, and how to calculate gross margin from field production. In partnership with Macequesse Community Radio in Manica; and Sussundenga Community Radio, RAMA-BC covered 5 field days with live radio.

Radio programs with testimony from women who are survivors of GBV were also broadcast in the five districts where the project has partnerships with community radios. The purpose of these broadcasts is to raise the profile of gender based violence (GBV) as a development problem which inhibits women's agency and potential in agriculture while creating awareness and debate within communities and households of this hidden problem.

RAMA-BC actively promoted the successes and learnings from the project in array of different media platforms, especially to capture the way in which smallholders began to exhibit behavior change in farming practices. Several successful stories of farmers that adopted sustainable agricultural practices and technologies over two different seasons were submitted to USAID and broadly distributed on a number of different social media and other agricultural development-

oriented platforms. RAMA-BC, in partnership with ICS, has finalized the editing of 5 videos, of which 4 are based on the fact sheets produced by the project with the following themes: soil water infiltration; green manure crops; 'push – pull', and farmer-led soil fertility analysis, and jack bean preparation for human consumption. RAMA-BC's video on the use of jack beans for human consumption was broadcast on TV-Mozambique (TVM) program Channel 'Zero', as was a report by ICS on savings and rotating credit of a group of elderly people formed in collaboration with RAMA-BC. The aim is to raise awareness among farmers of the importance of savings, even when incomes are low, as a way of progressively improving living standards.

RAMA-BC hired Cinevideo to capture and film a success story. Nelia Francisco, the Farmer Trainer for Honde, Barue district, participated in a video, where she related how pigeon peas, when intercropped with maize, repels FAW. This activity took place from April 25 to 27, 2019, and will be used as evidence of the impact of the RAMA-BC project in its publication on various communication channels.

3.2 Component II: Model Family Farms

Over the project year, RAMA-BC established 129 MFF demonstration units to demonstrate, replicate and test Climate Smart Agriculture (CSA) technologies as an approach for small scale producers in their own field conditions. This raises awareness of RA and encourages a sense of ownership and experimentation of farming techniques to be adopted.

Using the experience learned in the past season, the Farmer Trainers (FTs) of each MFF selected the various green manure/cover crops (gm/ccs) they preferred to intercrop with maize. This process was guided and facilitated by RAMA-BC using the Conservation Agriculture principles that were clearly imparted and tried in the first season. For testing this year, the farmers chose the following types of intercropping: maize X Lablab, maize X cowpea X pigeon peas, maize X jack beans, common beans or soybeans followed by jack beans.

RAMA-BC coordinated with local partners to set up a total of 129 MFFs, of which 70 were established by the RAMA-BC team, 38 by the private sector, 16 by the SDAE, and 5 by the Marera Institute of Education (implemented by the students). The table below illustrates how these MFFs are distributed throughout the districts. MFFs established in partnership with the private sector, SDAE, and the Agrarian Institute of Marera are part of the sustainability strategy for the dissemination of RA technologies.

District	RAMA-BC	K2	Emilia	Sikadza Kokha	AIPM	SDAE	Marera	Total
Sussundenga	8		7			1		**16**
Barue	9	3				5		**17**
Gondola	6							**6**
Chimoio	7							**7**
Vanduzi	7	3				1		**11**
Manica	7	3				9		**19**
Macate	9						5	**14**
Angónia	10			6	5			**21**
Tsangano	7			6	5			**18**
Total	**70**	**9**	**7**	**12**	**10**	**16**	**5**	**129**

Table 2: Number of MFFs established per district

Weeding and field preparation started in mid-December 2018 to ensure proper crop field development, keeping in mind that if weeding is not done 30 days after germination, there may be a yield loss of up to 60%.

From January to March 2019, common beans were planted at 23 MFFs in Manica province. These areas were affected by long dry periods soon after the sowing of this crop. RAMA-BC also sowed jack beans in the 30 MFFs planted with soybean and pigeon peas as soon as the crops began to sprout to ensure longer term cover of the soil.

RAMA-BC facilitated a total of 57 field days during this year. Field days were held in two phases. Firstly, during vegetative growth of the crop to show the effect of cover crops, and secondly around maize harvest, to show the effect on yield. To publicize the use of green manure cover crops, a total of 30 field days were held. Of this subset, five field days were held in the Observation Units: 3 in Manica (1 Unizambeze, 1 Marera Institute, and 1 in IIAM) and 2 in Tete (1 Unizambeze and 1 in Satemwa). Seventeen field days were held at MFFs in Manica and four at MFFs in Tete. The remaining 4 field days were held on MFFs of the grant partners (2 with Sikadza Kokha, 1 with AIPM and 1 with K2). To demonstrate the benefits of using resilient agricultural technologies compared to those of the traditional agriculture on maize yield and gross margin, data was collected and analysed at a total of 27 field days. Of this subset, three field days were held at the Observation Units, 2 of which were in Manica (1 UniZambeze and 1 Marera Institute) and 1 unit in Tete (Satemwa). Sixteen field days were held at MFFs in Manica, and six at MFFs in Tete. The remaining two field days were held with grant partner, Sikadza Kokha. More field days had been planned in Manica province, but due to the effects of Cyclone Idai, it was not possible to hold all of them. Table 3 shows the number of field days held and their number of participants.

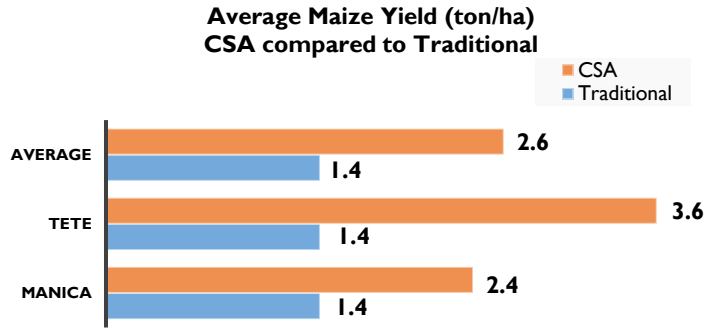
District	Number of field days	Number of participants
Vanduzi	5	317
Chimoio	6	551
Barue	8	555
Macate	6	453
Manica	7	307
Sussundenga	6	490
Gondola	3	249
Angónia	9	557
Tsangano	7	388
Total	**57**	**3,867**

Table 3: Number of field days and participants per district

In the 2018/2019 campaign, RAMA-BC also calculated the maize yield in the MFFs in order to compare the results of improved practices of CSA in relation to the results obtained when applying traditional agricultural practices, as used by smallholders in Manica and Tete provinces. For this purpose, it was planned to collect data from 21 MFFs in Manica and 6 MFFs in Tete at the rate of 3 MFFs per district, totaling 27 MFFs; the same number would be selected from neighboring farmers' fields to collect data of yields from fields wih traditional agriculture. However, it was only possible to measure the

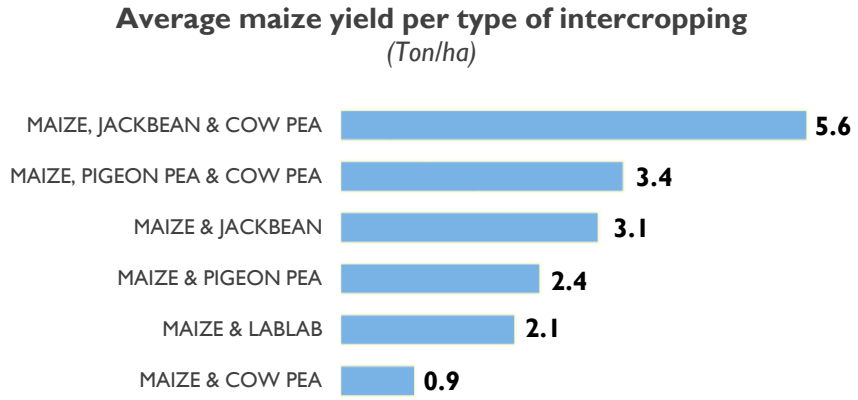
Weighing maize yield at field day in Tete Province

yield of maize in 24 MFFs[7] (18 in Manica and 6 in Tete) and 19 farmers applying traditional practices (13 in Manica and 6 in Tete). The smaller number of MFFs measured, compared to the planned was due to the cyclone in Manica province which negatively affected some MFFs.



