

# **Emergency Programme to Combat the Cassava Mosaic Disease Pandemic in East Africa**

## **A SYSTEM-WIDE WHITEFLY IPM AFFILIATED PROJECT**



## **First Quarterly Technical Report**

### **Phase 1**

October-December 1998

**International Institute of Tropical Agriculture**

January 1999

## **Summary:**

Activities of the Emergency Programme to Combat the Cassava Mosaic Disease (CMD) Pandemic in East Africa have been initiated successfully in south-western Uganda, western Kenya and north-western Tanzania.

Monitoring and diagnostic surveys have shown that the pandemic has continued to expand its range in western Kenya, although geographical barriers in the Kisumu area have slowed the increase. Severe disease was observed in southern Nyanza, however, suggesting that the virulent form of cassava mosaic virus associated with the CMD pandemic had 'crossed' from northern Nyanza. Severe CMD was observed in the area of Tanzania bordering Uganda for the first time in September 1998. Subsequent surveys demonstrated an approximately 80km southward expansion of the CMD pandemic from just north of the Uganda-Tanzania border into Bukoba District, Tanzania.

Stakeholders meetings were held in Kyotera, Uganda and in Mwanza, Tanzania. In the meetings an introduction was made to CMD, the pandemic and potential control options, and the workplan of the OFDA CMD Project was discussed and refined.

300 bags of mosaic resistant cassava, variety SS4, were obtained free of charge from the IITA-NARO PL-480 Cassava Project and were delivered to Project partners in Rakai and Masaka Districts, Uganda, for multiplication. These were used to plant the targeted 15ha in each of the Districts. Crop establishment was acceptable although the sprouting percentage was reduced because of an unusually dry period during November. 15 varieties were multiplied using rapid multiplication techniques at Ukiriguru, Mwanza, Tanzania, for subsequent distribution to the currently pandemic affected Kagera Region and the threatened Mara Region. One variety with known CMD resistance, TMS 4(2)1425, has already passed through on-farm trials and was targeted for immediate multiplication in Bukoba District of Kagera Region. Poor rainfall prevented the planting of multiplication plots in western Kenya, but a demonstration plot was established in Siaya District for farmer training in CMD and its management.

IITA and its partner national programmes have developed linkages with more than 15 partners for the implementation of the Project. Significant time and financial commitments have been made by many of these partners which have ensured that resources available to the Project have achieved more than might otherwise have been possible.

Training on CMD and its management was provided through two stakeholder workshops, specialised training meetings for 78 field workers and extensionists in Rakai and Masaka Districts and for three Project scientists through attending a regional CMD workshop.

**Project Purpose:** To boost production of cassava in Uganda, Kenya and Tanzania and enhance both short and longer term food security, through the implementation of an emergency programme to multiply and disseminate mosaic resistant cassava.

## **Project Activities:**

1. **Monitoring and Diagnostics:** Conduct focused surveys in south-western Uganda, western Kenya and north-western Tanzania to provide detailed distribution maps of cassava mosaic geminiviruses (CMGs) in the Project target areas, and baseline data for Subsequent impact analysis.
2. **Multiplication:** Multiply and distribute in collaboration with Project partners, elite CMD resistant materials.
3. **Germplasm diversification:** Increase the range of cassava materials available to farmers in areas targeted by the project thereby reducing future risk of production collapse.
4. **Stakeholder linkages:** Identify and strengthen links between key stakeholders with roles in enhancing cassava production in target areas.
5. **Farmer training:** Develop producer skills in identification and management of cassava pests and diseases with special focus on CMD, in addition to basic production and multiplication skills.

