1. Introduction

ACAT is a non Governmental Organization formed to transform disadvantaged rural people through appropriate and sustainable development programs. The core mandate for ACAT is on food security activities covering sustainable Agriculture and enterprise Development. ACAT is working in the following communities: Dumako, Mbhoke, Sithobela, Siphofaneni, Mphaphati, Bhahwini, Nkwene, Gege, Dvokodwweni, KaLanga and Mambane. Activities carried out in these communities include Savings and credit co operatives (SACCOs) formation and training members of these groups on how they should manage their SACCOs. On food production, ACAT encourages members to deposit money and buy farming inputs to increase food production that include: Maize, legumes, sweet potatoes and other crops and to have back yard gardens, planting different vegetable using permaculture methods. Other activities that ACAT encourages include: proper food storage using different facilities, good sanitation, creating awareness on HIV/AIDs to name some.

In June, 2012 ACAT started to work with IITA/Miracle on assisting farmers to increase the production and use of legumes and other crops in families and to grow new other crops that were not grown in those communities. The main activities in this project are based on these objectives:

a) To mobilize communities about deploying and diversify nutrition dense crops varieties and indigenous vegetables.

b) To identify and deploy labour saving technologies in the targeted communities.

c) To facilitate establishment of community based seed production of nutrients dense crops varieties and traditional vegetables with adaptability to drought and heat stress.

d) To promote sustainable livestock production technologies with emphases on indigenous chicken and utilize feed resources from improved dual purpose crops.
On agribusiness part it was:

a) To establishment of viable market linkages,
b) To Provision of technical assistance and post-harvest support to farmers,
c) To Capacity building for extension officers on agribusiness,
d) Capacity building for farmers and
e) Monitoring and evaluation

2. ACAT and IITA.

ACAT in this project has planned to work with the community based Savings and credit groups and other community based groups to ensure that the set targets are achieved. The project will benefit a total of 25,500 people. These people will be from 4,250 households. 260 will be lead farmers each lead farmer will be working with 16 farmers. To accomplish this targets money amounting to E328,032.00 was required.

3. Project Implementation.

The miracle project is being implemented in the following communities: Dumako, Mbhoke, Sithobela, Siphofaneni, Mphaphati, Bhahwini, Nkwene, Gege, Dvokodvweni, KaLanga. Awareness meetings were held in these communities where a total of 1223 people attended the mobilization meetings, 1081 were females and 142 were males. After the explanation those people who were interested to participate in the project were registered. During the weekly group meetings mobilisation continued. Members were being sensitized about the activities that were to be implemented in this miracle project. As a result the beneficiaries in this project increased from those who were registered during the mobilisation. The total number of farmers benefited in IITA project in legumes and maize is 1925 there are farmers who did not get inputs from IITA; they planted their own seeds the total number of these farmers is 1040. That makes total producers to be 2965.

4. Activity / Progress Review.

**Output 1:** Partnership improved, Institutions strengthened and capacity of stakeholders improved to enhance access to rural support services by PLWHA.

1.1 Undertake awareness campaigns, community needs assessment and livelihood analysis to identify priority constraints and opportunities for resolving problems of malnutrition, health, and sustainable agriculture

We have been able to meet Ten communities where project activities were explained to SACCO members and support groups. A total of 1223 people attended the mobilization meetings, 1081 were females and 142 were males. After the explanation those people who were interested to participate in the project were registered. A total of 296 people were registered. There are 254 females and 42 males. More people are being motivated to plant legumes in their fields.
**Output 2.** Farm productivity-enhancing innovations that improve food security, nutrition and health deployed and disseminated.

2.1 Deploy diverse and local adapted nutrient-dense crop varieties (soybean, cowpea, yellow-fleshed cassava, maize, and orange sweet potatoes) and indigenous vegetables with enhanced nutritional quality through participatory approaches).

- ACAT facilitated purchasing and distribution of farm inputs for the farmers that are benefiting from this project. The inputs that were distributed are: 1125kg Cow peas, 724kg beans, 770 kg ground nuts, 600 kg ZM 523, 170 kg ZM 721 OPV maize, cassava, 144 x 50 kg 2:3:2 (22) and 72 x 50kg LAN (28), 100 x1 kg stalk borer bait, 100 x 1 litre herbicide and12 x 2kg Soya beans. Communities that received inputs are: Gege, Dumako, Mbhoke, Sithobela, Nkonjwa, Mamisa, Dvumbe, Manyeveni, Bhabwhini, Siphofaneni, Dvokodweni, and KaLanga.