Graph 1: Yield of maize in the 'traditional' group (control) and the intercropping group (treatment) in Manica and Tete provinces.

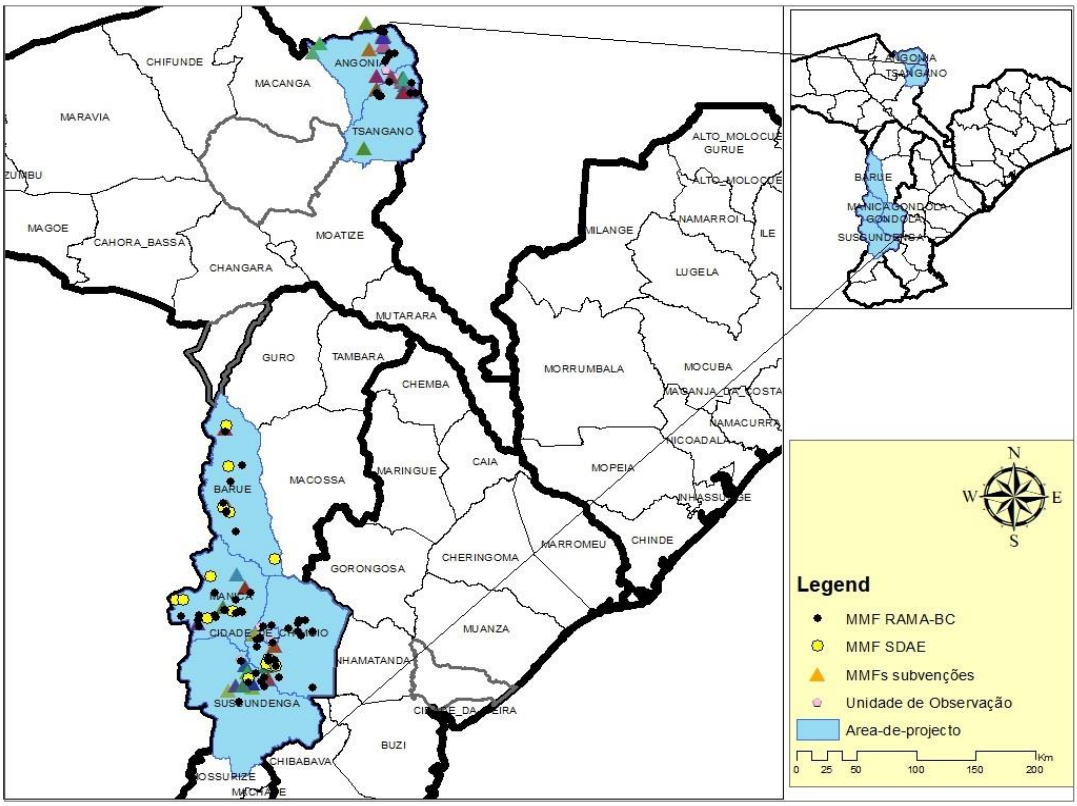
Graph 1 shows the average yield of maize using CSA practices; it shows a higher yield of 2.6 ton/ha compared to the yield of 1.4 ton/ha applying traditional agriculture. This first result is encouraging for RAMA-BC, as there has been an 85% increase in maize yield overall. When comparing maize yield in both provinces, Tete had a higher yield with an average of 3.6 ton/ha of maize compared to Manica province with 2.4 ton/ha due to weather factors. Tete had regular rainfall, while Manica had some water stress problems as a result of unusually high rainfall produced by Cyclone Idai.



Graph 2: Comparison of maize yield in different types of intercropping (treat-

On the following page, we have included a map and distribution of both Model Family Farms (MFFs) and Observational Units as situated in Tete and Manica Provinces.

[7] The yield measurement at the field days was for the whole field, so as to be instructive to the participants, whilst measuring gross margin benefit, when compared to traditional methods. The yield measurement done at the 24 MFFs was done on a sample and followed the AGRA protocol for measuring yield, also comparing to traditional methods.



Map 1: Geographical distribution of MFFs and OUs

3.3 Component III: Sustainable Extension Services

During the reporting period, RAMA-BC trained 49 staff and partner TOTs, who disseminated trainings to 486 farmers throughout the 129 MFFs. A detailed review of the training follows.

RAMA-BC conducted training in CSA for its own technical staff and the technical staff of public and private partners in Tete province on October 30, 2018. This totaled 21 participants (8 sub-grantees, 2 interns, 2 from SDAEs, 2 Community Radios, 1 UniZambeze teacher, 5 RAMA-BC Field Facilitators, and 1 technical personnel from Satemwa), of which 5 were women. The same training was held in Manica province on November 6, 2018, at the IAC facilities. In total Manica had 28 participants (8 RAMA-BC technicians, 7 SDAE technicians, 2 training institute technicians, 5 from the sub-grantees, 2 from Ecoteca, and 4 interns).

RAMA-BC conducted CSA training in all districts, using specific experiments from its Resilient Agriculture handbook to demonstrate soil and water infiltration, soil aggregate stability, and soil erosion prevention. In the end, 486 MFF participants benefited from these trainings that visually demonstrated the advantages of no-till and thus encouraging its adoption while fields are being prepared.

RAMA-BC held a discussion on CSA with partner academic institutions at IAC on October 29, 2018, with 30 participants (23 men and 7 women).

RAMA-BC established seven observation units, two in Tete in partnership with the UniZambeze and Satemwa training center and five in Manica with UniZambeze University, the Chimoio Agrarian Institute, the Marera Agrarian Institute, the Agrarian Institute of Mozambique Research, and Ecoteca a private company.

FAW Trials

RAMA-BC received two interns from Eduardo Mondlane University (UEM) and established three trials in UniZambeze, Ecoteca, and Machipanda; through this partnership, the project evaluated the efficacy of the FAW "push-pull" control method. The intercropping configurations used in the UniZambeze field trial were maize x pigeon peas and maize x jack beans, and at the Ecoteca they were maize x cowpeas and maize x Lablab. In this way, all major intercropping groups promoted by RAMA-BC were tested. The study conducted at the Machipanda Agroforestry Center evaluated the effect of different sowing dates on FAW control. In summary, these trials measured two main effects: 1) the effect of various crop combinations on the incidence of FAW, and 2) the effect of maize planting date on susceptibility to FAW infestation. In the context of this partnership, Dr. Domingos Cugala visited the RAMA-BC project on February 8, 2019 in order to monitor the 3 field trials.

It was found, over three successive planting dates, that an earlier planting date has the same effect on reducing FAW incidence and damage as spraying three times. Spraying pesticide also had the effect of reducing key FAW predators, such as the earwig (*Doru luteipes*) and ladybird (*Coccinellidae* spp), the reduction of which necessitates further repeated chemical control. There was also an inverse relationship, as to be expected, between FAW infestation and yield, likely also influenced by the earlier planting and longer growing season. The cost of the chemical spray (Belt ®), applied 3x, was equivalent to the revenue that would be realised from the sale of 1,200kg/ha of harvested maize grain, so the implications for economic thresholds, sustainability and risk reduction through earlier planting are clear.

For those who are not able to plant early (late rains etc), RAMA-BC awaits the results of other trials which measure the effect of intercrops (jackbean, lablab, pigeon pea and cowpea) on FAW infestation through the repellent effect of legume leaves on the FAW moth. Instead of chemical control as a response, RAMA is of the opinion that a combination of earlier planting and legume intercropping is a far more effective and accessible control method of FAW infestation for small holder farmers.

