



## **PHASE ONE PERMEZONE PROJECT IN ASUMBI- KENYA FINAL REPORT**

### **ACHIEVEMENTS**

#### **1) Profiling**

The farmers in Asumbi were profiled. This involved registration of potential project beneficiaries who were willing to be involved in the project activities. Before this was done, C-MRA team made a courtesy call to the local administration office at the Ward level to inform the authority in charge of the intended engagement with the farmers.



*Figure 1: Paul & Reagan during profiling of the project beneficiaries at the on-set of the project*

#### **2) Sensitization**

The farmers were then mobilized and sensitized about the project setup, objectives, expectations and the activities to be carried out.



*Figure 2: Reagan (left pic) & Paul (right pic) with the profiled beneficiaries during project sensitization sessions*

### **3) Lead Farmers Selection**

The initial 100 farmers were profiled, thereafter a criteria was developed for the selection of the 10 lead farmers. Thereafter, the 10 lead farmers were selected before being engaged in the project activities



*Figure 3: PermEzone field team (Paul & Reagan) & Stephanie from Biovision Foundation with the 10 project lead farmers and right, lead farmers during a group discussion session*

### **4) Curriculum Development**

Development of the curriculum was a participatory process where both C-MRA staff and the beneficiaries took part in developing the document. The beneficiary input were considered as it was tailor-made to suit them by adjusting the content that had been developed by the C-MRA staff. It involved beneficiary discussion groups and presentations.





*Figure 4: Clement Akoko (left pic) making presentations after a discussion group assignment & Reagan (right pic) guiding the farmers during a discussion group session*

### 5) MEL Workshop

A workshop was conducted with the 10 lead farmers with an aim of developing the project indicators. This was a participatory process that included the 10 lead farmers. It entailed a plenary session with a lot of discussions, group work and presentations. The indicators were developed that are used during the project life to track the changes. Thereafter, another workshop was carried out to develop the tools. These tools were translated in the local language in order to allow the process to be participatory by tasking selected lead farmers to collect the data on sessional basis.



*Figure 5: Helida Akinyi (left) presenting the outcomes of her group discussion to the participants & Clement Akoko (right) with his groupmates during a group discussion session during the MEL workshops.*

### 6) PDC Trainings

The 10 lead farmers were trained on a complete PDC course that was spread to be covered within 3 months. These training involved plenary sessions, discussion groups and presentations. The sessions were very participatory as the farmers shared a lot of cultural practices that they, their parents and grandparents were applying in their day to day lives that are in line with permaculture practices. These includes; **Pest Control**- using wood ash to dust the dried harvested grains to prevent attach by insects i.e. weevils, **Natural Building**- Building mad-walled houses and smearing them with cow dung for durability and beauty, hanging maize & sorghum seeds in the kitchen to preserve them for future planting etc.





*Figure 6: Reagan with lead farmers during a PDC training session and John Leonard Wao with his groupmates during a discussion group session*



*Figure 7: Reagan demonstrating to the farmers how to make a basket garden (left) & compost (right)*

## 7) Extension Work

After the PDC sessions were completed by covering the entire syllabus, C-MRA team embarked on extension work to enforce application of the permaculture practices.



*Figure 8: Stephen (left) & Paul (right) during extension work to the beneficiaries. Stephen assisting Leonard on sac gardening management and Paul assisting Helida on developing her farm design*





*Figure 9: Stephen assisting John Leonard on pest identification & control on his food forest and on the right assisting Felister's daughter on harvesting compost ready to be used in the farm.*



*Figure 10: Paul assisting farmers in laying down drip lines as a measure of minimizing wastage of water hence soil moisture conservation. On the right is a ripe & ready compost from Felister's farm as a result of PDC training & extension work.*

## **8) Quarterly Review Forums**

C-MRA carried out review sessions on quarterly basis to discuss on implementation of the techniques by the farmers



*Figure 11: Paul with lead farmers during a training review session*





*Figure 12: Paul with lead farmers during a training review session and on right guiding them during a group discussion session on the same.*

### **9) Implantation of Permaculture Techniques & Practices**

The implementation of these techniques were observed by these farmers applying them in their farms



*Figure 11: Jane Aluoch's spiral garden. Here she is growing local veggie. On the right is Felister Aludo making compost.*



*Figure 12: Felister (left) mulching her cowpeas crop to preserve the soil moisture during a dry spell. John Leonard at his established food forest.*