- Demonstration and planting: Following the distribution of the farming inputs, farmers have planted the crops. Demonstrations have been conducted as follows: **Beans**, 3 demonstrations were conducted and 376 farmers have planted beans in their fields (29 males and 347 females). Harvest: presently we got yield estimated to 736 kg, it should be noted that other farmer have not yet harvested their beans there are still green. **Cow peas**, 15 demonstrations have been conducted and 685 farmers have planted cow peas (43 males and 642 females). Harvest: presently 2268 kg have been harvested. **Ground nuts**, 11 demonstrations and 534 farmers have planted ground nuts (31 males and 503 females). Harvest 2018 x 20 litres containers unshelled ground nuts were harvested. **Maize (OPVs)**, 5 demonstrations, 138 farmers have planted OPV maize in their fields (17 males and 121 females). Harvest: About 11.8 tons of maize were harvested. **Sweet potatoes**, 2 demonstrations were conducted and 140 plots were planted (10 males and 130 females). About 3172 kg of sweet potatoes at the moment has been harvested. **Cassava 5** plots were planted by female farmers. This crop has not been harvested. **Indigenous vegetables**, 7 female farmers planted indigenous vegetables, and 12 female farmers planted **Soya beans** in their plots.
2.2 Deploy crop, soil and water management practices to optimize performance of drought and heat stress tolerant crop varieties

- Farmers were trained on the advantages of using different varieties of seeds. The farmers were encouraged to use even the open pollinated varieties. Two varieties were distributed to the farmers. The varieties are ZM 721 and ZM523, these varieties are drought tolerant. These varieties were planted by the 138 farmers and 1 group with 32 members (5 males and 27 females) planted OPV maize in a field that is 1.6 ha.
- On the other hand farmers in the lowveld were encouraged to plant sweet potatoes. A total of 140 farmer planted three types of sweet potatoes (Khenya, Ligwalagwala and Mehlwemamba). Presently 3172 kg sweet potatoes were harvested. Others sold at E60.00 per 13 kg.

2.3 Identify and deploy labour saving technologies in target communities.

- The use of Herbicides in weed control is one labour saving technology that we are encouraging farmers to use. To assist farmers to effectively use the herbicides, ten field officers were trained by Farm Chemical, a well known supplier of farm inputs and advisor on farming technologies.
- This year farmers that are involved in maize production the project has encouraged them to start using herbicides by giving them 100 by one litres bladex plus. 187 farmers have been trained on how to apply the herbicides in their fields to control weed. 81 farmers have used herbicides to control weed in their fields. They have testified that really to use the herbicides has reduced expenses of hiring people to weed their fields, reduced the weeds in their fields. Farmers are being trained by field officers on how they can effectively use the herbicides to control weed in their fields.

2.4 Facilitate establishment of community based seed production of nutrient-dense crop varieties and traditional vegetables with adaptability to drought and heat stress.

The following groups were identified and were willing to multiply legume seeds. The groups are: Inhlakanipho, Asichubekeni and Hlumani at Gege, Ekuphileni at Sidlangatsini, Manyeveni at Zishineni, Ekukhanyeni under Sithobela RDA and Masibambisane at Phonjwne.

Inhlakanipho Were given 10 kg kranskop beans and were planted in a land that is 0.4 ha. There are still harvesting their beans.

Hlumani was given 10kg groundnuts and 10kg beans which were each planted in 0.25 ha land. Ground nuts are still being harvested. Beans were totally eaten by the buck.

Asichubekeni cow peas 0.35 ha and ground nuts 0.2 ha. There were given10 kg cow peas and 10 kg ground nuts. On ground nuts they harvested and filled 8 x 20 litre containers. Cow peas were harvested and field 9 x 20litre containers. This group managed to sell 8 x 20 litre
containers at E80.00 per 20 litre container. In ground nuts they got E640.00. On cow peas the group managed to sell 5 x 20 litre container at E240.00 per 20 litre container. In cow peas they got E1200.00 and other cow peas were kept as seeds for next planting.

Manyeveni 0.19 ha plot have planted beans kranskop. Were given 7 kg kranskop beans seeds. Since Manyeveni group is in the dry middle veld they planted their beans in March, 2013. Presently are not yet harvested.

Ekukhanyeni group has planted beans in area that is 0.5 hectar, and they had been given 10 kg sugar beans and 10 kg jenny beans. All their beans were destroyed by uncontrolled animals since the fields were not fenced.