Soil fertility analysis

Throughout the project year, RAMA-BC conducted soil analyses in all districts of Manica province in partnership with the NGO, Solidaridad, who will be processing the analysis through the IAC laboratory. Nutrient levels (Nitrogen, Phosphorous, Potassium) including soil health indicators such as acidity (ph) and organic matter/Soil Organic Carbon will be conducted. Sixty-four fields have been analysed (45 Model Family Farms (MFFs) and 19 control plots). In the MFFs, farmers have had two successive seasons of applying RA practices, where soil health (fertility and structure) will have been improved by successive seasons of no-till and leguminous cover/intercrops. These analyses will be used to determine the impact of CSA over 2 years and make recommendations for improved planting practices. This will be an important evidence gathering exercise to support the earlier results where yields in the same situations have been improved by 85% when compared with traditional agriculture. This will show whether soil health is the cause of the increase maize yield. . IAC is offering a promotional price of 100mt/sample to increase farmer engagement with soil samples to determine fertility.

In partnership with several educational institutions, and to train future extensionist practicioners, RAMA-BC directly received 9 interns: 2 from UniZambeze Tete, 2 from UniZambeze Manica, 2 from IAC, 2 from UEM, and 1 from ISPM. RAMA-BC also hired 2 trainees to work alongside a Field Facilitator in Gondola, who is on maternity leave and another to work as the Macate facilitator. RAMA-BC is also providing technical assistance to 5 students from Marere College in Macate district who have established their own MFF along with their guardians using RA technology (as shown in Table 2 above).

RAMA-BC also conducted training, facilitated by extension agents, totaling 1,781 participants, of whom 878 were women, on postharvest management. These trainings covered the following topics: why grain quality is important and how to maintain it, proper threshing techniques, appropriate drying, grain quality standards, grain storage, and transportation.

From April 11 to 12, 2019, the RAMA-BC technical team, consisting of 4 people, together with a technician from the partner company Phoenix Seeds, participated in a learning visit to Hendrik O'Neill's innovative farm in Limpopo Province, South Africa. The aim was to ascertain practices and techniques for possible future use as a project approach. The trip showcased how how a resource-poor farmer, beginning with very limited resources (only nine pigs), succeeded to grow, and reach 800 pigs in 2 years, by using sustainable and low-cost techniques, such as control of movement, short duration and high pressure grazing, sequential grazing with pigs followed by poultry.

3.4 Component IV: Strengthened Market Systems

During this period, RAMA-BC worked with 12 retailers (selected from the 45 working with the project, as being more progressive) - (6 in Sussundenga, 3 in Barue, and 3 in Angónia) to provide personalized assistance in basic business accounting. RAMA-BC also worked with subgrantee partners to promote linkages between agricultural input suppliers and retailers to stimulate company sales.

Partner companies that benefited from RAMA-BC subgrants have established MFFs in promising areas to expand input sales that also demonstrate RA. This approach is at the heart of RAMA-BC's approach to combine business objectives with private sector-led extension using RA. Starter kits, which include improved seed packages, were delivered to 6 retailers (4 AIPM and 2 Sikadza Khoka) and 12 K2 coach producers (PT). The table below details the quantities of seeds received and sold by retailers.

Company	Retailers/Farmer Trainers	Crop	Qty (KG)	Sales (Mts)
AIPM	8	Maize	1,159	192,229
Agro Sikadza Kokha	11	Maize	3,712	568,400
Emilia Comercial	14	Maize	16,600	1,411,000
K2	12	Maize	764	84,620
TOTAL	**45**		**22,235**	**2,256,249**

Table 4: Quantity of seeds received by Retailers/FTs and their sales

The subgrantee companies established 38 MFFs in partnership with RAMA-BC; with 22 in Tete (12 Sikadza Khoka and 10 AIPM) and 16 in Manica (9 with K2 and 7 with Emilia Comercial). The subgrantee company Luteari Lda. finalised its agreement with RAMA-BC December 20, 2018. With the subgrant from RAMA-BC, Luteari undertook marketing for pigeon pea and maize, establishing 6 buying points; 5 in Gondola and 1 in Macate, where it bought 80 tons of pigeon pea and 122 tons of maize from small producers, benefiting 657 families who sold their produce.

As the subgrantees have been working with retailers who face various problems in managing their stores – such as poor working capital management, record keeping, cost allocation and pricing, sales and marketing business relationships with suppliers, and low quality input – RAMA-BC provided training in Basic Business Management for its own technical staff and subgrant partners. In Manica, the training took place from 13 to 15 February 2019 and in Tete from 26 to 28 February 2019. 27 participants in total attended, including 3 from K2; 2 from Emilia Commercial; 4 from Sikadza Kokha, and 4 from AIPM, plus 14 technicians from the RAMA-BC team. The topics covered were management of working capital, stock management, sales and marketing,

keeping basic records, costing and pricing strategy, and business relationship management (overcoming problems of trust).

RAMA-BC also conducted training in Structured Agricultural Commodity Market Systems to address the numerous challenges that smallholders have been facing, such as using improved seeds, CSA practices, and green manure/cover crops. This training was held in Tete from 26 to 28 March 2019 totaling 13 participants (4 Sikadza Kokha technicians, 4 from AIPM, and 5 RAMA-BC technicians); in Manica from 3 to 5 April 2019, with a total of 15 participants (10 RAMA-BC technical team, 3 K2 technicians, and 2 Emilia Comercial technicians). The topics covered were: introduction to a structured trading system, post-harvest management, grain standards, commercial grain handling, warehousing and storage, market information, receipt and administration of guarantees, commercial contracts, and dispute resolution.

RAMA-BC responded to the catastrophe that occurred in Manica province following Cyclone Idai; sourcing 5,926 kg. of orange-fleshed sweet potatoes for 1,074 producers in 29 communities in 4 districts (559 in Sussundenga, 46 in Macate, 469 in Gondola and Chimoio) with the largest number of beneficiaries in the district of Sussundenga, as the most affected. The orange-fleshed sweet potato vines were distributed to growers who had intention to plant sweet potato or that had low-lying areas.

RAMA-BC disimbursed **USD 94,764.53** over the year to sub-grantee companies to support project activities. Private companies also contributed **USD 14,166.14** equivalent worth of seed to the MFFs established by the project. Pannar Seed and Phoenix Seed are not beneficiaries of project grants, but they also contributed in partnership with the project.

Companies	Amount disbursed by RAMA-BC (MT)	Amount disbursed by RAMA-BC (USD)	Companies Contribution (MT)	Companies Contribution (USD)
AIPM	629,096.80	10,138.72	346,040.04	5,569.24
Agro Sikadzakoka	765,600.00	54,592.30	346,920.00	5,614.33
Emilia Comercial	452,180.00	7,255.09	-	-
K2	1,407,184.00	22,778.42	131,250.00	2,125.27
Phoenix seed			48,650.00	797.55
Pannar Seed			3,645.00	59.75
TOTAL	**3,254,060.80**	**94,764.53**	**876,505.04**	**14,166.14**

Table 5: Summary of subgrantee disbursements and contributions

RAMA-BC disbursed funds to subgrantees Emilia Comercial and Klein Karoo companies in Manica and Sikadza Kokha in Tete to purchase billboards to advertise their seeds. The goal of these grants were to promote seeds in selected areas. Klein Karoo received 6 billboards that were assembled and displayed along main highways at Chimoio, Vanduzi, Catandica, Inchope, Manica and Machipanda intersections. Emilia Comercial benefited from 2 billboards that were assembled and set up at Sussundenga District Township and Munhinga. The Tete grant beneficiary company received 2 billboards, which are still being installed in Angónia and Tsangano.