## **Background**

An epidemic of unusually severe cassava mosaic disease (CMD) has, since the late 1980s, spread throughout much of Uganda, effectively eliminating cassava production across large swathes of the country leading to food insecurity and localised famine. From 1995, the epidemic has become a regional concern with movements having been recorded into Kenya (1995) and Tanzania (1998) and reports of severe CMD received from Sudan and the Democratic Republic of Congo. Diagnostic surveys conducted within the framework of the Whitefly IPM Project of the Systemwide-Programme for Integrated Pest Management (SP-IPM) provided an indication of zones within the region in which the epidemic of pandemic was currently spreading and zones likely to be affected within the next one to three years. A concept note was developed in early 1998 for the project 'Emergency Programme to Combat the Cassava Mosaic Disease Pandemic in East Africa' which aimed to use the results of the Whitefly IPM Project surveys to target CMD control efforts in parts of the East African region most threatened by the CMD pandemic. This was Submitted to the Office for Foreign Disaster Assistance (OFDA) of the United States Agency for International Development (USAID) in April and approved for funding in the following month. Funds were received at IITA in September and project activities began in October. This report describes progress made in the first quarter of activities i.e. October-December 1998.

# 1. Monitoring and Diagnostics

Surveys have been conducted in western Kenya and the Kagera Region of north-western Tanzania. The key objective of these two initiatives was to establish the current status of CMD in areas as yet unaffected by the pandemic yet bordering the most recently affected areas. The Tanzania Root and Tuber Crops Programme (TRTCP) also did an additional, more detailed survey of Bukoba District, Kagera Region, the report of which will be included in the proceedings of the Tanzanian stakeholders workshop.

## 1. Western Kenya – November 16-20

Records were taken and CMD-diseased samples collected from 57 locations in Western (22) and Nyanza (35) Provinces. Data recorded included CMD incidence, severity and infection type (cutting or whitefly-borne). Estimates of incidence and severity were made by scoring 30 plants per location but the severity score was a single overall estimate of the severity of symptoms in diseased plants. Leaf samples were collected from two or three plants with contrasting symptoms. Results are illustrated in **Figs. 1 and 2**. As noted in earlier similar surveys, there was a clear contrast between cassava in Western Province and the northern part of Nyanza Province, where infection was almost total and symptoms severe, and southern Nyanza, where few plants were diseased in most fields and symptoms were typically either mild or moderate. The modest change in the situation as compared with a September 1997 survey seems to confirm the view that the part of Lake Victoria separating northern from southern Nyanza and the extensive Kano plain in the Kisumu area where almost no cassava is grown, are slowing the continued southwards expansion of the pandemic. However, a key aspect of the survey was the verification of the presence/absence of any newly infected plants with severe symptoms in the southern Nyanza area. Symptoms of this type were observed at a number of locations in this area, two along the Kendu Bay-Homa Bay road, one south-west of Homa Bay on the road to Mbita Point and two near to the town of Migori near to the Tanzania border. Symptoms observed on plants along the Kendu Bay-Homa Bay in particular suggested the occurrence of the Uganda Variant form of cassava mosaic virus, which is associated with the pandemic. In order to confirm this, samples collected were tested using enzyme-linked immunosorbent assay (ELISA) and DNA was extracted for subsequent polymerase chain reaction-based diagnostic tests at ESARC. ELISA testing was completed, but PCR analysis remains incomplete. This will be completed before the end of the second quarter of the Project.

The overall assessment of the situation in western Kenya is that whilst the situation remains grave in most of Western Province and the northern part of Nyanza Province, expansion of the pandemic over the last year has been modest. A rough approximation of the newly affected area is provided in **Fig. 3**. The unconfirmed suggestion, however, that the severe virus form associated with the pandemic has crossed the 'gulf' of Lake Victoria separating northern from southern Nyanza, does however mean that the initiation of multiplication activities in southern Nyanza may now be warranted. ONFARM and the Kenya Agricultural Research Institute, the two key partners in the co-ordination of Kenya based Project activities, will therefore convene a stakeholders' meeting in southern Nyanza between January and March to develop

plans for this multiplication. This is discussed in more detail in the implementation plan of ONFARM provided as **Annex 1**.

## **2. Uganda – September 25, 1998**

The Whitefly IPM Project survey of whiteflies and cassava mosaic which was implemented in Uganda in November/December 1997 in 12 Districts of Uganda, including Rakai (see **Fig. 3**), showed that the pandemic ‘front’ was roughly 30km from the border with Tanzania to the south. This finding was confirmed by a subsequent assessment made during the course of road travel from Rakai to the Kagera Region of Tanzania in January of the following year. During a visit made to the Rakai-Kagera border on September 25 of 1998, however, it was apparent that severe disease was present at and just over the border into Tanzania. This constituted the first record of the pandemic’s arrival in Tanzania.

