



## Final Report

### Food Security in Makamba province, Burundi

<b>Organisation:</b> Tearfund  <b>Headquarters Mailing Address:</b> Tearfund 100 Church Road Teddington Middlesex TW11 8QE United Kingdom	<b>Date:</b> 28 February 2006  <b>HQ Contact:</b> Alan Robinson <b>Telephone:</b> + 44 (0) 208 943 7769 <b>Fax:</b> + 44 (0) 208 943 3594 <b>Email:</b> <a href="mailto:alan.robinson@tearfund.org">alan.robinson@tearfund.org</a>  <b>Field Contact:</b> David Kigozi <b>Programme Director</b> <b>Telephone:</b> +257 219 520 / 526 <b>Mobile:</b> +257 928 689 <b>Fax:</b> +257 242 303 <b>Email:</b> <a href="mailto:burundi-cdm@tearfund.org">burundi-cdm@tearfund.org</a>
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<b>Programme Title:</b>	Food Security in Makamba province, Burundi
<b>OFDA Grant Number:</b>	DFD-G-00-03-00122-01
<b>Country/Region:</b>	Burundi, Great Lakes, Central Africa
<b>Type of Disaster/Hazard:</b>	Civil Strife
<b>Time Period Covered by the Report:</b>	1 <sup>st</sup> October 2003 – 30 <sup>th</sup> November 2005

## **I Executive Summary**

The overall goal of this project was to increase food security and contribute to the reduction of the incidence of malnutrition amongst vulnerable populations in Makamba Province.

During the 22 months of the contract period, over 15,000 vulnerable people of Makamba were helped to achieve improved levels of independence and food security.

The project assisted more than 1,300 families from 127 agricultural associations which are recognised by the authorities, have a voice in the community and are a source of livelihood and mutual support for the members.

Amongst other things, beneficiaries learned new agricultural techniques, have increased their agricultural production, been introduced to and grown new, higher yielding varieties of crops, learned the fundamentals of nutrition and balanced diets, have begun goat breeding and distribution, practice composting, have grown thousands of agro-forestry trees and practice erosion control on their land.

The first phase of the project, from October 2003 to September 2004, worked in three of the six communes of Makamba with 6,600 beneficiaries (3,943 direct beneficiaries). The second phase, from October 2004 to November 2005, expanded to cover all six communes. 4,675 new beneficiaries benefited from the programme.

48 agricultural associations were formed and developed during the first phase and a further 79 were added during the second phase. A total of 8,618 direct beneficiaries were assisted during the 2 phases.

In addition to assisting the direct beneficiaries, Tearfund worked in cooperation with the local community, the local and national authorities and other humanitarian agencies. A major aim in this area was to develop the capacity of the local DPAE<sup>1</sup>. Tearfund was also able to provide help to 2,675 indirect beneficiaries during the 2 phases through the involvement of the DPAE staff in training events, exchange visits and monitoring work as they learned our methods. In 2004 the DPAE adopted Tearfund's selection criteria and methods for identifying beneficiaries.

The project has successfully helped to:

- Increase technical agricultural knowledge and practice. The associations from the first phase were well established through training and support in the 2<sup>nd</sup> phase.
- Increase food production levels: seed production was increased and all the old associations became multipliers in the 2<sup>nd</sup> phase. All families were established in their farms and produced their own seeds.
- Increase the knowledge and capacity of the local DPAE
- Increase solidarity, support and access to credit and market potential
- Increase access to and usage of quality seeds and tools
- Embed the practice of methods of intensive, sustainable agriculture
- Reinstate livestock as a productive asset through direct distribution of livestock or rotative credit system. The 2<sup>nd</sup> phase project help beneficiaries to plant more forage and Tearfund to reinforce their capacity through training.
- Reduce risk and increase income through fruit tree planting
- Increase the level of knowledge of nutrition and balanced diets
- Widen the practice of environmental protection and erosion control

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<sup>1</sup> Provincial Department of Agriculture and Livestock  
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This report is divided into two parts, part one has been largely extracted from the annual results report for year one of the project. Part two of the report shows how the second year built on the success of first and information in this section has been largely drawn from the second annual results report.

## **II Beneficiary Numbers**

	<b>Objective</b>
Number of beneficiaries targeted during the reporting period	8316
Number of beneficiaries reached during the reporting period	<b>8618</b>
Cumulative number of beneficiaries targeted to date	8618
Cumulative number of beneficiaries reached to date	<b>8618</b>
<b>Total numbers of beneficiaries targeted and reached</b>	
	<b>8618</b>

During the first phase of the programme, October 03 to September 04, 607 households were targeted with the expectation of an average of 6 individuals per household (4,200). The composition per household was lower than this, resulting in an actual figure of 3,943 beneficiaries from 607 households (this figure increased later to 4,098 when 155 defaulters returned to the associations set up in year one of the programme). In error the annual results report for the first phase reported that 6,600 beneficiaries were reached during the phase. This included indirect beneficiaries who received support during the 1<sup>st</sup> phase through FAO distributions, so the actual number of direct beneficiaries for OFDA should remain at 4098 for this period.

During the second phase (October 04 to November 05), 4,520 new beneficiaries were targeted by the project to form 79 new associations. For the whole phase, 8,618 beneficiaries were targeted and reached. This figure included the 4098 beneficiaries who were transferred from the first phase of the programme giving the total number of beneficiaries reached during the programme of 8618.

Activities in objective 3 of the first phase had no direct beneficiaries, although improvements made have implications for all the beneficiaries in the project.

## **III Objective 1 – Report Against Indicators – First Phase**

To increase the technical agricultural and nutritional knowledge and increase awareness of better farming practices for 605 vulnerable subsistence farmers in Makamba province

<b>Objective 1</b>	<b>Indicators</b>	<b>Progress</b>
To increase the technical agricultural and nutritional knowledge and increase awareness of better farming practices for 605 vulnerable subsistence farmers in Makamba	An increase in the number of households with access to foodstuffs	98% of beneficiaries (592 households) have access to foodstuffs (TF Makamba annual report, 2004).
	An increase in the number of meals taken per day per household	A Needs Assessment in 2002 found that families consumed an average of 1 meal a day. Baseline data gathered in Oct 2004 showed that 70% of beneficiaries ate twice a day.
	A fall in the proportion	100% beneficiaries have harvested from two seeds distributions. The yield varied from one

province	of families that buy food from outside the village	zone to another, but the average period necessary to buy food from the market was reduced by 1 month.
<b>Activity One</b> Capacity building of six technical staff	Attendance at training programmes  Improved technical knowledge by 20%  Minimum score of 80% on tests	6 agronomists were recruited and all attended training on monitoring & evaluation, reporting, and the community approach in food security intervention  Increase of 22%  Pre-training test results = 55%. Post-training test results = 77%
<b>Activity Two</b> Capacity building of 15 local agricultural extension workers	Selection of 15 local farmers for the positions  All attend 3 day training  Increase by 40% of beneficiary farmers with increased knowledge of sustainable agriculture: composting, using natural fertilizer, inter-cropping, agro-forestry, combating soil erosion	15 DPAE Field assistants were selected to work as extension workers.  The Extension workers attended 3 days of training on agricultural and management techniques in November 2003.  Pre-training test results 44.6% Post-training test results 61.6% Increase = 17%
<b>Activity Three</b> Creation of 37 new agricultural associations and integration of 11 existing agricultural associations	List of beneficiary farmers joining functioning associations  Attendance at farmer meetings	48 associations were involved in the project 18 in Vugizo – 4 existing 11 in Makamba – 3 existing 19 in Mabanda – 4 existing  On average at least 60% of the members present at weekly meetings at any one time
<b>Activity Four</b> Selection of committee members	180 committee members selected  Number of community leaders involved	Each association selected 3 committee members giving a total of 144 people  100% beneficiaries participated in selecting committee members.  Training carried out in December for all committee members.  The Local administration gave support to organise and select committees; DPAE staff were involved to supervise committee selection meetings.

<b>Activity Five</b> Training of beneficiaries in Agricultural techniques	100% of farmer beneficiaries with increased knowledge of sustainable agricultural practices (as listed in activity 2)  100% of beneficiaries attend training	35% of farmers have increased knowledge in sustainable agriculture. The results of pre-post test gave an average of 17% increase in knowledge.  84% of beneficiaries attended the training in agricultural techniques demonstration in field and in field. 16% didn't because of diseases or lack of interest.
<b>Activity Six</b> Training in nutrition	100% of beneficiaries with increased knowledge of the importance of a balanced diet  Number of food security project beneficiaries admitted to the nutrition project as malnourished	A survey in Jan 04 found that 64% of beneficiaries did not know the components of a balanced diet, 36% did. The survey in October 04 confirmed an increase of 14% bringing the total to 50%.  No children from this food security project have been referred to the Cordaid Supplementary Feeding Centre (SFC).

### IIIa Objective 1 - Narrative - First phase

Six agronomists were recruited to work with the vulnerable farmers and provide technical advice and monitoring of activities. Initially the agronomists were divided between the 3 communes of work, each supporting a number of farming associations. However in January the team was reorganised to better reflect the aims and objectives of the project. Two agronomists focused on the first objective of training and 4 focused on the second objective of production. All 6 were given training at the beginning of the project on the agricultural techniques to be taught to the beneficiaries, as well as the monitoring and reporting aspect of their work. They were also trained in community participation. After the training they had an average score of 77%, which represented an increase in knowledge of 22%.

In addition to the Agronomists employed full time by Tearfund, an additional 15 Extension workers were employed on a part-time basis. The aim was to ensure that the associations received regular support as the Tearfund Agronomists were only able to visit about once a week. To aid collaboration with the Provincial Department of Agriculture (DPAE) it was decided to employ DPAE Field Assistants for these positions. They were already working with the DPAE in the areas where our associations are based. Bicycles were donated by the project to facilitate their visits to the associations. During November the Extension workers were trained on agricultural and management techniques. The main content of the training was:

1. Creation and management of an association
2. Sustainable agricultural techniques and cultivation of local crops: different themes were focused on for instance: using organic manure and composting, fertilization, livelihood projects and participatory methods,
3. Goat breeding techniques

The pre-training and post-training tests showed an increase in knowledge of 17%. This is lower than the 40% aimed for, but their knowledge will continue to increase as the techniques are practiced and applied in the field and they were invited to participate in field exchange visits and meetings.

Seconding staff from the DPAE was slightly different to the original plan of recruiting local leader farmers as Extension Workers. The mid-term evaluation found that this had both negative and positive effects:

- Negatively the Extension workers are not all truly local to the communities, there are no women, there is no onus on them to be demonstrating the improved practices and they will not necessarily stay long term in the area.
- Positively DPAE staff are already trained agronomists so have not required significant technical training, they have strengthened the link between the Project and the DPAE and when the project phases out the DPAE will be able to continue to give any support it can to the Project formed associations.

During the second phase of the project more emphasis was put on recruiting local farmers who lived more locally to the associations and were therefore able to give more regular and more long-term support.

The project beneficiaries were grouped into farming associations according to geographical location. In this way it was hoped to encourage the social aspect of support amongst the beneficiaries. The future aim was for these associations to be able to function independently working as cooperatives with bank accounts. Tearfund continued to support 11 associations that existed from a previous project and also created 37 new associations.

The Agronomists visited each association about once a week. They organised their schedule according to the days when the associations normally met together to work on the communal land. Attendance by the beneficiaries varied a lot, but checks in the association's notebooks showed the number of absent in the weekly activities was normally less than 40%. The main reasons for non-attendance were illness or the many domestic activities which returnees and repatriated people are involved in such as rebuilding houses.

To aid organisation each association chose 3 committee members – President, Vice-president, Treasurer. These members were trained during December in stock and cash management and conflict resolution. The aim was also that these committee members would be equipped to become leaders for development within their communities. This has been achieved to some extent as a number of committee members have been chosen by the DPAE to be involved in district farming committees.

Each association had a communal plot of land, which was used for training in sustainable agricultural techniques. The aim was then that they are able to apply the techniques on their individual fields. All the harvest from the demonstration plots is either divided between the members or sold and then the money used within the association or put in their joint bank account. Sowing in lines, intercropping, and weeding were all demonstrated by the Tearfund Agronomists. The Agronomists also made visits to individual fields to encourage the beneficiaries to apply the techniques there as well. Often beneficiaries were hesitant to change their techniques especially if the new techniques seemed more laborious and time-consuming (like sowing in lines). However once the harvest results were seen they were more willing to make the changes.