*Figure 13: Ms. Mary in her sac garden where she is growing vegetable to supplement her household needs. Reagan advising Jones Mbuya at his banana circle.*



*Figure 14: Reagan with Jones where he plants different vegetable for household nutrition. On the left is Ms. Margaret at her Kitchen garden where she plants different local vegetables.*



*Figure 15: Mr. Leonard (left) practicing mixed farming. He is integrating crop farming with poultry. Additionally poultry gives him Manure, eggs and meat which boosts his family nutrition. Ms. Mary (right) in her orange fleshed sweet potato vine multiplication site. This is a seed bulking site for clean and healthy vines. Orange Fleshed Sweet Potato is very rich in Vitamin A hence enhancing nutrition.*

## **10) Impact of Long Rains**

The rainy season started early –September 2019 and the rains were expected to end in early November 2019 but extended up to mid-December 2019 then stopped.



The rains created havoc in other parts of the country as it was accompanied by storm and floods. Luckily, during our permaculture workshop we trained the beneficiaries how to manage the excess rains by making good use of it. The farmers planted plenty of vegetable to make use of the plenty water and this had a very positive impact on their sales as they had plenty of harvests and consequently huge sales. They also practiced rain water harvesting.



*Figure 16: Emmanuel Shikuku Wao at his vegetable farm where he planted kales targeting the December market. On the right is a swale in his farm to sink the flood and here he planted the arrow roots to maximize the use of the run-offs.*

### **11) Networking & Partnerships**

During the project life, C-MRA networked & partnered with individuals and organizations across the globe.

The then PRI- Kenya Director, Sheena visited the project during the initial stages of permEzone project. During this time C-MRA was funded through PRI-Kenya.

C-MRA hosted Julia who the team met during a workshop in Dar-es-salaam Tanzania and after learning what C-MRA does, she got interested in learning more on permaculture. C-MRA also hosted Yoris who was a student in Germany pursuing his undergraduate in Sustainable Agriculture. Yoris was connected to C-MRA by PRI-Kenya and he was interested on getting practical experience to assist him in writing his thesis. C-MRA also hosted students from France. This connection too was made by PRI-Kenya. The students funded the construction of the coffee drying racks and bought a cherry pulping machine to the community. They actively participated in the construction of the structure.





*Figure 7: Sheena and Reagan having a chat with a beneficiary. On the right is Sheena with the farmers during her field visit.*



*Figure 18: Reagan with Julia (left) & Reagan and Yoris (right) both German nationals.*



*Figure 20: Reagan & Paul with the French students (left). Some of the French students at work (right)*





*Figure 21: Reagan with Christin from Germany and on the right is Susan Karendi who is a private consultant. She was advising our beneficiaries on coffee production.*

## **12) Staff Trainings & Visits**

PermEzone sponsored Paul who is C-MRA's Co-founder and Team Leader for a permaculture ToT course in Nairobi facilitated by Casper Brown. Paul and Sheena paid a visit to Safari Lounge Tea & Coffee in Nairobi to learn more on secondary coffee processing as permEzone project beneficiaries are also coffee farmers



*Figure 22: Paul & his groupmates during a group discussion at the permaculture ToT and on the left is Sheena, Phelister and Paul with Safari Lounge Director during a visit to his company.*

## **13) Data Collection & Documentation**

Development of Data Collection tools was done and these were translated into the local language for the beneficiaries to understand best. The first data collection done was baseline survey to determine the benchmark before implementation.

## **14) Methodology & Data Processing**

The 10 selected lead farmers actively participated in the development of the indicators to be tracked and also on the development of the survey tool (Data collection questionnaire). The lead farmers did collect the field data for the process to be participatory and the data was being verified by the field assistant and finally by the project coordinator at the field level. The project coordinator together with the permEzone MEL team developed an excel template to enter the data as shown in the annex.



## 15) Data Analysis and Findings

### **KEY:**

**Present Practice (P):** 0 = Not Existing, 1 = Existing;

**Quality (Q):** 0 = Needs Improvements, 1 = Good Quality, 2 = Excellent & Innovative

**BL** = Base Line Survey, **MT** = Mid Term Survey, **ET** = End Term Survey

The 10 lead farmers' data were collected using the data survey tool. This was done in three occasions; baseline, mid-term & end-term. The data collected was qualitative but then was converted into quantitative for easy analysis.

As per the above key, the highest score for present practice (PP) for each question should be  $(1+1+1) = 3$ . While the highest score for quality (Q) for each question  $(2+2+2) = 6$ . Therefore since there are 21 questions, the highest score per respondent for PP should be **63** points while Q should be **126** points.