**2.5 Testing and deployment of sustainable livestock production (train farmers on improved raising of indigenous chickens)**

- Refresher training to staff on indigenous poultry production was conducted on the 21st to 22nd March, 2013 at Mbuluzi ACAT training centre. The training was attended by 12 field officers (2 females and 10 males. Who were from Shiselweni, Manzini and Lubombo districts, where ACAT is promoting Miracles legumes production.
- Following the training of officers on indigenous poultry production, ACAT officers have trained 47 farmers (41 females and 6 males) on indigenous poultry production. topics covered in this training are:
  a) selection of breeding stock.
  b) How to construct the proper structure for indigenous poultry.
  c) Feeding schedule indigenous poultry.
  d) Common diseases in indigenous poultry.
- Outcome:
  - 3 female farmers have started to improve their indigenous poultry.

**2.6. Capacity building for extension officers on indigenous vegetables production, Good Agronomic Practices and in CA.**

- Training on indigenous vegetables production was conducted at Mbuluzi ACAT training centre. The training was attended by 12 field Officers. The training was facilitated by the programme manager with assistance from DARSS.
- topics covered in this training are:
  a) What type of indigenous vegetables do you know (open discussion)
  b) Where do they grow? (open discussion)
  c) When are they available in the wilds? (open discussion)
  d) Planting amaranths and jute mellow.

**2.7. Capacity building for farmers (train farmers on indigenous vegetable production, agronomic practices, CA.**
• Trainings on good agronomic practices and in conservation Agriculture were being conducted in communities in different dates.
• On the other hand, following the training of officers in indigenous vegetables production, they have then trained 158 farmers (151 females and 7 males) on indigenous vegetables production. The trainings were carried out in different days in the different communities.

2.8. Conduct two farmers' field days.

2.8.1. Field days: GEGE
- Date: 9 April, 2013.
- Attendance: DARSS 2, MOA Head office 1, MOA region 4, ACAT officers 4, Inkhundla 2, IITA 2 farmer 58.
- Fields visited:
  o Inhlakanipho group plot, Beans production, the plot is 0.29 ha.
  o Asichubekeni group plot. Cowpeas production and ground nuts.
  o Asichubekeni member planted maize OPVs.
- General observations.
  o It was observed that farmers should improve in record keeping for their products.
  o It was observed that soils at Gege are too acidic.
- Advices:
  o Farmers were advised to add lime in their soils as it has been seen on some of the crops.
  o They should take Soil samples in time so that they can apply line in time.
  o Ground nuts must be planted early in the planting season.

2.8.2 Manyeveni
- Date: 14 May, 2013.
- Attendance: MoA 1, DARSS 2, ADRA 1, Caritas 1, ACAT 6, IITA 2 and Farmers. In total there were 53 participants, 26 males and 27 females.
- Fields visited:
  o Madonsela cow peas plot. Mrs. Madonsela has planted cow peas in a plot that is about 200m². She had already harvested and she had another plot which was about 100m² with growing cow peas.
Communal garden: Beans is planted variety Kranskop. They have few plants of Soya beans they did not germinate well.

Manyika family: they had sweet potatoes, two varieties of beans and indigenous chickens. After seeing the sweet potatoes field the root and tubes agronomist gave lesson and showed participants different was of planting sweet potatoes and discouraged farmers in using poor yielding planting methods.

Farmers were again reminded of the market opportunities that are available and as well how to access it.

Farmers appreciated the lesson and clearly stated that this was a lesson they needed because there were planting sweet potatoes in different ways whereby most of the ways there were using were the ones that does not give them better yield.

Self reliance

ACAT had a responsibility as well to coordinate the agribusiness part of the project and the outputs are narrated below:

**Output 1: Identify market opportunities for nutrient-dense food products and Link enterprises to markets of nutrient-dense food products**

In market screening that was done in formal and informal markets in the big towns and markets of Swaziland it was found that most of the legume products found in the shelves in Swaziland are actually imported to the country mostly from South Africa. With yellow maize, white maize, sorghum and sunflower the market was secured with Arrow Feeds and their buying officer was invited in the radio programme by ACAT at Voice of the Church (VOC) to enlighten the public on the opportunities of selling their produce to them. A market for beans, groundnuts and jugo beans was secured at Growmore from which they committed to ACAT that they will buy all groundnuts, beans and jugo beans from farmers in Swaziland provided the quality is acceptable (grain not damaged either by insects, draught or other). Khuba traders (local agric-input outlet) committed that they can buy cowpeas, jugo beans, OPV maize and groundnuts seeds preferable different varieties of each. The buyer has emphasised that they will only buy good quality and packaged products. This market opportunity was also exhibited through our radio programme.