To this end exchange visits were carried out to demonstrate the application of sustainable agricultural farming methods. The visits were made to associations chosen as examples of good practice. Due to logistic constraints, only 3 representatives per association (the leaders) were invited to take a part in these visits. The subjects focused on during the visits were:

1. Good practice in erosion control:
  - cultivation in contour line: distance between 2 contour lines, using grass in soil protection,
  - agro forestry methods: different kinds of trees in association with crops and forage grass
2. Organic fertilization: composting system
3. Livestock: advantages and disadvantages of the zero grazing method.

All beneficiaries were encouraged to dig compost pits and were trained on good practice in using organic manure (from their own compost). The mid-term evaluation found that there was good understanding of the need for composting which is encouraging considering no one had any previous knowledge of this technique. Although all associations have created pits on their communal land there was less implementation individually. Monitoring on composting systems was conducted with 86 beneficiaries in Vugizo and Kayogoro. However this showed that 60% hadn't created a compost pit because the land they use is loaned from neighbours or they have just left the Internal Displacement camps and so haven't had time to dig a pit back at their home. To overcome this for season A2005 at the beginning of the second phase, we organised the transport of organic manure from the Makamba coffee factory, and as a result 28% had dug compost pits in preparation for the next phase.

In addition to sustainable agriculture beneficiaries were taught how to dry, sort and select good quality seeds, and how to improve storage of seed using natural products as pesticides. Training on vet care for goats (diagnosis of diseases, first aid for health care of goats, good practice in goat breeding, goat nutrition and goat sheds) was carried out by the Provincial Vet to ensure that the goats distributed were well cared for. The last training event of the phase was on the topic of project planning to enable associations to plan, organise and budget for their own small-scale agricultural projects.

Training was mainly carried out in the field so to be able to demonstrate the techniques at the same time. The only exception was the training of the committee members, which was carried out formally in Makamba. The average attendance was 69% of beneficiaries. This is less than the target indicator, but we now recognise it is impossible to have 100% of beneficiaries. There will always be those who are ill or have other urgent tasks or responsibilities to carry out.

It was realised that the Agronomists did not have the time or the necessary knowledge to carry out Nutrition training in addition to the agricultural training. Therefore in May a Public Health Educator was employed to carry out this aspect of training. The components of a balanced diet were explained and cooking demonstrations were carried out to show how a balanced meal could be made from the crops grown locally. An additional aim of cooking demonstrations was to explain how to cook certain nutritious food such as vegetables, which were not traditionally consumed. In total, 489 households (81% of the initial targeted households) attended a cooking demonstration sessions in field.

Sessions were also held to demonstrate how to prepare a nutritious porridge, which could be used to prevent or treat malnutrition. Porridge is traditionally eaten, but it was reported that 38% of the participants used to prepare porridge with only one food group, carbohydrate (sorghum, maize, or wheat). Only 6% of participants added protein (groundnuts or Soya bean). The women, especially those with young children, were pleased to learn how and why to include oil as a fat in the porridge.

A short nutritional KAP survey was conducted in July 04 with 102 beneficiaries from different associations. Of those questioned: 36% had previously had a child involved in the nutrition programme. The main results of the survey were:

- 46.5% have a balanced diet. However their diet is simply a matter of habit and depends on what food is available. The majority of them were not aware of what a balanced meal was before the training.
- 34.5% are aware of the composition of a balanced diet. However some cannot afford to buy a variety of foods
- 19% were not able to answer the nutrition questions correctly and do not have a balanced diet.

### **IIIb. Objective 1 - Assessment and Surveillance Data Used to Measure Results – First Phase**

An initial Baseline survey was carried out in January 2004 to establish agricultural and nutritional knowledge, attitude and practices and was compared with the survey carried out in October 2004.

Information on activities was taken from the monthly reports written by the Extension workers, Agronomists and the Food Security Coordinator. Tests were carried out pre and post training for the Extension workers, Agronomists and beneficiaries.

### **IIIc Objective 1 - Demographic Profile of Targeted and Reached Beneficiaries – First Phase**

Total number of beneficiaries targeted and reached includes 638 households / 3943 individuals who received seeds, tools and agricultural education.

The number of households is higher than targeted because the size of the associations varied between 10 and 15. This depends on the need and geography of the areas. Also the 11 associations that were involved in the previous phase have more members. Since they were already established and had strong relations we did not want to break them up into smaller groups.

However the number of individuals was lower than expected. This was because the average number of individuals per household was 6 rather than 7 as predicted at the proposal stage.

In the project proposal the target groups were:

- Non displaced persons **(25%)**
- Internally Displaced People (IDP) living in camps **(52%)**
- Those who have recently returned from these camps to their home 'collines'<sup>2</sup> **(18%)**
- Returnees from Tanzania **(5%)**

The status of the beneficiaries were:

<b>Category</b>	<b>Target</b>	<b>Start date: 01/10/03</b>	<b>End date: 30/09/04</b>
Non displaced people	25%	32%	32%
Internally Displaced People (IDP) living in camps	52%	48%	9%
Those who have recently returned from these camps to their home 'collines'	18%	14%	53%
Returnees from Tanzania	5%	6%	6%

Most of those who left the Displacement camps to return to their original homes continued to have support via the programme. However 46 households/276 individuals (7.2% of original beneficiaries) did leave the programme due to various reasons:

- They moved back to their original home and it is far from the demonstration plot where they are supposed to meet regularly with the other members of the associations.
- They don't have enough time to work in associations when they are in the process of moving back to their original home, ie rebuilding their house
- A couple of young people registered with a rebel group to gain from the demobilisation process
- Long term sick or too old

### **III d Objective 1 - Quantitative and Qualitative Data – First Phase**

Table 1: Results of training

<b>Training</b>	<b>Pre-training</b>	<b>Post-</b>	<b>Percentage points</b>	<b>Attendance</b>
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<sup>2</sup> Meaning 'hill', the population use this geographical reference to denote their location.  
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		<b>training</b>	<b>increase</b>	
Stock & cash management	1.5%	35%	33.5%	81%
Post harvest operations	36.6%	57.2%	20.6%	81%
Seed sorting and storage	40.5%	55.3%	14.8%	62%
Erosion control	See survey*	See survey	See survey report	72%
Vet care	50%	62.5%	12.5%	50%
Nutrition	19.2%	29.2%	10%	71%
Local porridge	57.3%	85.3%	28.1%	63%
Project planning	15.3%	25.5%	10.2%	73%
<b>Average</b>	<b>31.5%</b>	<b>50%</b>	<b>18.5%</b>	<b>69.1%</b>

\* This was done by the Agronomists in the field by demonstrations or in exchange visit training without pre and post test.

The table above shows that there is a great difference between the initial knowledge of certain subjects taught. For example Stock and cash management, and project planning were fairly new topics with farmers having little previous knowledge. On the other hand topics such as local porridge and vet care were partially known already.

### **III Objective 1 - Success Achieved – First Phase**

At the end of phase one all 48 associations were still working together. Relationships grew stronger between them and there were examples of social cohesion. One association, in Gisenyi, helped to construct a house for one of their members. The girl (aged 20) had lost her parents and was looking after her 9 siblings. The family had recently returned from Tanzania where they were refugees.

The mid-term evaluation found that although not all beneficiaries had been “involved in project design, the association members often remarked that they wanted to join associations because Tearfund was planning to do what they were needing to do. All people interviewed were emphatic that they were allowed and enabled to have a say in the way the project was implemented and that they were often suggesting changes in the way the project was working. There seemed to be a remarkably strong sense of ownership of all the project was doing. There was also a recognition that they needed to work hard to be members of the association, that any achievements of the project were not solely dependent on Tearfund but on their own input.

A large number of associations opened bank accounts. Each member makes a monthly contribution into the account. Some use the money to buy seeds or school books for their children. Others allow members to borrow the money to pay for medical bills or school fees.

All associations in the first phase had registers to record their communal assets such as seed, tools and money. This ensured that they are accountable to each other and to project staff. The Tearfund Agronomes verified information recorded.

The mid-term evaluation established that “Association members identified that they have gained more respect in the community, they can ask for help from others in the Association and get it, they can even borrow money from Association funds if need be. Returnees said that being part of an association helps them to get in touch with the community and begin to belong (“I have been taught to love again”). Association membership is a voice that is heard, so Associations have been able to ask DPAE or Colline leaders for marsh land for dry season planting; they also feel that as group Tearfund is more likely to listen to their concerns than if they expressed them as individuals.”

The participants on the exchange visits realised how they could practice what they had been taught and were also able to ask questions to the farmers. As a result, the participants said they would like to plant some trees (calliandra, leucaena, grevillea etc) to have fire food and forage and to plant grasses for erosion control. They also decided to improve the goat's shelters to practice zero grazing.

One association had not bothered to harvest the carrots, which they had grown on their communal plot because they did not know how to eat them. Before the nutritional training, many families did not know how to cook carrots. Some women said that the carrots do not smell good, but after the training they realised that the smell was because of the way they cooked them.

One Grandmother, called Marguerite, testified that she had a mentally handicapped daughter who had recently given birth to a son. The Grandmother had borrowed money to pay for the hospital fees and was struggling to find enough money to repay the debt and buy food for the family. The grandson started to show signs of malnutrition with discoloured hair and an extended stomach, but the grandmother was not able to take him to the health centre. After the Tearfund Educator carried out a cooking demonstration the grandmother decided to apply what she had learnt because the mother of the baby didn't have enough milk. The baby's health improved dramatically. She said she will never forget the different food groups available locally.

Another mother, called Seraphine, had a 9-month-old child who she had not yet weaned. Since the education session she made sure that she prepared balanced meals. She also started to give her child porridge, potatoes and tomatoes. Her child was previously very thin, but gained 1kg and is very healthy. She was also thin because she ate mainly only one food group. She now realises that this is also why she did not have much breast milk. For her previous children she had always had lots of breast milk as before the war she had enough to eat. She really appreciated the teaching she received on a balanced diet. She had previously never eaten cassava leaves because she didn't know how to prepare them. Also she didn't realise that a child of 9 months could eat solid food.

### **III f Objective 1 - Constraints – First Phase**

The main rebel group active in Makamba Province was the CNDD-FDD. However in November 2003 this group joined the peace process and signed a power-sharing agreement with the government. After that the security situation in the Province improved. Many families who were displaced during the fighting left the Internal Displacement Camps and returned to their original homes. This meant that members of the associations based around camps were becoming more dispersed. The results of this were that some chose to leave the groups as it was too far for them to travel to meet and work with the group. Others were not able to give as much time to the communal work and training as they were also occupied with rebuilding their houses and re-establishing their lives in their original communities. This also had an effect on the workload of the Agronomists who had to travel further when they visit the beneficiaries individually.

Changing attitudes and practices is always a slow process. The Agronomists experienced this in trying to teach new techniques to the beneficiaries. It was realised that demonstrations are important and showing people the results is an effective teaching method. This is why the exchange visits were carried out to show examples of good practice and to demonstrate the positive results of new techniques. The mid-term evaluation concluded that:

- A. For the new techniques to become normal practice, farmers must be rapidly convinced of the value of the extra effort going into them: this will be hard in the case of composting as it is not being well done and requires ongoing labour to gain the benefit.
- B. In the same way, sowing in lines takes a lot of time, and although it is being well practised on many association plots, it is possible that there is little additional benefit in yield: the Project needs quantitative proof of this.

- C. The emphasis on mechanical methods of erosion control rather than the use of grass strips has reduced the extent of the take up of this practice due to the labour involved and is not the most appropriate method of erosion control in the context.
- D. In the case of zero grazing many farmers have already appreciated the benefits and so this will probably become standard practice for goat husbandry.

### **IIIg Objective 1 - Overall Performance – First Phase**

In general the results of training tests show that the vulnerable farmers involved have increased knowledge and awareness of better farming practices. Thus contributing to achieving objective 1. However, the real challenge was the application of these techniques.

Despite initial hesitations most beneficiaries have applied the techniques taught especially now that they have seen the results of a couple of harvests. Beneficiaries are generally willing to learn as they realise that the better techniques are necessary as they are constrained in growing enough to eat due to lack of land and inputs. They were also been eager to implement balanced meals with local food. However the technique of sowing in lines was not been so well received, as it was considered too slow and labour intensive. Stock and cash management was also a new concept that beneficiaries found difficult, mainly due to a lack of formal education.