Therefore the highest average score for **PP** should be **3** and for **Q** should be **6** for each of the 21 survey questions

### **Analysis**

	SURVEY QUESTIONS	AVERAGE SCORE		AVERAGE % SCORE	
		PP	Q	PP	Q
No.		<b>3</b>	<b>6</b>		
1	Farmer has a minimum of 6 crops planted	1.7	1.4	56.666667	23.33333333
2	Number of crops producing a yield	3	2.1	100	35
3	Farmer has effective seed storage facilities	1.2	0.8	40	13.33333333
4	Farmer is storing his or her own seeds	2.3	2.5	76.666667	41.66666667
5	Farmer is planting legume crops	2.6	2.6	86.666667	43.33333333
6	Farmer has a compost they are actively using	1.8	1.8	60	30
7	Farmer has several different types of crops planted together	2.1	1.2	70	20
8	Farmer is intercropping with pest repellent plants	1.3	0.2	43.333333	3.333333333
9	Farmer is using insect traps	0	0	0	0
10	Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0.2	0.2	6.6666667	3.333333333
11	Farmer is re-using greywater to water crops	1.9	0.9	63.333333	15
12	Farmer has a banana circle using greywater to grow crops	1.3	0.7	43.333333	11.66666667
13	Farmer has earthworks such as swales, berms	0.3	0	10	0
14	Farmer is using dead or living mulch	2	2.3	66.666667	38.33333333



15	Farmer has multipurpose trees around the compound	0.8	0.6	26.666667	10
16	Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	1.3	1	43.333333	16.66666667
17	Farmer has shared their farm practices with minimum 3 neighbours	1.7	1.1	56.666667	18.33333333
18	Farmer has confidence in his or her farming practices	2	1.8	66.666667	30
19	Farmer feels they have decision making ability over decisions relating to the farm and farm production	2.6	2.7	86.666667	45
20	Farmer is finding their own solutions to their challenges on the farm	1.9	1	63.333333	16.66666667
21	Farmer is showing creativity and innovation	0	0	0	0
	<b>TOTAL</b>			<b>1066.6667</b>	<b>415</b>
	<b>AVERAGE TOTAL</b>			<b>50.793651</b>	<b>19.76190476</b>

### **Findings**

From the analysis above, we have the total average % scores as follows: present practice 50.79% while quality at 19.76%. This shows that in terms of adoption the beneficiaries are trying but the quality of the adoption is still low.

Looking at the survey questions and their analysis, we can see that “Number of crops producing a yield” has the highest score of 100%, meaning that even before the permaculture intervention, these beneficiaries planted multiple crops and these produced yields and that their adoption rate after the training got even higher. But then looking at the quality scores which is 35% it shows that there is still room for improvement in terms of quality of the produce harvested.

There are two survey questions that the beneficiaries scored nil i.e. “Farmers using insect traps” and “Farmers showing creativity and innovation”. This shows that the beneficiaries did not adopt these techniques at all.

### **SUCCESS STORIES/ BEST PRACTICES**

**NAME:** John Leonard Wao

**AGE:** 54 Years

**PERMACULTURE TECHNIQUES:** Food Forest & Sac Gardening.

**CROPS PLANTED:** Kales, Coffee, Agro-forestry trees & Maize.



Figure 9: Mr. John Leonard Wao & his wife

### **Sac Gardening Technique**

Leonard Says, *“Currently my wife does not go to the market to buy kales as I have plenty of it from my two sac gardens. In fact I am planning to establish 4 more, one at each corner of this little farm. I am targeting the month of December which normally has scarcity of vegetable due to the cruel sun. This has taught me that one doesn’t need to have a large farm for him to produce volumes of vegetables.”*

Leonard is one of the lead farmers and currently, he is practicing sac gardening technique. This has enabled him to use his farm resources efficiently; He uses little water and a small land space for maximum production. His household expenditure has gone down as he doesn’t spend a cent to purchase kales. Currently, the region is getting rains and he has started a kitchen garden as you can see below. He has planted a variety of seeds including the cover crops (pumpkins) and legumes (beans and cowpeas). These have not yet germinated, but once they do then he will mulch the entire farm to conserve the soil moisture, as we are anticipating dry spell after the rains subsides.