In the informal market a market study was done as well and it was found that there is also high demand for cowpeas, groundnuts and dry beans among other crops. The demand however increases on the planting season. This is because there is usually scarcity of seed for this crops so farmers then opt to buy them in informal market where as well are achieved at affordable prices. A market for sweet potato was also secured at Inzunzo Yemandla etfu Cooperative (Ludeludze) who buy the two most common varieties in the country; Ligwalagwa and Kenya Variety.

**Output 2: Link enterprises to markets of nutrient-dense food products**
The main objective of this activity was to make sure that farmer’s produce reach market in time and efficiently. After the market opportunities were secured, the information of where the market is, what exactly they demand and the ways of selling to them was broadcasted through ACAT weekly radio programme. This information was also disseminated to farmers through the network of our extension and project partners (CARITAS, ADRA and Ministry of Agriculture) extension officers.

Since we are working with rural subsistence farmers where most usually use their product for family consumption and sell the surplus, mobilisations to have the farmers produce for business became the most important duty to perform. As a result of the diverse ways of mobilisation including media, it may not be possible to measure the total impact that was made. However impact was measured from farmers that are provided extension service by ACAT, ADRA and CARITAS and it is recorded in the table 2 below.

It is worth noting that all the farmers preferred to sell to local markets. They took the decision to sell locally than to the big formal markets after practical cost benefit analyses were done with them. Selling on local markets proved to be more profitable to the farmers more especially because they bargain form avoiding transportation cost and as well can sell at higher prices having bypassed the middleman. The farmers that we were dealing with only managed to plant in very small scales (0.2ha to 1ha) that’s why all the products could be distributed locally. The table below show number of farmers that have sold their grain per community, quantity they sold, total yield and market where they sold their product. It should be noted that most of grain has not be sold e.g. yellow maize and most beans.

Table 1

<table>
<thead>
<tr>
<th>Crop Name</th>
<th>Produce sold</th>
<th>Average selling price</th>
<th>Total Sales</th>
<th>Number of Farmers</th>
<th>Emalangeni per Farmer</th>
<th>Highest earner</th>
<th>Lowest earner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet Potatoes</td>
<td>9813kg</td>
<td>E3/kg</td>
<td>E29439.00</td>
<td>175</td>
<td>E168.20</td>
<td>E588</td>
<td>E30.00</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>2080 X 20litre unshelled</td>
<td>E80/20litre</td>
<td>E166400.00</td>
<td>685</td>
<td>E242.92</td>
<td>E800</td>
<td>E60.00</td>
</tr>
<tr>
<td>Cowpeas</td>
<td>2988kg</td>
<td>E12/kg</td>
<td>E35856.00</td>
<td>180</td>
<td>E200</td>
<td>E1200</td>
<td>E30.00</td>
</tr>
<tr>
<td>Beans</td>
<td>880kg</td>
<td>E20/kg</td>
<td>E17600</td>
<td>5</td>
<td>E2200.00</td>
<td>E4800</td>
<td>E1000.00</td>
</tr>
</tbody>
</table>

The figures on table 1 are actually minimum figures (that were recorded form ACAT, CARITAS and ADRA farmers. The impact made to other farmers through radio and Ministry of Agriculture extension officers could not be attained.

**Implement market oriented approaches to production of nutrient-dense crop varieties**
Farmers were guided on producing the nutrient dense crops based on the demand focused and as well the agro-ecological zone the farmer falls in. In each of the regions farmers were encouraged to plant more of the crop at which they have a comparative advantage on for commercial purposes.

Extensions officers from the three implementing partners (ACAT, ADRA, and CARITAS) who have been capacitated with agribusiness practices and agronomic practices have been key in guiding the farmers through the process of crop and variety selection. Working closely with the government extension staff and the research department provided a synergic benefit in implementing the project especially on good agronomic practices.

**Processing and labor saving equipment**

The project anticipated and still looking forward to helping farmers to produce in very large scale where it will be more efficient to use shelling machine than manual labour. In this farming season a few farmers have produced in a significantly large scale to use the machines and these farmers were helped with shelling machines to make their work efficient. There are currently 2 cowpea threshers, 2 bean threshers and 2 maize Shellers (all driven by petrol engine) which were acquired meant to help farmers shell their crops easier. The machines are used by farmers under the partner organisations and managed by ACAT. Farmers are only required to provide a minutest fee for servicing the machine and as well for replacement. There was a challenge in acquisition of groundnut Sheller because local fabricators could not design it.