However on going monitoring and support given by the Tearfund Food Security team during the second phase ensured a much greater understanding and more widespread practice of these techniques. (See Result 3 Section Via)

### **IIIh Objective 1 - Summary of Cost Effectiveness – First Phase**

Although this aspect of training and knowledge increase was an expensive part of the programme it could also be argued that it is one of the most valuable and therefore worth the cost. Training has the potential to have a long-term impact as farmers apply changed agricultural and nutritional practices. The results show that the agronomists, extension workers and beneficiaries have been effectively trained and the majority of farmers were implementing the new techniques. Therefore it can be concluded that this objective has had an impact and has been cost effective.

The financial report shows that more has been spent on training activities than originally budgeted for. This has been possible due to under spends in other area of the programme in the first year. It is important to ensure that training is well delivered and effective as this underpins the implementation of the other objectives of the programme. Beneficiary exchange visits for example were not originally budgeted for but were deemed to be necessary to aid in motivating and convincing beneficiaries of the positive effects of new techniques. Also the motorbikes for the Agronomists and the bicycles for the extension workers were both under budgeted but effective means of transport are essential in assuring regular support in the field to the associations. The underspend was used to recruit a Public Health Educator to focus solely on nutrition education with the farming associations.

## **IV Objective 2 – Report Against Indicators – First Phase**

To increase food production levels for 605 vulnerable subsistence cultivators in Makamba Province

<b>Objective 2</b>	<b>Indicators</b>	<b>Progress</b>
<b>To increase food production levels for 605 vulnerable subsistence cultivators in Makamba</b>	A reduction in malnutrition	The number of admissions in CNS were reduced in December 2004: 57% in reduction between November and December 04 (Nut, stat, 2004). There is normally a peak in November-December each year.

<b>Province</b>	<p>A reduction in the number of families requiring outside aid assistance</p> <p>A reduction in inorganic /expensive inputs</p> <p>An increase in sustainable, organic farming</p>	<p>The project contributed to reduce to from 100% to 30% the number of beneficiaries requiring food assistance in 2004 (baseline data, Oct 04).</p> <p>Due to short term intervention, this indicator is difficult to measure as this is a long term impact.</p> <p>Nevertheless, the number of farmers who use manure and practice sustainable farming techniques has increased from 0% to 48% (Survey report, October 04).</p>
<b>Activity One</b> Distribution of a selection of agricultural tools to individual beneficiaries	<p>Number of tools distributed to beneficiaries (1 hoe, 1 rake, 1 sickle per HH, 1 wheelbarrow per association)</p> <p>Farmer comments on usefulness of tools supplied</p> <p>Farmers involvement in future selection of tools</p>	<p>All beneficiaries received 2 hoes in season A and B</p> <p>Each association received: 1 wheelbarrow 5 watering cans 2 shovels 7 or 8 rakes (depending on size of association) 12 axes</p> <p>Tools distributed to the farmers were appreciated and used effectively.</p> <p>Associations requested pumps to spray their crops. Also 1 axe and another 2 hoes per family would be useful for people to rebuild their house. These views were taken into account, see Section VIa, Result 2.</p>
<b>Activity Two</b> Distribution of 6 goats to each association	<p>Number of goats distributed (5 female and 1 buck per association)</p> <p>48 shelters built</p> <p>Goat death rate does not exceed 15%</p> <p>576 kids are born</p>	<p>288 goats distributed: 240 females and 48 bucks</p> <p>48 shelters built</p> <p>22 goats died = 7.6% of those distributed</p> <p>119 born</p>
<b>Activity Three</b> Distribution of quality seeds for food crops	<p>Each beneficiary household receives 20kg beans, 10kg maize, 5kg soya, 5kg groundnuts</p>	<p>See table 2 Section IV.d. for details</p> <p>Each beneficiary received: 32.3kg beans 9kg maize 1kg soya 0kg groundnuts</p>
<b>Activity Four</b> Distribution of new varieties of seeds, especially vegetables	<p>Each beneficiary household receives 4 packets of each of tomatoes, cabbage, carrots, onions,</p>	<p>Each beneficiary received: Season A - 10g of each of onions, tomatoes, carrots, cabbage Season B - 10g cabbage seed Season C - 10g carrots, cabbages, onions,</p>

	<p>aubergines</p> <p>On farm trial sites successfully growing household vegetables</p>	<p>tomatoes, aubergine</p> <p>10g = 1 packet</p> <p>Yields were not good due to the problem of either excessive rain, or inadequate rainfall. Farmers reported disease attack on the tomatoes and the germination rate of the onions was less than 10%. Cabbage is very sensitive to pests and fungal infections so did not yield well.</p>
<p><b>Activity Five</b> Introduction of mushrooms</p>	<p>All beneficiaries receive 1 packet each of mushroom seeds</p> <p>30% of the harvest is sold</p>	<p>35kg seed used between 11 associations It was decided to pilot the activity with a few associations rather than with all beneficiaries. 1 pkt of seed = 10g, but 35kg divided equally between 151 beneficiaries = 0.23kg</p> <p>Only 14.94kg harvested in mid-September Farmers were eager to consume the mushrooms rather than sell them as the poor harvest provided no surplus.</p>
<p><b>Activity six</b> Seed multiplication unit</p>	<p>30 growers plant land with 1210kg of beans, 605kg of maize, 302.5kg of groundnuts, 302.5kg of soya</p> <p>19.5 tonnes of seed is harvested</p>	<p><b>Season A:</b> 82 private multipliers / 31 vulnerable associations multiplying seeds <b>Season B:</b> 65 private multipliers / 16 vulnerable associations</p> <p>Planted: 5302kg beans 314.5kg maize 265kg groundnuts 251kg soya</p> <p>Harvested: 5864kg beans 3313.5kg maize 165kg groundnut 529kg soya</p> <p><b>Total = 9.9 tonnes</b></p> <p>See table 3 &amp; 4 for details (Section IV. d.)</p>
<p><b>Activity Seven</b> Distribution of sacks for storage</p>	<p>1210 storage sacks distributed to beneficiaries</p>	<p>Distribution to each beneficiary of one sack and to each association an additional 10 to share. Distributed in season B Total of 925 sacks distributed</p>

#### **IVa Objective 2- Narrative – First Phase**

All beneficiaries received a variety of tools. Hoes, watering cans and wheelbarrows were donated by FAO. Sickles were not distributed as planned because they were not available from FAO. In addition shovels and axes were distributed to aid with land preparation and harvesting.

6 goats were distributed to each association, resulting in a total of 288 goats distributed. Health care was supervised by a vet and two extension workers in collaboration with the agronomists. The extension workers were engaged after it was found that the work was too much for just one vet. The total number of agricultural extension workers and vet workers therefore increased from 15 to 18. Management and care of the goats had varied success depending on the organisation of the association. However only 7.6% of goats died which was much lower than the indicator of 15%.

Shelters were built in each location for all the goats although initially this was a slow process because the beneficiaries found it hard to find roofing material. Leaves were mainly used in the end. A system of zero grazing was introduced for the goats and the beneficiaries were shown how to put the manure in their compost pits to create organic compost. However, 15 tonnes of organic compost had to be distributed to the associations for season A as the goats were still being distributed during this period.

119 goats were born and kids over 4 months old were redistributed to enable all beneficiaries to have their own goat. The number of kid goats was less than expected which slowed down the redistribution process (see Section IVf Constraints,)

Bean seed for season A and B was donated by FAO and distributed to all beneficiaries. In addition, due to the poor harvest in season B, extra beans, maize and vegetable seed were donated by FAO for season C for those associations that had marshlands. The high quality seed multiplied during season A and B was redistributed for seasons A2005. Each association received a quantity to plant on their demonstration plot and each beneficiary received an amount to plant in their individual field. The amounts distributed were mainly dependent on the quantity received from FAO and therefore less soya seed was distributed than planned. Due to OFDA guidelines on seed purchasing it was not possible to buy seed to supplement the distributions.

Groundnut seeds were multiplied, but there were not enough in the end to distribute to the vulnerable associations. This is due to the fact that the harvest was very bad and some multipliers did not keep their contract of reimbursement.

To encourage beneficiaries to grow crops for a balanced diet, vegetable seeds were distributed to all associations to plant on their demonstration plots. It was not possible to choose which vegetables to distribute because a random selection was donated by FAO. Unfortunately due to irregular rain, disease and old seed the yields were not that high. However the principles of sowing in nurseries and transplanting were well understood and implemented.

During July 04, Tearfund Agronomists were trained in techniques for planting and cultivating mushrooms. These Agronomists were then able to train 11 associations (151 participants) in mushroom cultivation techniques. The 15 extension workers also attended the sessions with the beneficiaries on mushroom cultivation. 11 associations, which were motivated and well established, were chosen to pilot the planting of mushrooms. Therefore not every beneficiary received a packet of mushrooms as stated in the proposal. Rather large bags of mushroom seeds were used jointly by the associations. 35kg was planted in total, which is an average of 0.2kg per person. The yield was low due to contamination of planted seed so there was not an excess available to sell.

Mushrooms were cultivated in Mabanda, Mpinga, Mutwazi and Kayogoro. The farmers were very interested and many of their neighbours expressed a desire to do the same activities in Mabanda and Makamba.

For Season A 82 private multipliers and 31 vulnerable associations were chosen to multiply high quality seed. Inputs of fertiliser (DAP and urea) and some chemicals were also provided by Tearfund. Each grower signed a contract to agree to give Tearfund 25% of the harvest and that

Tearfund would buy the remaining 75% for a good price. This provided a stock to redistribute to the vulnerable families in the farming associations. The vulnerable associations were also shown how to multiply seed on their demonstration plots.

Many of the seed multipliers were based in Vugizo commune, which unfortunately suffered from the heaviest rain of the entire province in season A and virtually the whole of the bean crop there was wiped out. Many multipliers broke their contracts and sold the seed themselves so were not included in the second season, but other multipliers were added for season B to replace them. Ultimately it was decided not to work with seed multipliers in phase two as it had been proved that the vulnerable associations were capable of multiplying seed. For every crop the association members had a better proportional yield (input to harvest). This was mainly because the associations were more motivated because they also receive other inputs from Tearfund.

The amount of seed planted varied from the original proposal, as it was dependent on the quantity that FAO were able to supply. FAO buy the high quality seed in-country and therefore it is likely that even if Tearfund had tried to buy extra seed it would not have been available. Therefore the total amount of high quality seed harvested was less than proposed because less was planted. In addition the harvest of groundnuts was poor. However there was a sufficient amount of beans, maize and soya to be distributed to all the associations for season A2005.

Sacks were given to the beneficiaries for the storage of seed after the harvest for season B. One sack was given to each individual and 10 additional sacks were given to share amongst each association. 925 sacks were distributed in total, as some beneficiaries were absent at the time of distribution.

#### **IVb Objective 2 Assessment and Surveillance Data Used to Measure Results – First Phase**

Distribution lists compiled by the Agronomists and stock movement records were used to verify distribution of seeds, tools and sacks. The Tearfund Agronomists measured harvest yields. Information on activities was taken from the monthly reports written by the Extension workers, Agronomists, Provincial vet, and the Food Security Coordinator.

#### **IVc Objective 2 Demographic Profile of Targeted and Reached Beneficiaries – First Phase**

This activity was carried out by associations and not just individuals as initially imagined. These associations did not benefit from objective 1 and were not included in the beneficiary figures in the proposal. There were 89 households /534 individuals involved only in seed multiplication.

The individuals reached in objective 1 received the quality seed, which was multiplied. They were also shown how to multiply seed on their demonstration plots. Therefore, the number of beneficiaries reached in this objective includes the 89 households who were private multipliers and the 592 households in the vulnerable associations who carried out small-scale multiplication.