### **Food Forest Technique**

Leonard says *“Since C-MRA taught me the different layers of a food forest and how to establish a good one, I have been intercropping my coffee trees with crops and trees that are compatible. I have a number of fruit trees; mango, passion fruit, banana, tree tomato, citrus and avocado. My farm looks healthier and richer than before, as it is ever green and I am expecting to harvest a variety of produce. Cover crops such as pumpkin and sweet potatoes provide shade to the soil hence retaining soil moisture longer.”*

Leonard’s food forest looks healthier due to the soil fertility as result of intercropping with leguminous crops such as beans and cow peas. This is his coffee grown food forest containing 400 trees of coffee, the Ruiru 11 variety inter-cropped with other beneficial crops and trees.



**NAME:** Phelister Aludo Ochieng'

**AGE:** 34 Years

**PERMACULTURE TECHNIQUES:** Composting & Mulching.

**CROPS PLANTED:** Cowpea, maize, Bananas & Beans.



*Figure 10: Ms Phelister Aludo as she prepares her compost*

Mrs Phelister Aludo is one of the 10 selected lead beneficiaries of the permEzone project, “Before getting involved with C-MRA, I used to apply Di-Ammonium Phosphate (DAP) to my farm every season and this costed me Ksh. 3,500 per bag per season. Every season I used 2 bags which totalled to Ksh 7,000 and each bag weighs 50kgs. If you include the transportation cost from Homabay town to my farm, then it totals to about Ksh. 8,000.” She continues, “It reached a point that even if I applied the DAP there was no significant improvement in my harvest, then I thought I needed to increase the quantity of application which I did but then the harvest even reduced further” She laments, “I was frustrated, but since I was trained by C-MRA on compost making which was one of the sessions I enjoyed the most, I resorted into it. It really doesn’t cost me a cent as I use locally available material and wastes from my farm. My soil has since improved a great deal and I can see a big change”

### **LESSONS LEARNT**

- The community is rich in knowledge as far as sustainable farming is concerned, but then they tend to trust chemical based farming at the expense of their cultural farming methods that were rich in permaculture techniques such as use of local solutions for local problems i.e. using wood ash to control aphids & white flies in their crops. They also use wood ash as grain preservatives and control weevils. Use of dry cow dung as cooking fuel and so forth. Therefore, the community need capacity building for them to value these rich knowledge.
- Involvement of other stakeholders in the project is paramount from the onset of the project all through to completion. This would contribute to sustainability i.e. linking the farmers with financial institutions to access savings & credit services and other service providers i.e. companies dealing in organic inputs.



- From our analysis of the 10 lead farmers, the findings show that the adoption rate is high but the quality is low. The lesson learnt there is that, we needed to introduce one or two techniques and ensuring that is done properly with all the lead farmers then introducing others slowly. This could work well than bombarding the beneficiaries with all the 21 techniques at once.

## **CONCLUSION**

- C-MRA is working on a sustainability plan; fundraising to acquire a land to establish a permanent permaculture site for its own.
- C-MRA is also looking at recruiting more staff into its programs for effectiveness and efficiency in the phase three of the project.

## **ANNEX**

Summary of Findings:

### **KEY:**

**Present Practice (P):** 0 = Not Existing, 1 = Existing;

**Quality (Q):** 0 = Needs Improvements, 1 = Good Quality, 2 = Excellent & Innovative

**BL** = Base Line Survey, **MT** = Mid Term Survey, **ET** = End Term Survey

	BL		MT		ET	
	(PP)	(Q)	(PP)	(Q)	(PP)	(Q)
<b>NAME: John Leonard Wao</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	1	1	1	2
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	0	0	0	0
Farmer is storing his or her own seeds	0	0	1	1	1	1
Farmer is planting legume crops	1	0	1	1	1	2
Farmer has a compost they are actively using	0	0	1	1	1	2
Farmer has several different types of crops planted together	0	0	1	1	1	2
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	1	1	1
Farmer has a banana circle using greywater to grow crops	0	0	0	0	0	0
Farmer has earthworks such as swales, berms	0	0	1	0	1	0
Farmer is using dead or living mulch	0	0	1	1	1	1



Farmer has multipurpose trees around the compound	0	0	1	2	1	2
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	0	0	0	0
Farmer has shared their farm practices with minimum 3 neighbours	0	0	0	0	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	2
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	1	1	1	1	2
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	1
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>3</b>	<b>1</b>	<b>12</b>	<b>12</b>	<b>15</b>	<b>20</b>