RAMA-BC met with the 4 companies that received sub grants (Emilia Comercial and K2 in Manica; Sikadza Kokha and AIPM in Tete) to sign closing letters for the agreements that ended on 31 May 2019. These companies, even though they had terminated their agreement with RAMA-

BC, continue to show interest, and are continuing to participate in extension on resilient agricultural technologies.

RAMA-BC participated in the launching of the Vanduzi campaign on July 5, 2019, along with partner companies Luteari Agriculture Inputs and Emilia Comercial.

Emilia Comercial selling Lab lab beans seed at the campaign fair launched in Vanduzi on July 5, 2019.

3.5 Cross-cutting: Gender and Nutrition

This cross-cutting component aims to contribute to the improvement of the diet and quality of life of the rural communities by encouraging local initiatives, promoting sustainable management of resources through the participation in Savings Groups as a platform for integrating Gender and Nutrition. Over the last reporting period, RAMA-BC continued trainings on gender and nutrition, and conducted studies to learn more about nutrition amongst project participants.

A training of community animators[8] in gender and nutrition was held on October 15, 2018, in RAMA-BC Offices. The training included division of labor, women's empowerment, and the use of locally available and season sensitive foods in a balanced diet. It was attended by 14 animators (4 men and 10 women). The training was participatory, enabling people to share and communicate their experiences, opinions, and views in a process that is transformative.

A mini survey was conducted in two communities in Manica district (Socera and Chinhambuzi) to integrate gender and nutrition activities. This showed, as expected, that project communities vary in their understanding of women's empowerment and nutrition. The data show that communities with undiversified diets lack basic nutritional knowledge or – in addition to lack of nutritional knowledge – they lack adequate access to food. The project has a great opportunity to improve quality of life with a combination of nutritional and agricultural education. This is also further born out by the surveys on dietary diversity and food security discussed below.

Results of survey of women's diversity of diet:

The average score for dietary diversity was 3.83 food groups (food groups defined as starches; dark green leaves, vitamin A-rich fruits and vegetables; other fruits and vegetables, organ meat

[8] Animators are volunteers, selected by the community to conduct activities that focus on gender and nutrition

and blood; meat and fish; eggs, beans, nuts and seeds; and dairy products). Tete had an average score of 3.97, only slightly higher than Manica that had a score of 3.80

Data was divided into terciles in order to further compare diets between participants by diet quality. Table 6 shows the average score by terciles and the number of groups.

1st tercile n = 88 (≤3 Food Groups)	2nd terciles n = 65 (4 Food Groups)	3rd terciles n = 65 (≥5 Food Groups)
2,65	4.00	5,27

Table 6: Average score for terciles

Table 7 below looks at food groups that were consumed by more than 50% of the population, and how consumption of those food groups vary across the terciles. The first tercile has no protein source, meaning that in the RAMA-BC approach it is very important to include beans as one of the crops, as well as prioritizing nutrition education. More qualitative research should be done to know more about existing barriers (e.g. lack of access or education) that can explain the low level of protein consumption, especially from beans, as this is one of the crops that RAMA-BC continues to promote. The project will follow this line of inquiry into the next project year. The most vulnerable tercile (the 1st), which also consumes the least amount of food groups, also consumes the least amount of beans. [9]

More than 80% of respondents said they consumed oil, which means that more than 50% in each tercile are oil consumers. There has been some improvement in the intake of Vitamin A-rich fruits and vegetables, with 34% respondents stating their consumption, compared to 17% in past

1st tercile n = 88 (≤3 Food Groups)	2nd tercile n = 65 (4 Food Groups)	3rd tercile n = 65 (≥5 Food Groups)
Starches	Starches	Starches
Dark green leaves	Dark green leaves	Dark green leaves
Other fruits and vegetables	Other fruits and vegetables	Other fruits and vegetables
	Meat and fish	Vegetables, Nuts and Seeds
		Fruits and vegetables rich in vitamin 'A'
		Meat and fish

Table 7: Food groups consumed by more than ≥50% of households by tercile

research. However, more education is required regarding the importance of this food group. Iron consumption worsened compared to past research, as only 11% of respondents reported eating animal foods. Additional research is required regarding the importance of animal products as a focus, not just education, but also consideration on how to create a project approach through village savings groups that promotes community savings and leverage to purchase these more expensive products.

RAMA-BC held cooking demonstration-sessions with jack beans. The demo taught the jack beans germination processing technique which has proven to be an easy and affordable way of removing toxins from jack beans, making them safe for human consumption. This technique is significant because jack beans were initially perceived as only usable for soil fertilization, as a pest repellant, and as a drought resistant crop. Now producers can employ jack beans for soil recovery and as a food source crop, especially during scarce periods. To complement the cooking demonstrations on jack beans, RAMA-BC also held demonstrations promoting the use of pigeon

[9] This analysis will also be done on a larger scale, using the mid term evaluation data, this report will follow.

peas, and Lablab beans in Manica, Sussundenga, and Gondola. 67 participants attended including 22 men and 45 women. There were on average 22 participants from each district. The participants from all communities were surprised to learn that Lablab was edible.

RAMA-BC also presented lectures on sexual violence based on the family law, with special focus on Article 391 of the Penal Code, which says, "Any attack on the indecency of the opposite sex committed with violence, either to satisfying lascivious passions, for whatever reason, will be punished with the prison sentence." The lectures also addressed the issue of inheritance in Article 83 of the family law, which says, "The government recognizes and guarantees under the law the right to the inheritance and that the children keep property that belonged to their parents after death." The other lecture was about gender based violence against women, which focused on law number 29/2009 article 19, which is fully in line with the Constitution of the Republic of Mozambique on gender based violence against women. Article 19 number 3 states that, "He who seizes the property of the woman's family nucleus after the death of the spouse or of the man with whom he or she lived in a de facto or similar situation is punishable with up to 6 months imprisonment." These lectures were held throughout the project implementation areas, with a total participation of 610 people (240 men and 370 women).

Two women, survivors of gender based violence, in Manica district, were identified to record radio interviews to be broadcast in the five radio districts (Barue, Sussundenga, Manica, Angónia, and Tsangano) and give their first-hand personal account, using their own stories of GBV and sharing how they overcame the trauma. The purpose of these testimonies is to help other victims of GBV, especially women and girls who suffer from this problem, to be more willing to report incidences of violence to the competent authorities (Office for Victims of Violence).

RAMA-BC worked to strengthen the 35 villages and saving loans association (VSLA) groups in the entire project area through monitoring visits in order to verify the group's notebook records. These groups consist of a total of 719 members (221 men and 498 women) with a cumulative savings value of 9,192,028 Meticais of which 523,680.00 Meticais were given to members for loans, with an additional social fund value of 58,119.00 Meticais. Through the loans made available in these groups, some women have been able to start a business. This experience builds

self-esteem and entrepreneurship for the participants which is vital to introduce women business owners into the market system. (See attached table 8).

Of the 35 VSLA groups, 15 groups (5 in Macate, 1 in Manica, 1 in Gondola, 4 in Barue, 2 in Angónia and 2 in Tsangano) 'cashed out' funds, at the end of the cycle, of 833,235.00 Meticais for different objectives, ranging from improvement of homes that were destroyed by Cyclone Idai, to marketing of agricultural products. It is noteworthy that these 15 groups distributed their funds and soon thereafter began a new savings cycle.