#### **IVd Objective 2- Quantitative and Qualitative Data – First Phase**

**Table 2: Seed distributed per beneficiary**

	<b>Beans (kg)</b>		<b>Maize(kg)</b>		<b>Soya(kg)</b>		<b>Groundnuts(kg)</b>	
	ordinary	High quality	ordinary	High quality	ordinary	High quality	ordinary	High quality
<b>Season A 04</b>	8.3	0	0	0	0	0	0	0
<b>Season B 04</b>	11	0	-	-	0	0	0	0
<b>Season C 04*</b>	0	3	0	4	-	-	-	-
<b>Season A 05**</b>	0	10	0	5	0	1	0	0
<b>Total per beneficiary</b>	<b>19.3</b>	<b>13</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>Grand Total</b>	<b>23,795</b>	<b>2,504</b>	<b>3,065</b>	<b>3,085</b>	<b>0</b>	<b>1,386</b>	<b>0</b>	<b>0</b>

\* Only 392 beneficiaries who had access to marshland received seed for season C. 10kg of potatoes were also distributed to each household for this season. Soya and groundnut were not grown during this season.

\*\* 592 families (from the existing associations) had high quality maize seed. The new associations received ordinary seed and had to wait for the high quality seed multiplied during season A 05. High quality soya was distributed to 471 households and beans to 216 households.

**Table 3: Seed distributed for multiplication**

	<b>Beans</b>	<b>Maize</b>	<b>Soya</b>	<b>Groundnuts</b>
<b>Season A</b>	831.5	314.5	251.5	265
<b>Season B</b>	4470.5	-	-	-
<b>Season C</b>	-	-	-	-
<b>Total</b>	<b>5302</b>	<b>314.5</b>	<b>251.5</b>	<b>265</b>

**Table 4: Harvested from seed multiplication (kg)**

	<b>Beans</b>	<b>Maize</b>	<b>Soya</b>	<b>Groundnuts</b>
<b>Season A</b>	1416	3313.5	529	165
<b>Season B</b>	4448*	-	-	-
<b>Season C**</b>	-	-	-	-
<b>Total</b>	<b>5864</b>	<b>3313.5</b>	<b>529</b>	<b>165</b>

\* No harvest registered on 1600 kg of seed in season B 04. Crop was destroyed by heavy rain.

\*\* Not enough marshland for multiplication in this season

**Table 5: Average yield per ha per crop – season A2004**

	<b>Beans(kg)</b>	<b>Maize(kg)</b>	<b>Soya(kg)</b>	<b>Groundnuts(kg)</b>
<b>Associations</b>	156.3	534.4	274.8	110.5
<b>Multipliers</b>	350	559.2	425	193
<b>Norms yield per ha</b>	<b>800-1000</b>	<b>1000</b>	<b>1000-1500</b>	<b>650</b>

The norms relate to yields in favourable climatic conditions using high quality seeds and fertilizers. However the farmers in the project were working under difficult conditions with a lack of manure and no use of fertilizers in all demonstration plots for season A2004. The erratic rains were the most influential factor for the low yields. However it must be noted that the figures given are average yields and therefore some fields did have good yields close to the ideal norms.

#### **IVe Objective 2- Success Achieved – First Phase**

The tools distributed were well received and effectively used by the farmers as they previously had not had enough money to buy certain tools and those that they did have had been stolen or destroyed during the conflict.

Despite a number of deaths of goats that could have been prevented, the percentage of deaths was low. Training was introduced to ensure that the beneficiaries were aware of basic vet care and the number of deaths decreased in subsequent months.

All beneficiaries received high-quality seed for increased production. Large enough quantities were multiplied locally during the year to enable redistribution for season A to all beneficiaries without needing supplementary donations from FAO. The fact that the vulnerable associations proved capable of multiplying high quality seed meant that they were able to receive an income from the seed that was sold back to Tearfund.

#### **IVf Objective 2- Constraints – First Phase**

There were problems of goats becoming ill and dying due to lack of care. This was mainly in associations where they shared all responsibilities rather than appointing a family to care for each goat. As mentioned above, vet care training was carried out for all associations to ensure that beneficiaries were aware of basic goat care.

Less than half of the female goats became pregnant and produced young, which slowed down both the hand over to other members of the association and the amount of manure that could be produced. This was partly due to the associations not knowing when the goats were on heat and when to put them with a buck. Often the bucks were kept separately from the goats and therefore had less opportunity for mating naturally.

The goats were distributed to the associations as a way of producing organic manure. It became evident that, even on zero grazing, one goat was incapable of producing sufficient organic manure for the needs of one agricultural season.

Most of the seed for multiplying and distribution were supplied by FAO. This meant that savings on the budget were possible because the seed was donated, but it also meant that Tearfund was dependant on FAO in this aspect and this was not without risk. Firstly, the timetable of FAO did not always match the schedule that Tearfund had organised for distributions, based on the agricultural calendar for sowing. In season A the high quality seed was received late from FAO and therefore Tearfund was not able to distribute all the seed as many of the multipliers had already sown their land and did not have enough space left.

In addition the quality of the seed could not always be relied upon. Old onion seed was given and only 10% germinated. Tearfund also requested certain varieties of seed, but a mixture of varieties was delivered from FAO. The same applied to the quality of tools that had been donated by FAO.

On some occasions FAO did not have the full quantity of seed that was requested. For the next phase Tearfund should seek reliable seed suppliers to supplement the seed supplied by FAO to ensure that sufficient quantities and specific varieties are available. The process for acquiring these was described in the proposal for the cost modification.

In the associations at Mpinga and Gisenyi a number of the families involved, who were mostly returnees, consumed some of the seeds distributed for season A because their food stocks were low. Around 60% of the seeds were eaten. Other families only had small plots to sow and ate the seed, which was left over. Sensitisation was carried out for the next season and close monitoring of the amount of land sown.

It was realised that some of the beneficiaries were not used to eating some of the vegetables sown and therefore did not make an effort to harvest them. The nutrition training aimed to overcome this problem.

A similar problem was seen with the multipliers who were not very enthusiastic about multiplying soya as they did not think there was a large market for them. However many of the vulnerable farmers are now asking for these seeds as they are not widely available, but they understand the nutritional value of them.

Experience from the first harvest showed that it was necessary to monitor very closely the harvest yields of the multipliers. In a couple of locations the multipliers were suspected of hiding some of the harvest to avoid reimbursing it. They preferred to sell it. Therefore these multipliers did not have their contracts renewed for the next season.

For the cultivation of mushrooms to be successful a large effort is required and the shelter where the seeds are grown has to be thoroughly cleaned. This could be difficult for many families who like to cultivate mushrooms. It is also a reason why the harvest was low. Only 14.94 kg of mushrooms were harvested out of an expected 350kg because some of the culture had been contaminated. Refresher training was planned for phase two in mushroom cultivation techniques with follow up.

The climate had a major effect on the levels of production over the last year, not just in Makamba, but countrywide. Heavy rain destroyed the bean crop in season A in some areas and then in season B the rain stopped in April rather than May. This affected the bean harvest again. A survey carried out by FAO and WFP estimated a 60% loss of production of beans in Makamba province for season B.

#### **IVg Objective 2- Overall Performance – First Phase**

The mid-term evaluation concluded that all activities have been fully carried out for this objective “although not always to the extent that was planned in the indicators. Seeds were distributed to associations in quantities that were much smaller than planned in season A. To some extent that was an appropriate response to the limited land the associations could prepare at short notice for the sowing season, but it also reflected the limited availability. If more seed had been provided many of the associations would have sought to utilise more land where it was available. In season B the seed was given out on the basis of land cultivated: this will prove to be a good motivation to cultivate more, which many of the associations interviewed are rising to.

This objective is on the way to being fulfilled. Due to the tool distribution people are able to open up more land than they would otherwise have done, and they have directly benefited from the distribution of the local variety of bean seed. The multiplication of improved seed by both associations and multipliers will increase the availability of higher yielding, better tasting, more nutritious and higher marketable value food in the community from the time of Season A2004 harvest. It is probable that the impact indicators have not been met due to reasons principally beyond the control of the Project.”

As the farmers originally had such low levels of resources the inputs given in this project have managed to help re-establish their livelihoods, but not necessarily increase their production. Given the climatic conditions experienced by farmers in Makamba over the last year it has been noted that those involved in the project have managed to achieve stable harvests compared with others who have suffered losses. Therefore this project has greatly contributed to ensuring good yields and production for the beneficiaries involved. With continued support during the next phase of the project the vulnerable farmers are now in a position to be able to continue to work to assure their own food security and increase levels of production over the coming year. As stated in the mid-term evaluation:

“The Project has definitely increased the potential for an improvement in production levels due to the distribution of seed and tools to the farmers. However there has not necessarily been an increase in available food, partly due to the purchase of the quality crop harvest for seed, but mainly due to the bad rains in each season affecting general agricultural production. However, if there had been no seed distribution there would have been a much more severe shortfall in food production. “If it were not for Tearfund, our children would have had nothing to eat.”

Although Project beneficiaries are not seeing much tangible improvement in their own circumstances, they are being given hope and that seems strong at the moment: they see that next year things can be better as they have access to seed, access to organic manure, know how to improve their land and are genuinely appreciating being in associations. Both Season A and Season B had rainfall levels that have reduced crop yield through the whole country. Already the price of food crops in the local market is very high reflecting the low harvests. Tearfund beneficiaries are better off than others, but if seed is not to be eaten at the start of Season A, food distributions are also needed.”

#### **IVh Objective 2- Summary of Cost Effectiveness – First Phase**

The provision of seeds, tools and goats should be one of the most expensive parts of the project, but in the end most of the seeds were supplied free of charge by FAO, thus saving money.

In general this type of objective requires more than a year's input to see results especially taking into account uncontrollable factors such as rainfall. Taking into consideration the cost and amount of inputs which are required to effectively increase production and the length of time required to experience results it is not often that this type of objective proves to be cost effective in one year. As can be seen with this project the level of production has not been measurably increased, but the potential for increases and improvements has been established.

The budget for the first phase was under spent, but some of this amount was transferred to training activities. A full time vet was also employed by Tearfund to aid the Provincial vet and to ensure that constant monitoring and support was available for the associations.

**V Objective 3 – Report Against Indicators – First Phase**

Ensure comprehensive knowledge transfer during and following programme to ensure lessons learned are shared with the Ministry of Agriculture at the national and provincial level.

<b>Objective 3</b>	<b>Indicators</b>	<b>Progress</b>
<b>Ensure comprehensive knowledge transfer during and following programme to ensure lessons learned are shared with the Ministry of Agriculture at the national and provincial level.</b>	Knowledge transfer activities undertaken and documented	Informal and formal coordination meetings and exchange visits were held as detailed below.
<b>Activity One</b> Relationship building	Hold initial meeting with the Ministry of Agriculture (MoA)  Hold final meeting with the MoA within 2 months of end of programme	1 meeting held with deputy of MoA in September 2003 to introduce the programme.  Meeting with the administrators and the Director of DPAE to introduce the new project.  A meeting planned for October 2004 to discuss successes and constraints of the previous phase and explain objectives for the next, took place in December 04.
<b>Activity Two</b> Internal Review of Ministry of Agriculture food security strategies	Review national MoA and Makamba province food security strategies	DPAE has changed part of its strategy and adopted the Tearfund approach of targeting poor people when identifying beneficiaries
<b>Activity Three</b> Information sharing meetings	Hold quarterly meetings with the MoA, Institut Scientifique d'Agriculture au Burundi (ISABU) and other NGOs working in food security in Burundi	Tearfund is the Focal Point for Food Security in Makamba Focal Point Coordination meetings were held every quarter between the DPAE and all relevant NGOs in Makamba

		Food Security Coordinator participated in FAO coordination meetings in Bujumbura on a national level
<b>Activity Four</b> Exchange programme	Field visits by DPAE staff to programme sites	DPAE Staff involved in visiting the sites for multiplication. DPAE Field Assistants worked as Extension workers for the project 2 meetings were held in Mabanda and Vugizo with DPAE staff
	Field visits by Makamba staff made to Kirundo	Makamba team visited Kirundo team in January 04 and a return visit was carried out in April 04
	Have informal discussions with Kirundo team	Informal discussions with Kirundo team on an adhoc basis concerning for example supply of seeds and organisation of activities

### **Va Objective 3 - Narrative – First Phase**

An initial meeting was held with the local Department of Agriculture to introduce the programme in September 2003, at which the objectives and the proposed activities were fully discussed. Various meetings were held throughout the year to discuss the work of the extension workers and various activities.

A further meeting was held in October 2004 to review the results of the project to date and to discuss the plans for the next phase

Information sharing meetings were held every quarter in Makamba between Tearfund, the DPAE and PRATAO (a local NGO working in the area of food security). At these meetings updates of activities were given and any problems experienced were shared.