A thorough monitoring and diagnostic survey will be done in Rakai and Masaka Districts in the second quarter of the Project (February 1999).

## **3. Tanzania – November 23-27**

Observations were made of cassava fields along the route during the course of travel from Rakai to Bukoba whilst on the way to the Tanzanian stakeholders’ meeting held at Ukiriguru Agricultural Research Institute, Mwanza. Evidence of severe CMD was seen all the way to the Kagera River, just to the north of Bukoba. This suggests that the pandemic has expanded southwards a distance of approximately 80km during the course of 1998, significantly more than the typical annual expansion rate of 20-30 km recorded from Uganda. Whilst cassava is not the principal staple food in the affected part of Bukoba District, this is nevertheless an alarming development, and as a consequence urgent measures were proposed to address the situation at the stakeholders’ meeting. A rough estimate of the area affected by the pandemic in 1998 in Tanzania is given in **Fig. 3**.

Casual observations made of cassava along the Mwanza-Sirari (Kenya border) route suggested little change in the general CMD situation. There was no evidence of severe pandemic CMD and no evidence for the expansion of an area of relatively high CMD incidence, rapid spread and moderately severe symptoms in the Bunda and Musoma areas of Mara Region.

Systematic monitoring and diagnostic surveys will be conducted in both Kagera and Mara regions during the second quarter of the Project (as outlined in the implementation plan in **Annex 2**).

## 2. Multiplication

### UGANDA

#### *i) Background*

The central tactic used in controlling the effects of the CMD pandemic in Uganda has been the deployment of resistant varieties. Whilst building up a population of resistant cassava plants has taken a number of years, the approach has met with considerable success, and in eastern Uganda in particular resistant varieties have had a major impact on food security. Although demand for resistant varieties remains high in much of Uganda and availability is therefore limited, a number of these varieties can be obtained either from research institutions or from farmers' fields.

#### *ii) Strategy*

Key co-ordinating partners identified are the National Cassava Programme (NCP) and the International Foundation for Co-operative Development (IFCD). The National Cassava Programme (of the National Agricultural Research Organisation – NARO) in collaboration with IITA is currently implementing a major project for the multiplication of mosaic-resistant cassava in 6 Districts of Uganda (Masindi, Luwero, Mukono, Iganga, Kamuli and Tororo), being funded by the Food Security Fund of the PL –480 Programme administered by USAID. Whilst the project has the long term aim of providing farmers with a wide diversity of CMD resistant varieties, the initial efforts are focusing on the local selection SS4. IFCD is also funded by PL-480, and it was therefore considered appropriate that planting material multiplied by the IITA/NARO cassava project should be provided free of charge to the OFDA Project target Districts of Rakai and Masaka, in which IFCD operates. IFCD together with the District Agricultural Offices of Rakai and Masaka are working together with ten partner NGOs and CBOs in multiplication activities. The details of the implementation plan and progress to date are described in **Annexes 3 and 4** respectively. Whilst an unseasonal extended dry period during November has reduced the sprouting percentage of cassava planted for multiplication, the target hectareage has already been achieved and should be surpassed during the main planting season in March-May.

### KENYA

#### *i) Background*

In Kenya, whilst the pandemic first 'moved into' Western Province from Uganda in 1995, it was not until the end of 1997 that the first major effort to multiply resistant materials was initiated. This was co-ordinated by the Eastern Africa Root Crops Research Network (EARRNET) with the local partners KARI and ONFARM. As a result of the unavailability of varieties in Kenya with strong resistance to CMD, it was necessary to develop an open quarantine station on the Kenya/Uganda border through which CMD resistant varieties from Uganda (SS4 and TMS 30572) could be introduced. The 1-acre each of TMS 30572 and SS4 planted at the open quarantine station towards the end of 1997 forms the basis of current multiplication efforts. By May 1998, much of this material had been harvested and used to plant 11.3 acres of

primary multiplication sites. Whilst good resistant materials were therefore present in western Kenya at the outset of this Project, quantities were extremely limiting.