	BL		MT		ET	
	PP	Q	PP	Q	PP	Q
<b>NAME: Helida Akinyi Awiti</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	1	0	1	2
Number of crops producing a yield	1	0	1	0	1	1
Farmer has effective seed storage facilities	0	0	1	1	1	1
Farmer is storing his or her own seeds	1	0	1	1	1	1
Farmer is planting legume crops	1	1	1	1	1	2
Farmer has a compost they are actively using	0	0	1	0	1	1
Farmer has several different types of crops planted together	1	0	1	0	1	1
Farmer is intercropping with pest repellent plants	1	0	1	1	1	1
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	0	0	1	0
Farmer has a banana circle using greywater to grow crops	0	0	0	0	0	0
Farmer has earthworks such as swales, berms	0	0	0	0	1	0
Farmer is using dead or living mulch	0	0	1	1	1	2
Farmer has multipurpose trees around the compound	0	0	1	0	1	1
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	0	0	0	0
Farmer has shared their farm practices with minimum 3 neighbours	0	0	0	0	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	0	0	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	1	1	1
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>5</b>	<b>1</b>	<b>12</b>	<b>7</b>	<b>16</b>	<b>17</b>

	BL		MT		ET	
	PP	Q	PP	Q	PP	Q
<b>NAME: Phelister Aludo Ochieng</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	1	1	1	1
Number of crops producing a yield	1	1	1	2	1	2
Farmer has effective seed storage facilities	0	0	1	0	1	0



Farmer is storing his or her own seeds	0	0	1	2	1	2
Farmer is planting legume crops	1	0	1	2	1	2
Farmer has a compost they are actively using	0	0	1	2	1	2
Farmer has several different types of crops planted together	0	0	1	1	1	1
Farmer is intercropping with pest repellent plants	0	0	0	0	0	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	0	1	1
Farmer has a banana circle using greywater to grow crops	0	0	0	0	1	0
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	2
Farmer has multipurpose trees around the compound	0	0	0	0	0	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	0	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	1	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	0	0	1	0	1	0
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	0
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>2</b>	<b>1</b>	<b>14</b>	<b>12</b>	<b>15</b>	<b>16</b>

	BL		MT		ET	
	PP	Q	PP	Q	PP	Q
<b>NAME: Margaret Odero Ombuche</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	1	1	1	1
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	0	0	0	0
Farmer is storing his or her own seeds	0	0	1	1	1	1
Farmer is planting legume crops	1	0	1	1	1	1
Farmer has a compost they are actively using	0	0	1	0	1	1
Farmer has several different types of crops planted together	0	0	1	1	1	1
Farmer is intercropping with pest repellent plants	0	0	1	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	0	1	0
Farmer has a banana circle using greywater to grow crops	0	0	0	0	0	0
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	0	0	0	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	1	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	1	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	1	1	2	1	2
Farmer is finding their own solutions to their challenges on the farm	0	0	0	0	0	0
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>3</b>	<b>1</b>	<b>11</b>	<b>11</b>	<b>13</b>	<b>12</b>

	BL		MT		E T	
	PP	Q	PP	Q	PP	Q
<b>NAME: Emily Atieno Odipo</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	0	0	1	0
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	1	2	1	2
Farmer is storing his or her own seeds	0	0	1	2	1	2
Farmer is planting legume crops	0	0	1	1	1	1
Farmer has a compost they are actively using	0	0	1	1	1	1
Farmer has several different types of crops planted together	0	0	1	0	1	0
Farmer is intercropping with pest repellent plants	0	0	1	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	1	1	1	1
Farmer is re-using greywater to water crops	0	0	1	0	1	0
Farmer has a banana circle using greywater to grow crops	0	0	1	0	1	0
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	0	0	0	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	1	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	1	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	0	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	0
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>2</b>	<b>0</b>	<b>16</b>	<b>13</b>	<b>17</b>	<b>13</b>

	BL		MT		E T	
	PP	Q	PP	Q	PP	Q
<b>NAME: Emmanuel Shikuku Wao</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	0	0	1	0
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	0	0	0	0
Farmer is storing his or her own seeds	0	0	1	0	1	0
Farmer is planting legume crops	0	0	1	1	1	1
Farmer has a compost they are actively using	0	0	0	0	1	1
Farmer has several different types of crops planted together	0	0	1	0	1	1
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	1	1	1
Farmer has a banana circle using greywater to grow crops	0	0	1	1	1	1
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	2
Farmer has multipurpose trees around the compound	0	0	1	0	1	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	1	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	0	1	0