On a national level the Food Security Coordinator participated in meetings held in Bujumbura by FAO for all stakeholders in the country. There were two groups which met, one to discuss the information collected and situations predicted as part of an early-warning monitoring system. The other group met to plan and coordinate the seasonal seed distributions. Tearfund is the lead partner in Makamba for FAO.

The food security team spent 5 days during January 04 with the Tearfund team in Kirundo visiting the food security project funded by PCAC<sup>3</sup> As the Kirundo project was well established, the team were able to see how it was organised. They were also able to exchange ideas with the Kirundo team and learn from their experiences. The Kirundo team also visited Makamba during April 04 and continued discussions were held as to lessons learnt and resolution of problems encountered.

The DPAE staff were involved in visits to seed multipliers to observe how this aspect of the project was carried out. Two meetings were held with associations in Mabanda and Vugizo. These visits initiated discussions about the different approaches to supporting associations.

### **Vb Objective 3 - Assessment and Surveillance Data Used to Measure Results – First Phase**

Minutes of Focal Point Coordination meetings and FAO meetings are kept on record

<sup>3</sup> Programme Cadre d'Appui à la Communauté / Programme for Community Assistance  
Tearfund Final Report – Food Security in Makamba Province, Burundi  
October 2003 to November 2005

Agronomists reports detailing learning from exchange visits are also filed as part of the project records.

### **Vc Objective 3 - Demographic Profile of Targeted and Reached Beneficiaries – First Phase**

This involves information sharing with the DPAE (Department Pour Agriculture et Elevage), advocating for improved land distribution and food security strategies, and coordinating with the government and NGOs in the food security sector. These activities have no direct beneficiaries although improvements made will have implications for all the beneficiaries in the project.

### **Ve Objective 3 - Success Achieved – First Phase**

Good relationships were maintained and regular updates of activities were discussed formally and informally between the Food Security Coordinator and the Provincial Director of the DPAE. Tearfund was invited to contribute to two strategic documents concerning rehabilitation and micro-finance for farming associations for the Department, and the Ministry of Agriculture in March and in July 04 and also to coordinate in collaboration with the head of the DPAE, a workshop on good practice in agriculture interventions.

Tearfund was focal point for food security activities in Makamba, which involved liaising and coordinating between local NGOs, International NGOs and the government department.

Tearfund associations were officially registered with the DPAE in all the 3 communes of work. In August 04, some committee members from associations supported by Tearfund were chosen to lead district committees of farmers. This showed that the DPAE considered the associations of vulnerable farmers to be strongly managed.

Training with the DPAE was carried out during November 2003 on monitoring and evaluation systems. As a result it was realised that a local NGO had not distributed all the seed that it had been given and this issue was followed up.

Seeds were distributed for the season C2004. However access to the marsh lands was a problem for many of our beneficiaries therefore some beneficiaries were able to carry out activities for the season in collaboration with DPAE on their land, especially in Mabanda.

The mid-term evaluation concluded:

“The work of the project is definitely in line with the stated objectives of the Ministry of Agriculture. The Provincial Director expressed his objectives in terms of an improvement of production through intensification of agriculture and also promoting soil conservation techniques. The Director himself noted that these are areas where Tearfund is active.

Information is being transferred to the DPAE through project reports and regular meetings, and there are definitely areas of learning in terms of the approach to working with the poor, and also of doing animal production in associations.

DPAE has no experience of a pro-poor approach so the involvement of the DPAE field workers and their positive experience in this area is valuable in feeding into an acceptance of, and possible policy change to, this approach at provincial level. For this to be effective it needs to be reiterated at national level with a further meeting with the Ministry of Agriculture

The exchange visits between the Tearfund Makamba and Kirundo team served to motivate and encourage the teams to seek ways of improving the support and monitoring of the associations. They were also able to discuss problems encountered and see how projects vary in different parts of

the country. In addition the trips were good team-building exercises and also improved relationships between the project sites.”

**Vf Objective 3 - Constraints – First Phase**

Time constraints were the main problem as activities in the field, which had to be carried out in accordance with the agricultural calendar, often ended up taking precedence. In addition it was sometimes difficult to coordinate schedules with the DPAE and other partners.

**Vg Objective 3 - Overall Performance – First Phase**

This objective was very useful in ensuring that good communication was maintained with all stakeholders. Good relationships were built and collaboration was effective throughout the project period.

As stated in the mid-term evaluation: “It can be said that Objective 3 has been fulfilled – there is a definite move of information from the Project to the DPAE, there is mutual learning about the approach of working with the vulnerable due to the integration of DPAE Extension Workers into the Project; the Project associations have been registered with the DPAE and their legitimate existence is recognised. However the objective is expressed in stronger terms, as “comprehensive knowledge transfer” which implies that the Project has a lot to teach the Government about working with farmers. There is no evident expectation of mutual learning and that ...is a missed opportunity.” As will be seen from the results of the next phase of the project, a greater level of involvement was achieved during the second phase. DPAE adopted the criteria and methods used by Tearfund during beneficiary selection.

As part of the two-way knowledge transfer., Tearfund came to a greater level of understanding of the resource constraints DPAE try to work under. This needs to be taken into consideration during the design of any future interventions.

**Vh Objective 3 - Summary of Cost Effectiveness – First Phase**

Costs for this objective fall under personnel salary costs..

**Vi Objective 3 - Overall Cost Effectiveness – First Phase**

In general the project has managed to conduct all required activities and achieve the majority of its desired results. Overall the budget for phase one was under spent and this was mainly from savings on seeds, tools and items, which were donated. As this was the first phase of the project some costs had to be estimated.

**VI Objective 1 – Report Against Indicators – Second Phase & Extension<sup>4</sup>**

Increased livelihood security for vulnerable households and returnees

<b>Objective 4</b>	<b>Indicators</b>	<b>Progress</b>
1. Increased solidarity, support, access to credit and market potential from farmers working in association	75% of farmers association working together, registered and joined up with local bank	96% of associations registered & worked together.  94% of new associations (74/79, [58% of old & new associations 74/127]) registered and joined with Coopec, a local bank
2. Increased access to and usage of quality seed and tools by	40% increase in harvest yields of associations	Production has been increased on collective and individual land. An average of 22% increase in production was achieved. The maximum of 35% achieved in season A was reduced by the drought

<sup>4</sup> Extension Indicators in bold type face

<p>vulnerable families</p>	<p>Shorter hunger gap after season B for vulnerable H/H compared with non beneficiaries</p> <p>Vegetables being grown and consumed by 70% of all beneficiaries</p> <p>All beneficiaries using tools distributed</p> <p><b>8 ha of land will be cultivated &amp; sown with 80,000 CMD resistant cassava cuttings</b></p> <p><b>800,000 CMD-resistant cassava cuttings are produced by 8 associations</b></p> <p><b>7% of households receive CMD-resistant cuttings</b></p> <p><b>80,000 cords of Sweet Potato are multiplied by 40 households</b></p>	<p>during season B 2005.</p> <p>The hunger gap after season B 2005 was reduced from 3.5 months for non-beneficiaries to 2 months for beneficiaries.</p> <p>70% of beneficiaries (6,033) grew and consumed vegetables, a total yield of 12,700 Kg (data collection, Sept 05).</p> <p>All 1,386 households – 8,618 individuals – used the tools distributed.</p> <p><b>ISABU was not able to satisfy the needs for CMD-resistant cassava cuttings for season A2006. 4 ha were sown with 40,000 CMD-resistant cassava cuttings in the marsh of Munyika in Makamba. 10,000 CMD-resistant cuttings will be delivered for planting in February 06.</b></p> <p><b>4 associations were involved in CMD-resistant cassava multiplication in the marsh under the control of DPAE. 500,000 cuttings will be produced and distribution will take place in September 07.</b></p> <p><b>See above</b></p> <p><b>80,000 cords of sweet potato (var. Mugande ) was distributed to 40 HHs and 320,000 cords of potatoes were distributed. 17,009 kg of seed distributed to 411 households and all beneficiaries received individual seed (5 kg) to sow.</b></p>
<p>3. Beneficiaries practice methods of intensive, sustainable agriculture</p>	<p>75% of farmers practising erosion control, crop maintenance pest and disease control agro forestry, sowing in lines, on individual land and associations land</p> <p>60% of farmers understand principles of erosion control and sustainable intensive</p>	<p>60% of beneficiaries (5,140 individuals) practiced erosion control, tree planting, agro forestry, pest control and sowing in lines. This was lower than the target of 75% due to conditions of drought killing grasses and forcing families to prioritise food production through the drought.</p> <p>62,333 m of contour bands were planted with grass shoots by 592 households (3,552 individuals).</p> <p>85% of farmers understand the principles of erosion control and sustainable agriculture</p>

	<p>agriculture</p> <p><b>2 associations produce 0.8 ha of forage for 90 households &amp; comply with PRASAB regulations</b></p> <p><b>300,000 grass shoots distributed &amp; planted</b></p>	<p><b>6 associations produced 1 ha of forage during the extension period.</b></p> <p><b>During the extension, 211,400 grass-shoots were distributed and planted by the associations. A total of 19,762m of lines were planted.</b></p>
4. Reinstatement of livestock as a productive asset through rotative credit system and increased production of organic fertilizer	<p>80% of farmers from associations have built and use compost pits</p> <p>95% farmers multiply and pass on healthy, new livestock to vulnerable households in a rotative credit system within one year</p>	<p>67% of beneficiaries (928 farmers) dug and used compost pits. Only 336 farmers (24%) used manure from goats due to the increased expense and time needed to manage zero grazing.</p> <p>80 associations (63% of farmers) received goats (10 females and one Alpine male to 5 members of each association). See Result 4, page 29.</p> <p>843 farmers (62%) multiplied and passed on healthy new livestock. 381 kids were borne from this first distribution. Although this is below the target figure, when the fertility periods and duration of pregnancy are taken into consideration, this is considered to be an acceptable outcome. The mortality rate for goats varies from commune to commune in Makamba between 9 to 15%.</p>
5. Reduced risk and increased income as farmers production systems are diversified through fruit tree planting	<p>4,280 number of fruit trees planted and 80% survival rates.</p> <p><b>10,000 fruit trees planted and 80% survival rate</b></p> <p><b>100 households (83% of beneficiaries) trained in grafting techniques</b></p> <p><b>7% of households integrate trees with crops</b></p>	<p>4,933 fruit trees were distributed to 783 vulnerable households/4,698 individuals. The survival rate was 89%.</p> <p>A further 4,832 fruit trees were distributed during Nov 05 of which 1,641 were grafted avocados.</p> <p><b>Distribution of fruit trees in November was done in 3 communes. 6,000 fruit trees were bought. Distribution took place in November in 3 communes. 4,832 fruits trees were distributed (avocadoes and orange trees) to 700 HHs (4,200 individuals).</b></p> <p><b>It was not possible to train associations in grafting techniques due to lack of time. At the other hand, 90% of fruit distributed were bought grafted.</b></p> <p><b>13% beneficiaries (190 farmers/1,140 individuals) have planted agro-forestry trees. Each beneficiary has received 40-50 trees to</b></p>

		<b>plant in his own land. They integrated the trees with crop and neighbouring people have also received trees from Tearfund nurseries in Kayogoro.</b>
6. Farmers learn the fundamentals of good nutrition and are able to cook and prepare nutritious food for their families	75% of households able to explain the principle of a balanced diet	All 127 associations received education sessions with a rate of participation of 90%. The sessions focused on: <ul style="list-style-type: none"> <li>➤ good nutrition practise</li> <li>➤ local porridge promotion</li> <li>➤ the use of soya milk</li> </ul> 79% of beneficiaries were able to explain the principle of a balanced diet.
7. Increased capacity of local DPAE [Department of Agriculture]	<p>Relevant change to policy affecting rural livelihoods</p> <p>Number of training activities for beneficiaries organised in collaboration with and attended by DPAE staff</p> <p><b>Delivery of a 2 day training programme for 381 association representatives</b></p> <p><b>127 action plans (including an evaluation plan) for the associations to be written by association representatives during the extension period.</b></p> <p><b>1 strategic plan for follow up of the associations to be written by the extension workers during the period</b></p>	<p>DPAE policy and attitudes were changed during the course of the project. During 2004 they adopted Tearfund's criteria and methods for beneficiary selection and interacted much more positively with the farmers and associations.</p> <p>30 DPAE staff participated in a 5 day workshop on participatory approaches.</p> <p>27 DPAE staff participated in a 1 day workshop organised for instruction on seed rehabilitation.</p> <p>DPAE staff participated in 2 days of training in the field for the associations and a 3 week demonstration on erosion control.</p> <p><b>DPAE staff and the extension workers were asked to do a follow up of those activities due to finish latter in December. Some activities had to be left due to lack of time</b></p> <p><b>Each representative of the association was asked to draft a plan for the future and to begin to refer directly to DPAE in field. Follow up was not possible as follow on funding was expected, but not granted.</b></p> <p><b>3 meetings with DPAE have allowed the latter to understand how the associations will be supported in the coming months, but the DPAE are still affected by low levels of resources with which to carry out their work.</b></p>
8. Environmental protection, timber replacement, forage provision	80% of farmers have planted agro forestry trees on contour bunds	From a planned distribution of 13,680 saplings, only 3,200 were available for distribution to 16 vulnerable households in Makamba. As a result of this shortage, the farmers associations were