District	Name of group	Distributed value	Men	Women	Total
Barue	Kwyedza	66,500.00	18	12	30
Barue	Muromboziwa	61,332.00	12	14	26
Barue	Kupdza	18,800.00	10	10	20
Barue	Kubatsirana	176,471.00	22	32	54
Gondola	Kubatsirana	59,600.00	8	11	19
Manica	25 de Setembro	40,977.00	4	10	14
Macate	Kupeza urombo	94,255.00	15	17	32
Macate	Murimudimanbo	25,210.00	5	10	15
Macate	Mucunza	73,250.00	11	12	23
Macate	Mbaiana	54,515.00	0	14	14
Macate	Kupeza urombo	94,255.00	15	17	32
Tsangano	Tithandzirane	45,885.00	4	19	23
Tsangano	Chiquirizano	4,950.00	2	14	16
Angónia	Tithandzirane	11,350.00	8	14	22
Angónia	Tirimbique	5,885.00	4	6	10
Total		833,235.00	138	212	350

Table 8: Overview of VSLAs by district

The gender advisor conducted two VSLA group fundraising training sessions for Gender and Nutrition animators and the RAMA-BC technical staff; one in Manica Province taking place in March 13-14, 2019; the other in Tete on 19-20 March, 2019. The training aimed to ensure the proportional and transparent 'cashing out' of funds within VSLA groups. It was attended by 31 people (18 women and 13 men).

RAMA-BC carried out demonstrations on drying of fruits and vegetables, namely Lablab beans, pumpkins, kale leaves, and bananas. In addition, cooking demonstrations with jack beans and Lablab leaves, cabbage, fish, goat meat, and beans were held in four districts in the provinces of Manica (Barue, Manica, Gondola, and Chimoio); done during the field days in all districts. 870 people participated (500 women and 370 men).

RAMA-BC facilitated linking 4 groups of VSLA and other project beneficiaries with the K2 seed company to raise access to improved seeds. This process was carried out in Macate,

Sussundenga, and Gondola districts. K2 was able to sell 480 kg of maize to 4 savings groups and 107 kg of maize to 10 individual producers (8 men and 2 women), achieving a total of sales amounting to 63,060.00 Meticais.

District	Saving groups	Maize			Sales amount (Mts)
		Pris	Afriquen1	ZM523	
Gondola	Kubatsirana	95kg	60kg	-	17,150.00
Sussundenga	Chiedza che upenha	-	-	65 kg	5,200.00
Macate	Kupdza-urombo	72kg	70kg	-	14,960.00
	Matsassi	98kg	20kg	-	14,340.00
Macate	Other beneficiaries	25kg	20kg	-	4,850.00
Gondola	Other beneficiaries	40kg	22kg	-	6,560.00
Total	-	**330kg**	**192kg**	**65kg**	**63,060.00**

Table 9: Details of seed sales made by K2 within VSLA groups

The Gender and Nutrition Advisor has supported 14 VSLA groups in marketing maize in the Macate, Gondola, Vanduzi, Barué, and Sussundenga districts to increase their income. These groups bought 3,780 kg of maize at a value of 132,050.00 Meticais. They sold the same amount, at a value of 198,500.00 Meticais, realizing a profit of 66,450.00 Meticais.

District	Group name	Quantity of maze (Kg)	Purchase amount (Mts)	Quantity of maze (Kg)	Sales amount (Mts)	Profit (Mts)
Macate	Masuse	300	10,500.00	300	15,000.00	4,500.00
	Kupezaurombo	400	14,000.00	400	20,000.00	6,000.00
	Mucunza	300	10,500.00	300	25,000.00	14,500.00
	Nhamatua	300	10,500.00	300	15,000.00	4,500.00
Vanduzi	Belas	350	12,000.00	350	17,500.00	5,500.00
	Necubatsira 1	180	6,300.00	180	9,000.00	2,700.00
	Necubatsira 2	150	5,250.00	150	7,000.00	1,750.00
	Mercado Belas	250	8,750.00	250	12,500.00	3,750.00
Gondola	Macomboreiro	300	10,500.00	300	15,000.00	4,500.00
	Khubashirana	250	8,750.00	250	12,500.00	3,750.00
Barue	Kwayedza	300	10,500.00	300	15,000.00	4,500.00
	Kubasirana	200	7,000.00	200	10,000.00	3,000.00
Sussundenga	Kushanda mesimba	300	10,500.00	300	15,000.00	4,500.00
	Chiedzachempenho	200	7,000.00	200	10,000.00	3,000.00
Total		3780	132,050.00	3780	198,500.00	66,450.00

Table 10: VSLA groups supported in marketing maize

PLANNED ACTIVITIES FOR THE NEXT REPORTING PERIOD

RAMA-BC has prioritized the following activities for each component in the next quarter (October - December 2019):

4.1 Component I: Behavior Change Communication:

- Radio programs with themes on uncontrolled fires, land preparation;
- Broadcast Producer Time program using the Samba Shape Up model;
- Broadcast of Spots on good practices and sustainable technologies, green manure, use of improved seed and sowing;
- Following best practices promoted by the model families;
- Distribution of Resilient Agriculture manuals and technical briefs via USB drives for Agricultural Institutes and the public and private sector (500 units);
- Radio debates on FAW infestation in maize;

4.2 Component II: Model Family Farm:

- Harvest and yield measurement of pigeon beans, jack beans and Lablab;
- Meeting between followers of MFFs with input suppliers and buyers of agricultural producers to sign possible contracts;
- Collection and analysis of soil samples in all districts;
- Preparation of the next 2019/2020 agricultural season
- Identify trainer producers in the new province (Sofala);
- Establishment of MFFs in all districts;
- Maize and green manure crops sowing in all MFFs;

4.3 Component III: Sustainable Extension Services:

- Renew partnerships with educational institutions;
- Develop field protocols for MFFs and Observation Units;
- Planning joint activities with educational institutions to facilitate lectures;
- Identification of interns in educational institutions;
- Create partnerships with new educational institutions in Sofala;
- Establishment of Observation Units;
- Maize and cover crops in sowing the Observation Units;
- Assembly of tests with repetition of the consortium study for FAW control and study of sowing dates for FAW control;

4.4 Component IV: Strengthened Market Systems:

- Create partnerships with the companies ECA, DECA, ETG, Luteari, and Abílio Antunes for the agricultural commodities market;
- Renew partnerships with Phoenix, K2, Pannar, Emilia Comercial, and Companhia do Zembe to link producers in the supply of agricultural inputs;
- Personalized assistance to output marketing retailers;

4.5 Cross-cutting: Gender and Nutrition

- Monitoring and strengthening of PCR groups;
- Link PCR groups with suppliers of improved seed purchasing inputs;
- Identify victims of GBV to report on community radios;
- Strengthen drama plays in groups to spread messages about gender, nutrition, GBV, and family law;
- Gender lectures using hands-on exercises for women groups;
- Facilitate the legalization of savings groups;

- Support savings groups to increase their progressively sustainable joined income generation activity;
- Sensitize members, especially women, to register in literacy centers to learn writing and reading skills.