Farmer has confidence in his or her farming practices	0	0	1	0	1	0
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	1	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	0
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>2</b>	<b>1</b>	<b>13</b>	<b>7</b>	<b>16</b>	<b>10</b>

	BL		MT		E T	
	PP	Q	PP	Q	PP	Q
<b>NAME: Lucas Ojundo Raute</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	0	0	1	0
Number of crops producing a yield	1	0	1	0	1	1
Farmer has effective seed storage facilities	0	0	1	1	1	1
Farmer is storing his or her own seeds	0	0	1	1	1	1
Farmer is planting legume crops	0	0	1	1	1	1
Farmer has a compost they are actively using	0	0	1	0	1	1
Farmer has several different types of crops planted together	0	0	1	0	1	0
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	1	1	1
Farmer has a banana circle using greywater to grow crops	0	0	1	1	1	1
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	0	0	0	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	0	0	1	0
Farmer has shared their farm practices with minimum 3 neighbours	0	0	0	0	1	0
Farmer has confidence in his or her farming practices	0	0	1	1	1	0
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	1	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	1	1	1
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>9</b>	<b>16</b>	<b>10</b>

	BL		MT		E T	
	PP	Q	PP	Q	PP	Q
<b>NAME: Johanness Mbuya Nyakolo</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	1	0	1	1	1	1
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	1	0	1	0
Farmer is storing his or her own seeds	1	0	1	2	1	2
Farmer is planting legume crops	0	0	1	1	1	1
Farmer has a compost they are actively using	0	0	1	1	1	2
Farmer has several different types of crops planted together	0	0	1	0	1	1
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0

Farmer is re-using greywater to water crops	0	0	1	1	1	1
Farmer has a banana circle using greywater to grow crops	0	0	1	0	1	1
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	0	0	0	0
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	0	0	0	0
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	0	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	1	1	1	1	1	2
Farmer is finding their own solutions to their challenges on the farm	0	0	1	1	1	1
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>4</b>	<b>1</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>16</b>

	BL		MT		ET	
	PP	Q	PP	Q	PP	Q
<b>NAME: Mary Akinyi Aila</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	1	1	1	1	1
Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	0	0	0	0
Farmer is storing his or her own seeds	0	0	1	2	1	2
Farmer is planting legume crops	1	0	1	1	1	1
Farmer has a compost they are actively using	0	0	0	0	1	1
Farmer has several different types of crops planted together	0	0	1	0	1	1
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	0	1	0
Farmer has a banana circle using greywater to grow crops	0	0	1	1	1	1
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	0	0	0	1
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	1	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	1	1	1
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	0	0	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	1
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>11</b>	<b>15</b>	<b>14</b>

	BL		MT		ET	
	PP	Q	PP	Q	PP	Q
<b>NAME: Jane Aluoch Ouma</b>						
<b>Survey Questions</b>						
Farmer has a minimum of 6 crops planted	0	0	0	0	1	0



Number of crops producing a yield	1	0	1	1	1	1
Farmer has effective seed storage facilities	0	0	1	0	1	0
Farmer is storing his or her own seeds	1	1	1	0	1	0
Farmer is planting legume crops	1	0	1	1	1	2
Farmer has a compost they are actively using	0	0	1	0	1	1
Farmer has several different types of crops planted together	0	0	1	0	1	1
Farmer is intercropping with pest repellent plants	0	0	0	0	1	0
Farmer is using insect traps	0	0	0	0	0	0
Farmer is using at least 4 different water saving strategies (mulching, harvesting rainwater, swales, berms, half-moon berms)	0	0	0	0	0	0
Farmer is re-using greywater to water crops	0	0	1	0	1	0
Farmer has a banana circle using greywater to grow crops	0	0	1	0	1	0
Farmer has earthworks such as swales, berms	0	0	0	0	0	0
Farmer is using dead or living mulch	0	0	1	1	1	1
Farmer has multipurpose trees around the compound	0	0	1	0	1	1
Farmer uses energy saving items such as energy efficient stoves and thermal cookers (wonder bags)	0	0	1	0	1	1
Farmer has shared their farm practices with minimum 3 neighbours	0	0	1	0	1	0
Farmer has confidence in his or her farming practices	0	0	1	1	1	1
Farmer feels they have decision making ability over decisions relating to the farm and farm production	0	0	1	1	1	1
Farmer is finding their own solutions to their challenges on the farm	0	0	1	0	1	0
Farmer is showing creativity and innovation	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>3</b>	<b>1</b>	<b>15</b>	<b>5</b>	<b>17</b>	<b>10</b>