*ii) Strategy*

Discussions were held during the EARRNET Steering Committee meeting in October 1998 with Drs. Jim Whyte (EARRNET), Moses Onim (ONFARM) and Mr. Joseph Kamau (KARI), on the modalities of the implementation of the OFDA Project in western Kenya. It was agreed that this Project should augment the activities of the operational Gatsby Project and utilise the same 'system' developed during the Gatsby Project Stakeholders' meeting based on rapid multiplication techniques and primary, secondary and tertiary multiplication centres. These ideas were further refined during the visits to ONFARM and KARI, Kakamega made in November 1998 and the implementation proposals developed by Dr. Onim, and provided in **Annex 1** reflect these refinements. Unfortunately, due to the prolonged dry spell during November, which affected much of the Lake Victoria Basin region of East Africa, it was not possible to plant in 1998. Key elements of OFDA Project activities in western Kenya will therefore be initiated in early 1999 and include a small stakeholders' meeting in southern Nyanza, establishment of multiplication sites in southern Nyanza and the use of demonstration plots of resistant and local susceptible varieties in Siaya District, northern Nyanza for farmer training.

## TANZANIA

*i) Background*

In Tanzania, the first report of pandemic CMD was made during the course of initial activities of this Project in September 1998. In the years prior to this, however, a major programme of multiplication of 'improved' cassava varieties had been sponsored by the International Fund for Agricultural Development (IFAD), most prominently in Mara Region. Varieties multiplied have been locally evaluated for CMD resistance, but it is unclear what their response will be to the severe CMD associated with the pandemic. The Tanzanian Root and Tuber Crops Programme does, however, have very small quantities of IITA-derived material which has been demonstrated in Uganda to have good CMD resistance. Most notable of these is TMS 4(2)1425. Initial multiplication efforts in Tanzania will therefore have to focus on the rapid multiplication of varieties of known resistance and the evaluation of the locally evaluated material currently being multiplied.

*ii) Strategy*

The principal OFDA Project partner in Tanzania is TRTCP. The implementation of the multiplication activities of the Project was discussed at length during the stakeholders' meeting held at Ukiriguru on November 25. A summary of the implementation plan developed is attached as **Annex 2**. Small quantities of 15 improved varieties, developed with support from the Southern Africa Regional Root Crops Research Network (SARRNET), are currently being rapidly multiplied at an irrigated site near to Ukiriguru. These include the following:

TMS 30337	TMS 30572	Msitu Zanzibar
TMS 4(2)1425	TMS 35057	Aipin Valenca
TMS 60142	TMS 30001	Mulundi/5

TMS 81983  
TMS 42029

83/10762(6)  
9057(2)

Lwakitangaza  
106

4(2)1425 will initially be targeted for multiplication in the pandemic-affected Bukoba District, whilst the other varieties will first be evaluated in the same area in order to assess both CMD resistance and farmer acceptability prior to wider multiplication. Given the current extremely limited quantities of planting material of varieties known to have good CMD resistance, a key element of the plan will be the establishment of an open quarantine arrangement on the Uganda/Tanzania border, to facilitate the introduction of resistant Ugandan varieties into areas already affected by the pandemic (Bukoba District). A full copy of the provisional implementation plan will be provided together with the hard copy of this report. The proceedings of the stakeholders' workshop will be completed in the second quarter of the Project.

### **3. Germplasm Diversification**

Restricted availability of planting material with sufficient resistance to CMD is such that initially a few varieties will make up the greater part of material multiplied. However, in the second quarter of the Project, newly developed varieties superior to those currently being multiplied will be provided to Project partners in Rakai and Masaka Districts for demonstration plots. In Tanzania, as described earlier, major multiplication efforts are on-going with a wide range of materials yet to be tested under pandemic conditions. Since some of these are derived from CMD resistant parent stock at IITA, it is likely that a number will perform well in evaluation trials in the pandemic-affected zone of Bukoba District and will be suitable for widespread multiplication, thereby enhancing the genetic diversity of productive cassava in the region.