LESSONS LEARNED

- **Continue to promote the importance of 'Anchor'[10] crops (pigeon peas, jack beans and Lablab).** In addition to the many advantages they have as soil fertilizers, soil cover, soil moisture conservation, feeding, and FAW control, 'anchor crops' potentially reduce production costs for the smallholder farmer by reducing labor for weeding, ploughing, and purchase of fertilizers. Advantages derived from these anchor crops help the farmer to increase productivity as RAMA-BC has been able to show in the field-day events, they are also important in reducing labor costs, when one calculates the gross margin.
- **Showcase the effect of cover crops on improved yields.** It became clearer in the 2018/2019 agricultural season what effect cover crops (jack beans, Lablab, and pigeon peas) have on increasing the yields through soil fertility improvement; maize yields in the first RAMA–BC 2017/2018 agricultural season increased by 16% and in the second season 2018/2019, maize recorded a yield increase of 85%.
- **Promote early planting and diversity of cover crops to reduce FAW infestation**. Results shown under studies in partnership with UEM should be further disseminated and trialed in subsequent growing seasons.
- **Further promote the effects of pigeon pea as a FAW mitigation crop.** Pigeon peas, when pruned back from the previous season, have a greater repellent effect on the control of the FAW than pigeon peas planted in the same season. Therefore, RAMA-BC recommends to farmers to use the pigeon peas in two campaigns, pruning them in the second campaign at the height of 45 cm.
- **Capitalize on partnerships with colleges and universities**. this has been fruitful, providing a space for learning and research in the 1ha "Observation Units". Interesting research has also been conducted on FAW, some of the results of which are awaited. Internships with local students has also resulted in a professional level of learning as students have followed crops in a resilient agriculture context through the entire cycle.
- **Continue engagement with the private sector in promoting green manure cover crops**. In particular, Phoenix Seed has been an enthusiastic partner, having sown 5ha of jackbean and is poised to continue this partnership in Phase 2. This will include the promotional 'bundling' of covercrops with improved maize seed, trialing new varieties of lablab, training extension workers and radio programming. Other seed companies will also be included in the initiative.
- **Emphasize project activities that encourage more nutritious and diverse diets**. The project through the promotion of intercrops, does increase dietary diversity, through increased availability of legume crops such as pigeon pea and lablab beans. RAMA-BC, in collaboration with a nutrition intern, completed a study which showed that the most vulnerable tercile (those who consumed the least amount of food groups), also consumed the least amount of beans (see annual report). As such, the introduction of intercrops can have some important benefits, not only for soil fertility, but also for nutrition.

- **Continue complementary activities in gender and nutrition**. RAMA-BC has found that joining gender and nutrition together in the platform of savings groups is

[10] Leguminous cover crops that cover the soil for extended period, as opposed to other leguminous crops that are short season

particularly effective. When this is linked to radio programming, an outlet has been found for GBV survivor testimonies and messaging on nutrition. In the next phase, the project will consolidate gender, nutrition and communications under one position.

- **Continue use of radio.** The approach to radio has proved successful as shown in results between the treatment and comparison areas from the mid-term evaluation. Given that those radio broadcasts about climate change and resilient agriculture were mostly provided by RAMA-BC, it has been an effective method for sharing information.

COLLABORATION WITH PROJECT ACTORS

Links with relevant GOM Ministries

The project continued its partnership with the Provincial Directorates of Agriculture and Food Security (DPASA) and District Economic Activity Services (SDAEs) through combined events and various trainings from RAMA-BC.

RAMA-BC has regularly participated in and contributed to the planning of the district government action plans, and budgets preparation, through the delivery of quarterly reports at district and provincial levels.

RAMA-BC has also established 16 MFFs in partnership with SDAES in Sussundenga, Barue, Vanduzi, and Manica.

A Provincial Government delegation (DPASA-Tete), consisting of 4 members – of which 2 technical representatives in the area of study and planning, 1 technician from the agrarian extension services department, and 1 technician from the agriculture and forestry department – visited the RAMA-BC project in the district of Angónia and Tsangano. The purpose was together to monitor the activities being implemented by the project in its climate smart agriculture (CSA) program, and to verify and evaluate the results achieved and expected so far.

Links with other USAID projects

RAMA-BC attended a dissemination of information meeting about the FAO and USAID-funded MASA project, which has as its objective to combat the maize hopper caterpillar. The meeting took place in Maputo on March 25, 2019, with the presence of Mr. Pedro Dzukula, the present National Director of Agriculture and Food Security, Ms. Luisa Meque, Deputy Minister of Agriculture and Food Security, and Mr. Olman Serrano, FAO Representative. Mr. Serrano presented a success story on pigeon pea consortium (intercropping) and its fight against the FAW.

RAMA-BC (4 technical staff and 3 growers) participated in USAID VIP visit to ETG's warehouse on July 20, 2019, in the Beira city. The purpose of this visit was to expose the USAID staff, notably the USAID Administrator, Ambassador Mark Greene, on the real impact of Cyclone Idai via testimonies of affected growers.

RAMA-BC continued its interaction with INOVA, SEMEAR, P4I companies, and the RAMA-NC project through conference calls on November 8, 2018, and February 11, 2019. Other contacts were maintained at Chimoio level with INOVA, in coordination with partners that RAMA-BC and INOVA have in common.

A meeting was held with CNFA's Mr. Antonio Aljofre on November 21, 2018, and AgDevCo's Ms. Nadia Martinez on December 7, where RAMA-BC explained its methodology and geographic coverage.

MANAGEMENT AND ADMINISTRATION

Staff

Some staff (finance assistant from Tete, finance manager from Chimoio, a driver, a field facilitator from Angonia) left the project over the reporting period due to funding uncertainty. As RAMA-BC withdraws from Tete and enters into new districts in Sofala, recruitment will take place to onboard additional and replace those staff who transitioned off of the project while addressing the new scope and expansion into Sofala province. A finance intern was brought in as interim measure to replace the two finance staff that left. This intern was supported by other Venture37 staff who traveled from Maputo.

Activities Adaptation

RAMA-BC reduced expenditure so as to complete a full agricultural season in 2018/2019 and to continue activities while collaborating closely with USAID in advance of new project funding. At the same time, staff were kept informed of developments and efforts to cooperate with USAID in securing potential funding, which included sending proposals and cost projections to USAID at request. Modification #4 was fully executed on September 30, 2019 which restored the original total estimated cost and end date of the project while providing initial incremental funding to support expansion of project activities into Sofala province.

Following Cyclone Idai, the project responded to the event through Orange Fleshed Sweet Potato vine distribution to affected families and also contributed to the proposal for emergency funding from the OFDA response.

The security situation particularly along the N1 and N4 in Manica and Sofala, is delicate, with several attacks on vehicles. This has required careful monitoring and some restriction of travel.

Monitoring and Evaluation

- RAMA-BC MELP has been reviewed and submitted and approved by USAID;
- The RAMA-BC work plan has been submitted and approved by USAID;
- Systematic data entry completed in DevResults;
- Sending data to FTFMS in USAID because RAMA-BC cannot access the system;
- Completion of the RAMA-BC Internal Final Assessment SOW;
- Preparation of RAMA-BC Final Internal Assessment tools;
- Collection of Midterm Assessment data in the field and interviews with focus groups and key informants;
- Monthly Farmers Data Collection;
- Analysis of data on dietary diversity;
- Data analysis on yield measurement.

8. ANNEX A. TABLE PERFORMANCE INDICATOR

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
1	(EG.3.2-19) Value of smallholder incremental sales generated with USG assistance	USD	Total		2017	$ 0	$10,944	$ 15,000	-$766,992	$ 55,000	-$756,048	This indicator measures the increase in sales of participant farmers over their baseline sales. Participant farmers actually drastically decreased their sales this year. Based on the midterm assessment, the season was very poor, resulting in poor yields, and many fewer farmers actually sold crop than at the baseline. To account for the differences in season, we employed a difference in difference approach in our midterm and compared the sales from participant groups at baseline and midterm to the sales from comparison areas at baseline and midterm. The result was a $1,835816 in incremental sales, showing that our participants fared better than in the comparison areas.
			Merchandise	Soy			$6,017		-$111,637		-$105,620	
				Pigeon pea			$46		-$50,156		-$50,110	
				Maize			$2,969		-$460,660		-$457,691	
				Sesame			$737		-$42,275		-$41,538	
				beans			$1,175		-$102,264		-$101,089	
			Sex	Male			$3,704		-$645,314		-$641,610	
				Female			$7,240		-$121,678		-$114,438	
2	Value of incremental sales generated by input provider partners	USD	Total		2017	$ 0	$288,884.13	$ 361,000	-$34,279.88	$ 791,000	$254,604	This indicator reflects the increasing sales value of RAMA-BC partners. This value was obtained through interviews with 5 of the 8 project partners (4 men, 1 woman) with total incremental sales of -34,279.88 USD. These sales increments were very low for last season compared to baseline due to the fact that the major customers of these seed companies are NGOs and Government and in the past campaign there was low demand for agricultural inputs from these organizations and consequently low sales and sales value.
			Sex of Ownership	Male			$276,625.80		-$10,212.55		$266,413	
				Female			$12,258.33		-$24,067.33		-$11,809	