<p>and erosion control by growing and planting Grevillia, Leucena and Calliandra spp on contour bands, a total of 110,000 trees with 200 farmers associations</p>	<p><b>6,000 grass shoots planted on contour bands by 70 households</b></p> <p><b>100,000 young trees planted on contour bands</b></p>	<p>encouraged to produce their own trees.</p> <p>From this, 190 households were able to plant 26,941 agro-forestry trees and 21,000 grass shoots on contour bands during November 05.</p> <p><b>During the extension, 191,400 grass-shoots (Trypsacum spp. and Pennisetum spp.) were planted on contour bands by 44 vulnerable families (264 individuals) on their own lands.</b></p> <p><b>190 farmers have planted agro-forestry trees on contour bands. Young trees were distributed: 6,472 eucalyptus, 2,000 maesopsis emine, 13,322 cedrella, 4,980 grevillea ssp and 167 calliandra.</b></p> <p><b>30,141 other young trees have been planted not in contour band. Each beneficiary received 40-50 trees for planting.</b></p>
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**Via Objective 1 - Narrative - Second Phase & Extension**

This phase covers the period from 1<sup>st</sup> October 2004 to 30<sup>th</sup> November 2005 and includes the two month no-cost extension (October & November 05). The extension was requested to enable the distribution of the long awaited CMD-resistant Cassava cuttings. A quantity of 80,000 cuttings were specified in the original proposal, but ISABU had experienced difficulty with the introduction of this new strain into the country. The quantity of cuttings was revised down from 80,000 to 50,000, in discussion with ISABU during the preparation of the application for this extension, but they only managed to make 40,000 cuttings available to us on 28<sup>th</sup> November, which were distributed and planted. The balance of 10,000 cuttings (which have been paid for) are still to be delivered at the time of this report. As the project period is complete, Tearfund will distribute and organise the planting of the remaining cuttings from their own resources.

**Result 1: Increased solidarity, support, access to credit and market potential from farmers working in association.**

**Indicator: 75% of farmers association working together, registered and joined up with local bank. SO 7.2.3**

79 new associations were created and continued support was provided for 48 existing associations. 3 committee members were recruited from each of the 79 new associations (237 new committee members) to help with the management of the new associations. Six new agronomists were also recruited to assist with this work.

As recommended by the mid-term evaluation, 31 extension workers (30% women) were chosen from the same home zone as the beneficiaries. A 5 day training workshop was run at the beginning of the project and 1 exchange visit was organised to train the 31 extension workers. This enabled them to work alongside the Tearfund Agronomists and help implement the programme activities such as training the farmers, distributing seeds and tools, and supervising crop maintenance during seeds multiplication.

27 DPAA<sup>5</sup> staff participated as well in training, distribution and demonstrating agricultural techniques to farmers' association.

<sup>5</sup> Provincial Department of Agriculture and Livestock  
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All the new committee members were trained during 5 days of training and the old committees received refresher training on:

- formation and registration of the association
- cash management
- storage and record keeping.

All farmers association were trained in situ in all the techniques above and were encouraged to work together.

- 96% of farmers associations worked together and were registered in their communes. Their capacity and management skills were developed and they became eligible for governmental support (PRASAB).
- 94% of new associations (74/79, [58% of old & new associations 74/127]) were registered and joined with Coopec, a local bank
- 5% of farmers associations (72 vulnerable households/432 individuals) are working with PRASAB
- 2% of farmers associations (20 vulnerable households/120 individuals) have received funds from PRASAB. They have bought additional goats, plants and agro-forestry trees.
- 21% of farmers in associations (1,820 individuals) have created 9 shops where they sell food and palm oil.
- 3 associations rented land and produced rice and 3 others sold seeds in 2 communes.

## **Result 2: Increased access to and usage of high quality seeds and tools by vulnerable families**

### **Indicator: 40% increase in harvest yields of associations. SO 7.2.2.**

During the reporting period, each farmer's association cultivated collective land to multiply seeds. 46 associations rented land themselves and multiplied bean, maize or potato in 31 different locations. All beneficiaries participated in seed multiplication, however, it was found necessary to reduce the number of private multipliers from 27 to 7 due to a propensity for fraudulent transactions by a number of private multipliers.

62.5 ha were cultivated for season A2005 and 17,642 kg of seeds were given for multiplication both to private multipliers and to the associations. There were 6 varieties of bean, 1 variety of potato, 1 variety of maize. Soya and nuts were also distributed for multiplication. Sorghum was distributed to 48 associations in two communes. This produced a yield of 42,391 kg, an average 678 Kg per ha (for season A).

For Season B 05, the yield of 42,391 kg of high quality seeds (from Season A above) was distributed to vulnerable households in order to improve the yield of their crops in season B 05.

A total of 65,535 kg of high quality seeds were distributed to 1,386 households/8,618 individuals in farmers association during the reporting period. 495 households/2,970 individuals received soya (0.5 kg of soya per household) while 516 households/3,096 individuals received maize (5 kg of maize per household) to plant.

This increased the production both in collective land and in individual land, the production varied from one commune to another commune due to different local altitudes and climates.

A 22% average increase in production was registered over the existing farming system, which produced 370 kg/hect<sup>6</sup>. The minimum increase was registered in Kayogoro and Nyanza Lac where a long drought period in April had caused a 70% loss of production in season B2005. The maximum

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<sup>6</sup> Reference to baseline data: local bean variety could produce 300 kg/hect.  
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yield (a 35% increase) was registered in Vugizo where the price of kg of bean was reduced from 600 BIF to 250 BIF.

Three varieties of beans (MORE, IZ201513 and And10) with high yield (410 kg/hect, 453 kg/hect and 673 kg/hect) were promoted in all associations. The maximum yield was registered with And10 in Kibago (703 kg/hect) which exceeded the average yield for bean 700 kg/hect (1/4 report DPAE, June 2005).

### **Extension Indicators**

During the extension period 17,009 kg of seeds were distributed to 411 vulnerable families to sow. 1,386 households/8,618 individuals (all beneficiaries) also received 5 kg of maize per family to sow on individual plots. In the new associations (790 households/4,740 individuals), 3,950kg of bean were given to compensate for the seed shortage for season A06.

The associations continued to grow vegetables (1,386 households/8,618 individuals): 90% of the associations had harvested. In Vugizo, 14 associations were busy with harvesting in the marsh during the extension period: 3,112 kg of potato were harvested.

#### **a) 8 ha of land will be cultivated & sown with 80,000 CMD resistant cassava cuttings**

ISABU was not able to satisfy the need for CMD-resistant cassava cuttings for season A2006. As indicated above (introduction to the Narrative for Section VIa on page 25), instead of 80,000 cuttings of CMD-resistant cassava only 50,000 were allocated to Tearfund for multiplication in Makamba province. 8 ha of land was cultivated for this purpose, but only 4 ha was sown with 40,000 CMD-resistant cassava cuttings in the marsh of Munyika as this was the quantity finally made available during the final days of November. The balance of the 10,000 cuttings will be delivered in February 06 and Tearfund will pay for the distribution and planting as it is outside the project period.

#### **b) 800,000 CMD-resistant cassava cuttings are produced by 8 associations**

Following the recommendations of ISABU, the CMD-resistant cuttings had been multiplied under the control of the local agricultural technical services. This meant that the high maintenance and disease control was the task of DPAE. 4 associations were involved in CMD-resistant cassava multiplication in the marsh under the control of DPAE. With the 10,000 cuttings due to be delivered during February, the associations should produce 500,000 CMD-resistant cassava cuttings for the next season. This distribution will take place for the next season outside of the project period.

#### **c) 7% of households receive CMD-resistant cuttings**

This will be dependant on distribution of the yield referred to in b) above. As we have already witnessed former Extension Workers distributing trees referred to in 3(b) below, we have a reasonable level of confidence that this will happen.

#### **d) 80,000 cords of Sweet Potato are multiplied by 40 households**

80,000 cords of sweet potato were distributed to 40 households/240 individuals in Makamba. The variety multiplied was Mugande (HYV) from UNFAO. FAO donated another 320,000 cords of sweet potato which were made available to other associations during November.

### **Indicator: Shorter hunger gap after season B for vulnerable H/H compared with non beneficiaries**

The hunger gap after season B for vulnerable H/H was successfully reduced from 3.5 months to two months compared with non beneficiaries. The data collection report in September 05, it was found that each vulnerable household produced at least 92 kg of pulses, 100 kg of cereals and 344 kg tubers.

### **Indicator: Vegetables being grown and consumed by 70% of all beneficiaries. SO 7.2.1**

Data collection organised in September 05 showed that 70% of beneficiaries grew and consumed cabbages, tomatoes, carrots and onions.

This project helped vulnerable families to grow and consume vegetables by providing seeds for short term yield varieties. They received 20g of seed per household and 70% of beneficiaries (6,033 individuals) grew and consumed cabbages, tomatoes, carrots and onions.

The total yield of associations is estimated as 12,700 kg of vegetables .

**Indicator: All beneficiaries using tools distributed**

All beneficiaries received support with tools to work their land. In new associations, each beneficiary household received 2 hoes, 2 sacks and 1 sickle while each new association received 5 watering cans, 5 shovels and 1 sprayer. All 127 associations received a sprayer and each family in the old associations received 2 hoes.

The distributed tools were helpful for all 1,386 households/8,618 individuals in our programme. The hoe, sickle and sack were mostly utilised by all beneficiaries on their individual land. The sprayer was useful for vegetable maintenance.

**Result 3: Beneficiaries practice methods of intensive and sustainable agriculture.**

**Indicator: 75% of farmers practising erosion control, crop maintenance pest and disease control agro forestry, sowing in lines, on individual land and associations land.**  
**SO 7.2.3**

60% of beneficiaries (5,140 individuals) practiced erosion control, tree planting, agro-forestry, pest control and sowing on lines

The 10 agronomists in Makamba visited 1 association per day while the 31 extension workers visited 2 associations each day. They carried out training and demonstrations on agricultural techniques and provided support for managing each agricultural association. All farmers learnt the principles of sustainable intensive agriculture, seed multiplication, erosion control, composting, agro-forestry and livestock management. 12 exchange visits were organised for the committees in order for them to see successful food security results in the area.

60% of beneficiaries (5,140 individuals) practiced erosion control, tree planting, agro-forestry, pest control and sowing on lines compared to 75% aimed by the project. The reasons for this are given below.

62,333 m of contour bands were planted with grass shoots by 592 vulnerable households (3,552 individuals).

Many factors have negatively affected this result including:

- Insufficient rainfall in season (51 days/504.5mm of rain in 4 months) badly affected this activity. The early departure of rain dried all young grasses planted on contour bands, reducing the quantity of forage.
- Priority to produce food for family during the drought.

**Indicator: 60% of farmers understand the principles of erosion control and sustainable intensive agriculture.**

85% of farmers understood the principles of erosion control and sustainable intensive agriculture.

27 DPAE agronomists participated to promote erosion control and land protection in farmers' associations, carrying out regular training visits. The 31 extension workers helped beneficiaries to plant grass shoots in contour bands and 497,687 grass shoots were planted on contour bands. 98%

of beneficiaries participated in demonstrations on erosion control in the field and 85% of beneficiaries (7,282 individuals) understood the principles of erosion control and sustainable intensive agriculture. They achieved a 28% increase in the knowledge of intensive and sustainable agriculture methods.