**Output 3: Develop/strengthen the capabilities of entrepreneurs on how to plan and productively manage their businesses, as well as local groups/organizations that could potentially guide and coach the enterprises on a long-term basis.**

A long term strategy for making sure that capacitating on entrepreneurship continues smoothly with the farmers, extension officers from ACAT, CARITAS and ADRA were trained in different fundamentals of entrepreneurship. The extension officers are placed as business coaches to the farmers in all the site where the miracle project is being implemented and they are working closely with the extension officers form the Ministry of Agriculture.

There were 28 extension staff that were trained on:

- supply/value chain management
- Understanding Costs and Negotiating Prices
- Enterprise Profitability (cost benefit analyses)
- Gross Margins and Farm Management

After extension office’s capacitation they furthered the training to farmers as shown in the table 2 below:

Table 2;
<table>
<thead>
<tr>
<th>Name of Community</th>
<th>Number of Males</th>
<th>Number of Females</th>
<th>Total Number of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ntfonjeni</td>
<td>12</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td>Siphofaneni</td>
<td>0</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Nkhaba</td>
<td>2</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Mboke</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Langa</td>
<td>4</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>Ludzeludze</td>
<td>2</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Dumako</td>
<td>4</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>Mahamba/Zombodze</td>
<td>2</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Nkwene</td>
<td>7</td>
<td>66</td>
<td>73</td>
</tr>
<tr>
<td>Mafutseni</td>
<td>1</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>37</strong></td>
<td><strong>315</strong></td>
<td><strong>352</strong></td>
</tr>
</tbody>
</table>

**Output 4: Conduct participatory value chain analyses.**

Participatory value chain analyses where done with farmers in 6 different communities (Nkhaba, Mboke, Mafutseni, Langa, Ludzeludze and Dumako) which makes a total of 181 farmers; 165 females and 16 males. In all the sessions the trainers would help the farmers to screen their business profitability which was very possible with farmers who manage the business as a group. For farmers who manage businesses individually it was not possible to take a closer look at each of their different projects but were lectured by using common business examples on how to analyse on their own. There famers showed more interest in the trainings especially the marketing part and profit determination. After the analyses most of the farmers decided to give local markets preference since they have small scale productions and would go to bigger markets once they have increased the scale of production which was idealised to be possible by pooling together their resources.

**Challenges and Lessons Learnt**

- 79 farmers, (4 males and 75 females) farmers planted cowpeas very early in the season and most did not get anything, we have learnt that other varieties like betchwhite and local grey did not form pods. Umtilane variety does form pods even when early planted. The best time for planting cow peas is December, January and February.
• Beans in the lowveld and in dry middle veld have not performed well, it is noted that the sun was too hot for them to grow well, thus beans in these areas must be planted later.
• Beans are liked by bucks therefore when planting them there must be well protected/fenced.
• Cowpeas in one farmer at Sithobela (she planted an area that is .03 ha) were attacked by aphids such that farmer had to spray them. Farmers had to buy insecticides and use them when need come.
• Legume seeds were scarce during the planting season, we managed to get ground nuts seeds late, thus the performance of the ground nuts was not so impressive.
• Finding formal market for cowpeas sold as food not seed.
• Designing and manufacturing of labour saving machines could not be done as fast as expected by the fabricators.
• Finding a suppliers or manufactures of groundnuts threshing machine was not possible.
• Estimating the quantity that will be sold was almost impossible because most farmers sell surpluses.
• Big company buyers are not convinced that farmers can produce significant yield for them to buy.
• Buyers want to buy products in bulk which is problematic for farmers who do not belong to a group.

6. Success Story and Testimonies

• Members of Asichubekeni group in their cow peas plot managed to get 180 kg cow peas in their field, they sold 100kg and 80 kg was kept as seeds for next production. Miracle project assisted us to realize that in our community we can plant cow peas.

• Mrs. Mary Dlamini a member of Imvuselelo group said “I am very grateful to ACAT and IITA for teaching me how to plant beans, from the produce I will eat some because I like beans and keep my own seeds to plant more beans next year”.

• Mrs. Lindiwe Ramalwa, a member of Matsetsa group at Kalanga RDA said “Before I joined the group, I did not think I can use the peace of land that is available within my fenced area. But in our group we were encouraged to use every piece of land available. My field officer Mr. Habakkuk Simelane from ACAT encouraged me to use the peace of land within my premises. We cultivated the land that is about 200 m², within my fenced premises and planted cow peas. I never thought the land within my premises can be used to produce legumes. Now I am picking cow peas within my premises. Miracle project has been an eye opener to me. More land that is within my fenced premise will be used to produce some crops as I have seen that it is possible”.
End of report