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
3	(EG 3-6,7,8) Farmer's gross margin per hectare, per animal, per cage obtained with USG assistance	USD	Soy	Total	2017	$114	$494	$ 496	$64.9	$ 496	$64.9	This indicator shows the gross margin of small producers. Note the low gross margin values against targets, as well as baseline data for pigeon pea and soybeans, but larger for sesame and beans. The pigeon pea crop showed low values due to the fact that study data collection occurred during the harvest period and, therefore, they did not complete the harvest or harvest sales. For soybean the factor was climate, heavy rainfall followed by cyclone Idai that devastated several fields in Manica, causing low production.
				Male		$92	$568		$85.89		$85.89	
				Female		$137	$420		$4.,67		$47.67	
			Pigeon Peas	Total	2017	$112	$13.8	$ 114	$15.68	$ 114	$15.68	
				Male		$89	-$7		$11.25		$11.25	
				Female		$134	$34		$20.11		$20.11	
			Sesame	Total	2017	$90	$76	$ 94	$164	$ 94	$164	
				Male		$93	$37		$205.89		$205.89	
				Female		$87	$116		$122		$122	
			beans	Total	2017	$98	$12	$ 100	$120	$ 100	$120	
				Male		$109	$7		$267		$267	
				Female		$87	$17		$50.69		$50.69	
4	Average yield per hectare	Metric tons per hectare	Soy	Total	2017	1,11	0.66	1.12	0.26	1.12	0.26	This indicator reflects the yield in MT/Ha of the RAMA-BC value chains. These data were obtained from the Midterm Evaluation household survey. Soybean, sesame, common bean and cow peas yields were relatively low relative to the baseline and FY3 targets. Pigeon Peas was particularly low because the harvest was not over prior to data collection. The low yield across all crops was due to the method of collecting income data being subject to inaccuracies; cyclone Idai caused flooding in some target areas in Manica during the season.
				Male		1,12	0.71		0.34		0.34	
				Female		1,09	0.58		0.21		0.21	
			Pigeon pea	Total	2017	0,39	0.697	0.40	0.46	0.40	0.46	
				Male		0,41	0.027		0.15		0.15	
				Female		0,37	1.18		0.1		0.1	
			Sesame	Total	2017	0,57	0.073	0.68	0.16	0.68	0.16	
				Male		0,37	0.06		0.18		0.18	
				Female		0,77	0.083		0.14		0.14	
			beans	Total	2017	0,46	0.462	0.50	0.15	0.50	0.15	
				Male		0,48	0.697		0.12		0.12	
				Female		0,44	0.159		0.08		0.08	
			cowpeas	Total	2017	0,37	0.121	0.38	0.25	0.38	0.25	
				Male		0,33	0.105		0.1		0.1	
				Female		0,41	0.148		0.07		0.07	
			C0rn =	Total	2017	1,02	1.3	N / A	0.55	N / A	0.55	
				Male		1,99	1.5		0.61		0.61	
				Female		1,06	1.2		0.5		0.5	
		%		Total	2017	49%	68%	75%	85.9%	75%	85.9%	

[11] While maize is not a target crop, the side effects of the use of improved practices promoted by the project will be monitored for the production of maize.

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
5	Percentage of farmers that can accurately recite improved techniques and technologies		Sex	Male		52%	72%		86.3%		86.3%	This is the percentage of farmers who have been able to accurately speak at least four Resilient Farming improvement practices, based on household surveys conducted during the midterm assessment with a sample of 1081 farmers interviewed this year in all RAMA BC intervention districts.
				Female		46%	66%		84.9%		84.9%	
6	(EG 3.2-20) Number of for-profit private enterprises, producer organizations, water user association, women's groups, trade and business associations, and community-based organizations (CBOs) that applied improved organizational level technologies or management practices with USG assistance	#	Total		2017	0	8	20	7	20	7	This indicator reflects the number of partner companies that have adopted new organizational management technologies with the assistance of RAMA-BC. This number is derived from interviews with 5 partners and reports. Although this number is below target, it is the total number of partners with which RAMA-BC has focused on working in this period, and assistance to retailers has been provided through these companies.
			Type of organization	Private company			8		7		7	
				Producer organizations			0		0		0	
				Women's groups			0		0		0	
				CBOs			0		0		0	
			Sex owners	Male			6		6		6	
				Female			2		1		1	
		#	Total		2017	0	4,643	7,016	7,956	7,016	7,956	

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
7	(EG.3.2-17) Number of farmers and others who have applied improved technologies or management practices with USG assistance		Sex	Male			2,093		4,000		4,000	The number of individuals who implemented at least one of the resilient agriculture best practices was 7,956. This number was obtained from household survey in the midterm assessment with a sample of 1081 farmers (428 male participants; 653 female participants) who reported adopting at least one improvement and were extrapolated to a total of 9,871 trained producers (4956F; 4913M).
				Female			2,550		3,956		3,956	
			type of Actor	Producer			4,643		7,956		7,956	
				From others			0		0		0	
			Type of technology	Crop Genetics			938		2,566		2,566	
				cultural practices			2,120		3,625		3,625	
				Pest Manage-ment			856		128		128	
				Ground			780		5,168		5,168	
				mitigating climate			869		5,771		5,771	
				climate adaptation			1,228		3,095		3,095	
8	(EG.11-6) Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change, as supported by USG assistance	#	Total		2017	0	4643	7016	5,771	7,016	5,771	This indicator measures the number of individuals implementing risk reduction actions through Resilient Agriculture. This figure was obtained through household survey in the midterm assessment with a sample of 1081 farmers (428 male participants; 653 female participants) who were extrapolated to a total of 9,871 participants in the RAMA-BC project.
			Sex	Male			2093		3,001		3,001	
				Female			2550		2,770		2,770	
9	(EG.3.2-18) Number of hectares of	#	Total		2017	0	8412	12,699	42,714	12699	51,126	The number of hectares with at least one improved Resilient agriculture technique is 42,714, which greatly
			Sex	Male			4069		29,134		33,203	
				Female			4343		13,580		17,923	

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
	land under improved technologies or management practices with USG assistance			Joint			n/a		N/A		N/A	exceeds the target for FY3. These figures were obtained from a sample of 1081 producers who claimed to have adopted at least one of the improved practices (291 women and 790 men) in the household survey in the Medium Term Assessment, extrapolated to a total of 8,136 RAMA-BC farmer households that have received training. The numbers are so large because more households adopted more practices than anticipated.
			Type of technology	genetic plant			3664		3,517		7,181	
				cultural practices			1446		24,578		26,024	
				Pest Manage-ment			6312		929		7,241	
				Ground			5290		5,380		10,670	
				mitigating climate			2645		20,254		22,899	
				climate adaptation			5899		17,343		23,242	
10	(EG.3.2-22) Value of new private-sector capital investment in the agriculture sector or food chain leveraged by Feed the Future implementation	USD	Total		2017	$ 0	28,953.88	$ 17,000	$14,166.14	$ 47,000	$43,120.02	This $ 14.166.14 reflects the contribution of grant recipients for this year on projects they are implementing in partnership with RAMA-BC.
11	(EG.3-9) Number of full-time equivalent jobs created with USG assistance	#	Total		2017	0	6.25	15	9.36	15	15.61	The 15.61 full-time jobs are extension agents and sales agents hired by companies that benefit from the RAMA-BC concession. For the period (October 2018-September 2019) 9.36 jobs were created.
			New	Total			6.25		9.36		15.61	
				Male			4.75		7.92		12.67	
				Female			1.5		1.44		2.94	
			continuing	Total			0		0		0	
				Male			0		0		0	
				Female			0		0		0	
12	Value of grants	USD	Total		2017	0	78,285.39	$ 100K	94,764.53	$ 860k	173,049.92	This indicator reflects the amount disbursed by RAMA-BC as grants to