### **Extension Indicators**

During the extension period the following was achieved under this result:

#### **a) 2 associations produce 0.8 ha of forage for 90 households & comply with PRASAB regulations**

6 associations (75 households/450 individuals) in Kayogoro and Mabanda produced 1 ha of forage. They will receive support from DPAE to fulfil the funding requests for PRASAB. DPAE is responsible for selection and targeting beneficiaries for PRASAB.

#### **b) 300,000 grass shoots distributed & planted**

211,400 grass-shoots were distributed and planted by the associations. A total of 19,762m of lines were planted. Suppliers were unable to complete our order, a shortfall of 88,400 which is a result of the late rains.

The distribution of grass shoots is shown below:

Commune	No of associations	No grass-shoots	Length of lines planted
Kayogoro	3	43,200	4,320
Mabanda	8	102,200	8,989
Makamba	6	66,000	6,453
<b>Total</b>	<b>17</b>	<b>211,400</b>	<b>19,762</b>

### **Result 4: Reinstatement of livestock as a productive asset through rotative credit system and increased production of manure**

At the beginning of October 2004, there were 27,112 goats recorded to be in Makamba and the total livestock was 74,486 (0.22 animal per person)<sup>7</sup>. This number increased during the reporting period, with distribution of new livestock in May 2005 by Tearfund and other NGOs (77,700 (0.24 animal/person). 1,074 Tearfund beneficiary farmers have received goat (approximately 6,444 individuals).

#### **Indicator: 95% farmers multiply and pass on healthy, new livestock to vulnerable households in a rotative credit system within one year SO 7.2.1**

79 new associations and 1 old association (63%) received goats from distribution in the reporting period. 10 female goats and 1 buck were distributed to 5 members of an association. The Billy was an alpine goat 75% crossed with the local goat race. 843 farmers (62%) multiplied and passed on healthy, new livestock to vulnerable households through a rotative credit system. The birth rate was lower than expected until it was discovered that farmers were keeping the Billy goat away from the Nanny goats. 381 kids were born from the first distribution of goats and 231 farmers received goats from the second redistribution.

8 workshops were held to inform and train the 31 extension workers and 254 members of associations (2 people per association). The six DPAE vet technicians participated in the training of the 254 people on injection, castration, medicine and treatment of wounds. They carried out visits in field to treat the goats in different associations. 12% of farmers associations did zero grazing due to lack of forage and low knowledge. They produced forage from their contour bands.

<sup>7</sup> Information taken from DPAE Makamba Survey Records  
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55% of beneficiaries (783 vulnerable households/4,697 individuals) have produced forage for goats, dug compost pits and use organic manure.

**Indicator: 80% of farmers from associations have built and use compost pits. SO 7.2.3**

67% of farmers (928 households) dug and used compost pits, but only 336 farmers (24%) used manure from goats due to the higher expenditure in time and cost that zero grazing techniques require. This activity came, for many, during a period of drought when, by necessity, the production of food for the family takes precedence over all else.

**Result 5: Reduced risk and increased income as farmers production systems are diversified through fruit tree planting.**

**Indicator: 4,280 number of fruit trees planted and 80% survival rates. SO 7.2.1**

4,933 fruit trees were distributed to 783 vulnerable households/4,698 individuals. Survival rate was 89% except in Kibago. This was not only due to shortage of rain in May, but by damage caused by termites on fruit trees.

**Extension Indicators**

**a) 10,000 fruit trees planted and 80% survival rate**

A late and limited rainfall during the previous growing season resulted in a shortage of fruit trees, only 6,000 of the planned 10,000 were available, of which 5,400 were grafted stock. The distribution of avocado and orange trees took place in November in 3 communes to 700 HHs (4,200 individuals).

The following table shows the number of grafted fruit trees distributed, by commune.

No	Commune	Number of grafted fruit trees
1	Kayogoro	689
2	Kibago	1,251
3	Mabanda	988
4	Makamba	1,406
5	Nyanza Lac	-
6	Vugizo	-
<b>Total</b>		<b>4,334</b>

296 fruit trees (5%) were damaged during handling and transportation.

**b) 100 households (83% of beneficiaries) trained in grafting techniques**

With hindsight, this was too ambitious a target to set for this point in the project.

**c) 7% of households integrate trees with crops**

Each beneficiary received 40-50 trees to plant on their own land. The indicator of 7% was easily achieved by beneficiaries integrating the trees with their crop. Neighbouring people have also received trees from Tearfund nurseries in Kayogoro.

**Result 6: Farmers learn fundamentals of good nutrition and are able to cook and prepare nutritious food for their families**

**Indicator: 75% of households able to explain the principle of a balanced diet**

127 associations received education on balanced diet with a rate of participation of 90%. The education sessions focused on the following topics:

- good nutrition practise
- local porridge promotion
- the use of soya milk

A KAP survey was carried out amongst 26 associations (223 households/1,338 individuals).

79% of beneficiaries were able to explain the principle of a balanced diet, enabling them to be more informed when making decisions regarding nutritional intake. This also resulted in improved general health as there was an augmented awareness of how lack of nutritional intake can result in harmful conditions such as kwashiorkor and marasme.

## **Result 7: Increased capacity of local DPAE**

### **Indicator: Relevant change of policy affecting rural livelihoods**

DPAE policy and attitudes were changed during the course of the project. During 2004 DPAE adopted Tearfund's criteria and methods for beneficiary selection and interacted much more positively with the farmers and associations.

### **Indicator: Number of training activities for beneficiaries organised in collaboration with and attended by, DPAE Staff**

All DPAE staff met with Tearfund at the beginning of the project and 30 DPAE staff participated in a 5 day workshop on participatory approaches.

A 3 day training workshop was organised for people with only a basic knowledge and small plots of land, to help them with seed multiplication and 27 DPAE staff participated in a 1 day workshop organised for instruction on seed rehabilitation.

A baseline survey was carried out by the Tearfund Team in collaboration with DPAE staff.

Tearfund and DPAE staff shared information on reports during the reporting period. In May 2005, the DPAE vet worked together with the Tearfund vet to organise and carry out training in the medical care of goats and on castration and injection in the field. They participated in 2 days of training in the field for the associations and a 3 week demonstration on erosion control.

### ***Extension Result 7. Increased participation of community in planning, monitoring and implementation of the project***

#### **a) Delivery of a 2 day training programme for 381 association representatives**

With hindsight, this was too ambitious a target to set for this point in the agricultural year. The 2 months of the extension period were too busy as all the farmers were sowing. There was no time to organise meetings, other than for those in the field to plan the immediate ongoing activities. Under these conditions it was not possible to organise training activities under this result. DPAE staff and the extension workers were asked to do a follow up of the activities due to finish later in December.

#### **b) 127 action plans (including an evaluation plan) for the associations to be written by association representatives during the extension period.**

Each representative of an association was asked to draft a plan for the future and to begin to refer directly to DPAE in the field. DPAE lack manpower and have very few resources with which to work, so it may be difficult for them to engage effectively with this task.

#### **c) 1 strategic plan for follow up of the associations to be written by the extension workers during the period**

DPAE staff helped the Tearfund agronomists and worked alongside the extension workers to identify the needs of beneficiaries. Three meetings were held with DPAE to help them understand how the associations need to be supported in the coming months, but DPAE still have problems of lack of resources to work with and low capacity to respond to the needs of the associations, consequently the strategic plan was not completed during the extension period.

**Result 8: Environmental protection, timber replacement, forage provision and erosion control by growing and planting Grevillia, Leucena and Calliandra spp on contour bands, a total of 110,000 trees with 200 farmers associations**

**Indicator: 80% of farmers have planted agro forestry trees on contour bunds. SO 7.3.2**

13,860 saplings were planned to be distributed and planted during the contract period. Despite DPAE reports on the total number of trees available for year 2005, very few were actually available at a time when the needs were high. For this reason, only 3200 saplings were available for distribution to 16 vulnerable households in Makamba and the farmers associations were encouraged to produce their own trees.

441,000 agro-forestry trees were planned to be produced with associations. Due to lack of re-planting bags, only 109,760 trees were produced in all communes (except Nyanza Lac, where many of the beneficiaries are returnees and very busy with the fundamental needs of food and shelter).

497,687 grass shoots were distributed and planted on 62,333 m of contour bands by 592 vulnerable households/3552 individuals. Due to the shortage of rain in season B2005, many grasses dried, resulting in a survival rate of 56%.

***Extension: Result 8 Environment protection, timber replacement, forage provision and erosion control by growing and planting grevillea, leucena and calliandra spp on contour bands.***

**SO 7.3.2**

**a) 166,000 grass shoots planted on contour bands by 70 households**

191,400 grass-shoots (*Trypsacum* spp. and *Pennisetum* spp.) were planted on contour bands by 44 vulnerable families (264 individuals) on their own lands. Some of the grass-shoots were used to replace those that dried during the dry season: 2,410 m lines were planted.

**b) 100,000 young trees planted on contour bands**

For the reason of late rains referred to in Result 5a above (page 30), it was only possible to distribute 26,941 young trees from the nurseries, as follows: 6,472 eucalyptus, 2,000 *maesopsis emine*, 13,322 *cedrella*, 4,980 *grevillea* spp and 167 *calliandra*. Each beneficiary received 40-50 trees for planting. 190 farmers planted agro-forestry trees on contour bands.

In addition to the 26,941 trees (above) 30,141 young trees were planted by vulnerable farmers in our programme. These were trees that we had motivated them to grow for themselves.

Although it was only possible to distribute 26,941 young trees during the extension period, more than 75,000 young trees continue to mature in the nursery. The extension workers of the programme continued the distribution of these 75,000 young trees to former beneficiaries during December.

**VIb. Objective 1 - Assessment and Surveillance Data Used to Measure Results - Second Phase & Extension**

An initial baseline survey was carried out in November 2004 to establish agricultural and nutritional knowledge, attitude and good practices. The results of this survey were used throughout the reporting period to measure progress.

The data relating to activities was taken from monthly reports written by the Extension Workers, Agronomists, the Food Security Coordinator and the Beneficiaries.

Tests were carried out pre and post training to measure levels of increased knowledge and understanding.

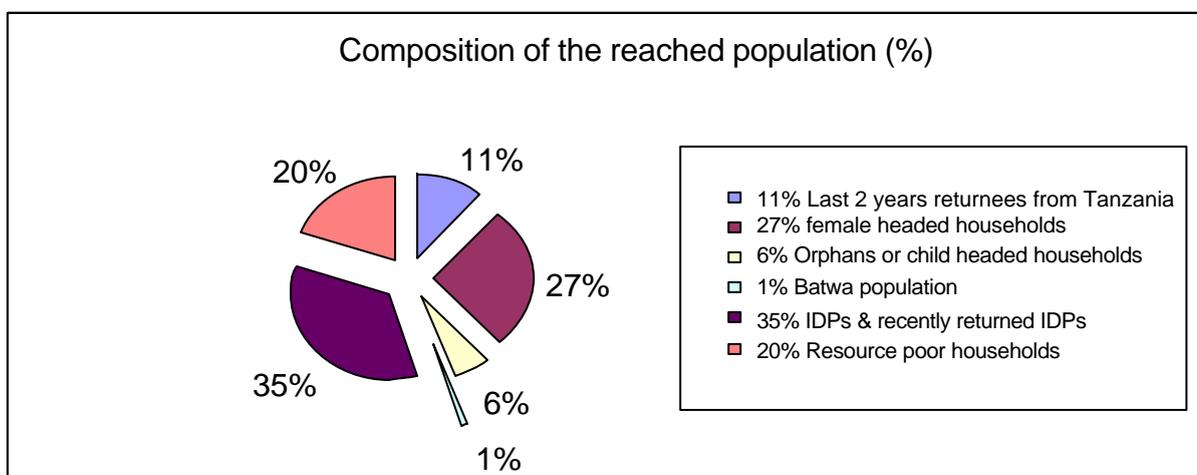
Stock control records and distribution lists were used to verify the quantities of items distributed, and Agronomists records were used to report on harvest yields.

### **Vic Objective 1 - Demographic Profile of Targeted and Reached Beneficiaries - Second Phase & Extension**

The number of beneficiaries targeted and reached includes 1,386 households/8,618 individuals who benefited from this project. They were selected by using vulnerability criteria in conjunction with the community during meetings in the zones.

There were slight variations in the number of beneficiaries during the programme caused by migration and illness. The size of the associations varied between 10-15 members. The table below gives the distribution of beneficiaries per commune and the chart gives the actual demographic profile of target groups as at the end of the reporting period.

No	Commune	Targeted (pers)	Number of beneficiaries at start date (pers)	Number of beneficiaries to date(pers)
1	Kayogoro	1,440	1,440	1155
2	Kibago	1,440	1,440	1065
3	Mabanda	1,556	1,584	1940
4	Makamba	840	816	2457
5	Nyanza Lac	1,440	1,440	1361
6	Vugizo	1,590	1,560	589
		<b>8,316</b>	<b>8,280</b>	<b>8,567<sup>8</sup></b>



### **VId. Quantitative and Qualitative Data - Second Phase**

#### **Production SO 7.2.1**

The data contained in this section refers to activities carried out between 1<sup>st</sup> October 2004 and 30<sup>th</sup> September 2005. It has not been possible to include data from the two month extension period due to time constraints.

All beneficiaries received seeds and a 22% increase in yield was registered. The table below gives the quantity of seeds distributed for year 2005.

<sup>8</sup> Of the total 8,618 beneficiaries reached during the period, 12 have died from disease and 39 have moved commune leaving a net total of 8,567 beneficiaries.

<b>Crops</b>	<b>Quantity of seeds distributed Y05 (kg)</b>
bean	21,102
maize	2,557
potato	48,165.5
Soya bean	739
groundnuts	1,025
rice	271
Sorghum	10,000
<b>Total</b>	<b>83,859.5</b>

This includes both seeds bought and those produced from the multiplication unit in season A2005. The following table gives the seeds produced during the year 2005.

<b>Crops</b>	<b>Quantity of seed produced Y05 (kg)</b>		<b>Total seed production Y05</b>
	<b>Association</b>	<b>Private multipliers</b>	
bean	4,135.5	1,523	5,658.5
maize	1,891.5	841.5	2737.5
potato	237.5	62	299.5
Soya bean	1,891.5	841.5	2,733
groundnuts	-	1,020	1,020
rice	2,251	-	2,251
<b>Total</b>	<b>10,407</b>	<b>4,288</b>	<b>14,695</b>

### **Training**

The following table shows the pre-post test results of training on agricultural techniques.

<b>No</b>	<b>Main agricultural technique</b>	<b>Pre-test result (%)</b>	<b>Post-rest result (%)</b>	<b>Increase knowledge (%)</b>
1	Erosion control	35	58	23
2	Composting and use of organic manure	25	69	44
3	Managing association, store and recording	10	27.6	17.6
	Average increase knowledge (%)			<b>28.2</b>

### **Nutritional and PHE training**

The data was collected from monthly reports and from a KAP survey conducted in September 2005.

<b>Themes</b>	<b>Pre-test result (%)</b>	<b>Post-test result (%)</b>	<b>Increase in knowledge (%)</b>	<b>Appreciation</b>
Balanced diet	38.5	57	18.5	High participation (80%) and medium level of comprehension
Preparation of soya milk	20.5	67	46.5	High participation (85%) and high level of comprehension high motivation.
Local porridge preparation	57.3	71	13.7	Very high level of participation (92%), medium level of comprehension but very high motivation.
Malaria	43.7	58.2	14.5	Low level of participation

				(<80%) and medium level of comprehension
Fundamentals on hygiene	47.3	61.7	14.4	Low level of participation (<80%) and medium level of comprehension
<b>Global increase in knowledge (%)</b>			<b>21.5</b>	

### Livestock SO 7.2.1

440 new beneficiaries received new goats during this project. Continued support was given to both those in the old associations and new associations to take care of goats. The table below gives information on the progress with livestock in the rotative system.

Commune	No of beneficiaries in programme to date (ind.)	No BNFs who produced grass on contour band for forage (ind.)	No HH who use organic manure from their compost pits (ind.)
Kayogoro	1,155	462	162
Kibago	1,065	447	224
Mabanda	1,940	1,106	77
Makamba	2,457	491	329
Nyanza Lac	1,361	694	618
Vugizo	589	59	28
	<b>8,567</b>	<b>3,259</b>	<b>1,438</b>

The vet technicians carried out data collection in order to know how productive the livestock was during Y04/05. Redistribution of new kids from first distribution was done progressively during this phase.

Commune	BNF	No HHs with goats from 1 <sup>st</sup> distribution	Kids born 1 <sup>st</sup> distribution	HHs with goats: 2 <sup>nd</sup> redistribution	Total No of livestock in programme	Total HHs multiplying goats
Kayogoro	235	120	44	0	292	120
Kibago	240	120	47	0	311	120
Mabanda	261	10	143	75	218	174
Makamba	131	10	54	44	171	103
Nyanza Lac	240	120	5	0	245	120
Vugizo	260	60	88	112	299	206
	<b>1,367</b>	<b>440</b>	<b>381</b>	<b>231</b>	<b>1,536</b>	<b>843</b>

### Erosion control

Survival rate for grasses was calculated by visiting contour bands (see table below).

Commune	Grass shoots planted	Survival rate for grass shoots (%)
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Kayogoro	65,660	43.3
Kibago	149,700	51
Mabanda	78,117	59.2
Makamba	32,500	69.9
Nyanza Lac	30,650	32.8
Vugizo	141,060	80.6
<b>Average survival rate for grass (%)</b>		<b>56</b>

### **Fruit trees distribution**

Fruit trees were planted by 738 households. The survival rate was calculated by counting the number of healthy fruit trees existing in September 2005.

<b>Commune</b>	<b>No of beneficiaries (HH)</b>	<b>fruit trees distributed</b>	<b>Survival rate (%)</b>
Kayogoro	236	1,663	93%
Kibago	160	1,173	77%
Mabanda	45	400	98%
Nyanza Lac	217	1,289	88%
Vugizo	80	408	90%
	<b>738</b>	<b>4,933</b>	<b>89.2%</b>

### **Planting and production of agro-forestry trees.**

Beneficiaries learned to produce agro-forestry trees. Some trees were planted on contour bands and were used as forage for goats. This data was gathered from monthly reports and field reports from extension workers and agronomists.

<b>Commune</b>	<b>Agro-forestry trees distributed and planted</b>	<b>Agro-forestry produced by beneficiaries</b>	<b>Total agro-forestry trees. Y05</b>
Kayogoro	-	60,000	60,000
Kibago	-	11,000	11,000
Mabanda	-	5,760	5,760
Makamba	3,200	15,000	18,200
Nyanza Lac	-	-	-
Vugizo	-	18,000	18,000
	<b>3,200</b>	<b>109,760</b>	<b>112,960</b>

### **VIe Objective 1 - Success Achieved - Second Phase & Extension**

With the collaboration of the DPAAE, good organisation with the Extension Workers and general good planning we managed to successfully distribute seeds to our beneficiaries without delay. This had a major positive impact on beneficiaries and resulted in the reduced hunger gap between seasons A and B.

The second major pillar of success was the increased number of multipliers amongst our own beneficiaries, which proved to be even more successful than in the cases where private multipliers were used. This also facilitated the introduction of potatoes, soya and an improved variety of maize which the beneficiaries preferred because of its shorter growth period.

In parallel with the above was the sensitisation of beneficiaries regarding environmental degradation. The efforts to limit this and maintain fields for maximum production has been successful.

We were able to ensure that production inputs, with the exception of a few items, were provided in a timely and efficient manner.

Making individual families responsible for specific goats, simplified the monitoring and control and made the rotation system easier and more sustainable.

Beneficiaries were able to grow ingredients necessary for the local porridge which led to both improved nutrition and access to credit and markets with potential for more. The opportunities that the local porridge opened far exceeded our expectations and is one of the highlights of the project.

#### **VIf Objective 1 - Constraints - Second Phase & Extension**

Locally there was a shortage of agro-forestry trees for purchase which resulted initially in our being unable to meet the full quota originally proposed. The way we responded to this was to produce trees ourselves. The problem then became a shortage of nursery grow-bags available on the market due to exceptionally high demand. This problem was overcome by using leaves to wrap the root ball of the young tree for distribution.

Adverse weather conditions in April (season B) stunted anticipated success in the growth of beans and potatoes. This insufficient rainfall (51 days/504.5mm of rain in 4 months) was also not evenly spread during the season. The early departure of rain dried out many of the young grass-shoots we had distributed for contour bands, reducing the quantity available for forage.

There was also a shortage of cassava-disease resistant cuttings in the country. These were only available through ISABU, the only provider of CMD resistant cuttings in the country. Two days before the end of the contract period we were notified that 50% of the original quantity were available. 40,000 cuttings were distributed and planted. A further 10,000 were paid for by the project, these will be distributed and planted at Tearfund's expense.

Goats were subject to diseases that were difficult to diagnose in the field. The problem was accentuated by a lack of necessary equipment for use by the vet technicians and extension workers. This problem was rectified and kits containing syringes etc were issued to the vet technicians.

#### **VIg Objective 1 - Overall Performance - Second Phase & Extension**

79 new associations were created and registered. Altogether there were 127 associations that became the base for the whole project and it was through a good sense of cohesion that the range of activities that took place were achieved.

The multiplication of improved seed varieties, combined with improved agricultural techniques, resulted in a production increase of 22%. This benefit combined with the successful multiplication work to provide greater over-all food security for vulnerable beneficiaries.

The most important feature and overall success of the project was the way in which each of the outputs informed one another to attain the goal of livelihood rehabilitation for vulnerable people – linking food security with nutrition and beyond to credit and markets.

#### **VIh Objective 1 - Summary of Cost Effectiveness - Second Phase & Extension**

Activities have been implemented successfully and the intended results have been achieved. Had there not been a severe drought during Season B 2005, the results from the other seasons indicate that the target of a 40% increase in food production would have been achieved comfortably.

The knowledge, skills and capacity of local farmers and the DPAE was increased, with the result that a tangible improvement in food production was achieved in the Province of Makamba, as a direct result of the intervention made through this programme.

## **Conclusion**

This project was executed in 2 phases covering a 26 month period from 1<sup>st</sup> October 2003 to 30<sup>th</sup> November 2005 and provided substantial, tangible support to 8,618 vulnerable individuals to help them address the problems of food insecurity and to re-establish their livelihoods.

The first phase formed the foundation of a solid structure that was easy to manage. During this time, agricultural associations and extension worker systems were set up in collaboration with DPAE.

48 associations (607 households / 3943 persons) benefited from distributions of seeds, tools and goats in order to improve the living conditions and facilitate return of the vulnerable households in their hills.

The bad climatic conditions which prevailed during the first phase of the project have negatively affected the yield. Due to the lack of forage and agro-forestry trees Tearfund sought to enable beneficiaries to produce organic manure in order to improve the fertility of the land.

During the 2<sup>nd</sup> phase of the project, the system of forming and supporting agricultural associations was strengthened. The number of agricultural associations grew from 48 at the beginning to 127 at the end of the project.

The rotative credit system was also established under supervision of 31 extension workers and 254 vet-assistants. Tearfund completed the distributions of the goats: this grew from 288 goats to 1,168 goats at the end of the project. A total of 843 households received goats and because of the adoption of 'zero grazing' techniques, the families are able to use manure from goats which they mix with the other house-waste. These techniques have enabled farmers to improve the quality of their ground for crops.

Agricultural practices improved a lot during the 2<sup>nd</sup> phase when the farmers integrated fruits and trees with crops. While 85 % of the beneficiaries understand the importance of the fight against soil erosion, 60 % of the beneficiaries practiced erosion control in their own lands. 62,333 m of grass-shoots were planted in contour bands. 42.391T of high quality seeds were produced and about 65.535T of high quality seeds distributed during the 2<sup>nd</sup> phase only. Each beneficiary received at least 5 kg of high quality seeds.

All the families cultivated soya bean as a nutritious crop. It has become part of their new agricultural practice to produce and consume vegetables every season.

The results of a Tearfund KAP survey, conducted during December 2001 & January 2002 indicated that Cassava comprised 72% of household diets in Makamba. Since that time Cassava Mosaic Disease has almost destroyed cassava cultivation in many parts of Burundi. However, the first CMD-resistant cuttings were made available to us on 28<sup>th</sup> November (we had been waiting since April 2005). We were able to make available 40,000 CMD-resistant cassava cuttings for multiplication in order to increase the capacity of the community to fight against the cassava mosaic disease. The multiplication from these 400,000 cuttings (400 ha) will be available for distribution in season A07.