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
	received by project partners as a result of the intervention		Sex	Male			52,522.05		87,510		140,032.05	beneficiaries. The total amount disbursed by RAMA-BC is $ 173,049.92, and for the period (October 2018 to September 2019) was $94,764.53. This amount accounts for the amount of salary disbursement, fuel for extension activities, value of motorcycle purchases, among other expenses. This is below target due to the fact that field days had been planned as one of the activities of these companies, but this could not be done due to the cyclone Idai that devastated the fields.
				Female			25,686.03		7,255		32,941.03	
13	(EG.3.2-5) Number of public-private partnerships formed as a result of USG assistance	#		Total	2017	0	21	0	0	30	21	This indicator counts companies, institutions and public and private organizations that have partnership agreements with RAMA-BC. This year, the project did not enter into new contracts because it intends to keep only existing agreements
			Sex	Male			2		0		2	
				Female			19		0		19	
			focus partnership	Agricultural production			16		0		16	
				Postharvest Transformation			0		0		0	
				Nutrition			0		0		0	
				From others			5		5		5	
				Multi-focus			0		0		0	
14	Percentage increase in women's decision-making index over household decisions	%		Total	2017	0%	38%	40%	17%	40%	17%	This indicator reflects the percentage increase in women's decision-making index from baseline. These data were collected through household survey in the midterm assessment.

#	Indicator	Unit	Disaggregation	Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
				Year	Actual	Actual	Target	Actual	Target	Actual	
	related to agriculture and income use										
15	Number of events held for the awareness and market information campaign	#	Total	2017	0	473	473	235	1439	708	The events being referenced here are radio programs on various topics related to resilient and gender agriculture, radio spots, community dialogues with MFF groups, field days and more.
16	(EG.3-1) Number of households benefiting directly from USG assistance under Feed the Future	#	Total	2017	0	7521	10929	3325	10929	10,846	This indicator counts households benefiting from TOT, MFF training, farmer training in MFFs, extension agent training, savings group participation / training, gender training, participants benefiting from nutritional activities, producers trained by beneficiary partners in donations, growers who benefited from the marketing of their products through the Luteari subsidy, growers who received sweet potato twigs after cyclone Idai.
			New		0	7521		3325		3325	
			continuing		0	0		0		7521	
			Rural		0	5160		2563		7723	
			Peri-Urban / Urban		0	2361		762		3123	
17	(EG.3.2-1) Number of individuals who have received USG-supported short-term agricultural sector	#	Total	2017	0	8,019	11,694	3,974	11,694	11,994	This indicator counts individuals from government, private sector, civil society, and producers who have received short-term training in resilient agriculture techniques, integrated pest management, data collection methodologies and business and marketing management, as well as business training by volunteers ,
			Producers – Total			6714		3157		9,871	
			Producers – Male			3275		1638		4,913	
			Producers – Female			3439		1517		4956	
			private sector – Total			253		74		327	
			private sector – Male			173		52		225	
			private sector – Female			80		22		102	
			Gove – Total			359		63		422	

#	Indicator	Unit	Disaggregation		Baseline		Year 2 (10/17- 9/28)	Year 3 (10/18 – 9/19)		Life of Project		Comments
					Year	Actual	Actual	Target	Actual	Target	Actual	
	productivity or food security training			Male			179		55		234	replications of the same training given to farmers in MMFs, training in infiltration of soil water using experiments, seed solarization, and other training.
				Female			180		8		188	
			Civil society	Total			693		680		1373	
				Male			398		443		841	
				Female			295		237		532	
18	(EG.3.2-4) Number of for-profit private enterprises, producer organizations, water user associations, women's groups, trade and business associations, and CBOs receiving USG food security-related organization development assistance	#	Total		2017	0	27	30	41	30	41	This indicator includes businesses and that benefited from subsidies, including supplier companies of agricultural inputs and retailers of agricultural inputs that are being assisted by RAMA-BC through training and personalized technical assistance in the areas of management and marketing.
			New			0	27		14		N/A	
			Continuing			0	0		27		N/A	
			Type of organization	Private company		0	27		41		41	
				Productio n tion organizes		0	0		0		0	
				Women's groups		0	0		0		0	
				CBOs		0	0		0		0	

Annex B. VSLA TABLE

District	Name of VSLA	Accumulated savings amount	Social fund value	Loan amount	Number of members		
					M	F	Total
Gondola	Khubashirana	17,535.00	812	16,600.00	10	9	19
Gondola	Chissunda	16,950.00	2,620.00	15,400.00	9	10	19
Gondola	Khubatana	13,250.00	1,255.00	7,730.00	8	6	14
Gondola	Makomborero	31,720.00	2,840.00	17,100.00	1	18	19
Gondola	Grupo de idoso	45,760.00	1,200.00	11,000.00	10	42	52
Gondola	Khubashirana	9,940.00	830	2,950.00	0	10	10
Vanduzi	Simukaikwaedza	5,370.00	610	3,590.00	4	8	12
Vanduzi	Mercado de bela	11,035.00	3,270.00	7,450.00	5	12	17
Vanduzi	Fadzamai	22,600.00	8,000.00	17,000.00	11	11	22
Vanduzi	Pamberinekubat	27,000.00	2,500.00	17,000.00	4	14	18
Vanduzi	Necubatsira1	24,000.00	3,005.00	11,750.00	4	20	24
Vanduzi	Necubatsira2	17,065.00	970	800	3	15	18
Vanduzi	Necubatsira3	4,740.00	505	3,340.00	4	11	15
Sussundenga	Chiedzachenpenho	66,400.00	985	66,000.00	4	10	14
Sussundenga	Kubhudhirira	6,000.00	160	5,400.00	1	12	13
Sussundenga	Kushanda mesimba	26,025.00	1,140.00	12,100.00	3	14	17
Sussundenga	Kussimudzirara	15,535.00	750	8,000.00	0	9	9
Sussundenga	Nhanguzue	26,355.00	1,516.00	15,600.00	1	13	14
Manica	Chissamba	23,203.00	1,765.00	7,880.00	8	18	26
Manica	Produssola	36,910.00	1,820.00	0	4	10	14
Manica	25 de Setembro	50,350.00	2,300.00	50,000.00	5	12	17
Chimoio	Kubatana	61,430.00	2,140.00	39,480.00	8	22	30
Barue	Kwayedza	8,420,000.00	735	7,500.00	18	12	30
Barue	Mulombo dziva	9,685.00	1,276.00	1,500.00	12	14	26
Barue	Kupedza	1,980.00	45	0	10	10	20
Barue	Tapfuma	12,860.00	765	12,860.00	0	15	15
Barue	Murombo diva	11,500.00	600	6,520.00	4	19	23
Barue	Kubatsirana	46,370.00	2,000.00	16,680.00	22	32	54
Barue	Mausca	8,300.00	600	3,800.00	8	7	15
Angonia	Dzamputeni	4,300.00	290	0	10	12	22

The 2019 agricultural season will end in September. Indicators that measure the application of improved practices, hectares improved, yields, gross margins and sales will be reported in the final project report.

District	Name of VSLA	Accumulated savings amount	Social fund value	Loan amount	Number of members		
					M	F	Total
Angonia	Juki-Juki	1,520.00	40	0	6	8	14
Macate	Mbaiane	15,500.00	3,000.00	10,000.00	0	15	15
Macate	Nzariapera	12,940.00	2,260.00	13,300.00	5	10	15
Macate	Kupedzaurombo	87,900.00	4,590.00	81,550.00	10	25	35
Macate	Nhagundula	40,650,00	925	33,800.00	9	13	22
		9,192,028.00	58119	523,680.00	221	498	719