### **4. Stakeholder Linkages**

One of the strengths of the Project to date has been the wide range of stakeholders involved in the formulation, modification and implementation of Project activities. These are summarised for the region and the three countries as follows:

#### **Region**

Co-ordinating partners:

IITA-ESARC  
EARRNET (the Eastern Africa Root Crops  
Research Network)  
SARRNET (the Southern Africa Root Crops  
Research Network)

#### **Uganda**

Stakeholders' meeting:

September 25

Co-ordinating partners:

NCP of NARO and IFCD

Rakai partners:

Rakai District Agricultural Office  
Lutheran World Federation/RACA  
Concern Worldwide

International Care and Relief  
Orphans Community-Based Organisation  
Masaka Diocesan Development Organisation  
Kitovu Mobile  
Women's Enterprise Association of Rakai  
Kabula Women's Empowerment in Agri. Project

Masaka partners: Masaka District Agricultural Office  
Masaka Diocesan Development Organisation  
Kitovu Mobile  
World Vision  
Redd Barna

### **Tanzania**

Stakeholders' workshop November 25  
Co-ordinating partner TRTCP  
Mara partners: Mara Region Farmers' Initiative Programme  
CARE – Magu District Livelihood Security Programme  
District Councils  
Kagera partners: Kagera Environment Management Project  
Bukoba District Rural Development Programme  
District Councils

### **Kenya**

Stakeholders' workshop Proposed for Jan-March 1999, southern Nyanza  
Co-ordinating partners KARI and ONFARM  
Local partners Provisionally: CARE-Kenya, C-MAD and extension services. To be expanded/confirmed during the stakeholders' workshop

A wide range of partners has therefore been identified, new linkages established and old ones strengthened.

## **5. Training**

The principal objectives of the training component of the Project are to strengthen knowledge and understanding of CMD and approaches to control in areas already affected by the pandemic and to raise awareness of the likely effects of severe CMD in threatened areas. Three approaches to training were used in the reporting quarter.

### **1. Stakeholder training**

- Within the framework of the stakeholder meetings (Uganda and Tanzania)
- Principally for representatives of partner organisations
- Focused on the following topics
  1. What is CMD and how is it spread
  2. What is unusual about the CMD pandemic

3. The evolution of the CMD pandemic from localised outbreak in Uganda to a threat to regional food security
4. The history of control initiatives in Uganda and the wider region
5. The control approach of the OFDA CMD Project

## **2. Training workshops**

- So far only in Uganda (Rakai and Masaka Districts)
- Targeted at partner organisation field workers and extension officers
- Broad presentation of the major cassava pests/diseases and their control
- Introduction to rapid multiplication techniques
- Field visits for practical demonstration of pest/disease identification and control
- Trained 37 participants from 11 organisations in Rakai
- Trained 41 participants from 6 organisations in Masaka
- Reported in detail in **Annex 5**

## **3. Training of scientists**

- Geoffrey Tusiime and Peter Sseruwagi of IITA and Joseph Ndunguru of TRTCP attended a regional CMD workshop from December 7-9 entitled 'CMD management in smallholder farming systems in East Africa' organised jointly by NARO, Uganda and the Natural Resources Institute, UK. Peter presented a paper on survey methodology.
- Joseph Ndunguru, employed by TRTCP through the OFDA CMD Project, was trained at IITA-ESARC, Namulonge, Uganda, in cassava mosaic virus diagnostic techniques, over a period of two weeks from November 30-December 14. He will have an important role in supervising Project activities in Kagera Region.

Key features of training in the second quarter of the Project will include the development and distribution of leaflets to raise awareness of CMD, the threat of the pandemic and potential control options. Also included will be the provision of training at the western Kenya meeting and the wider use of the media in both Tanzania and Kenya to highlight the problem and plans to address it.

Fig. 1. CMD incidence in Western and Nyanza Provinces, Kenya, November 1998

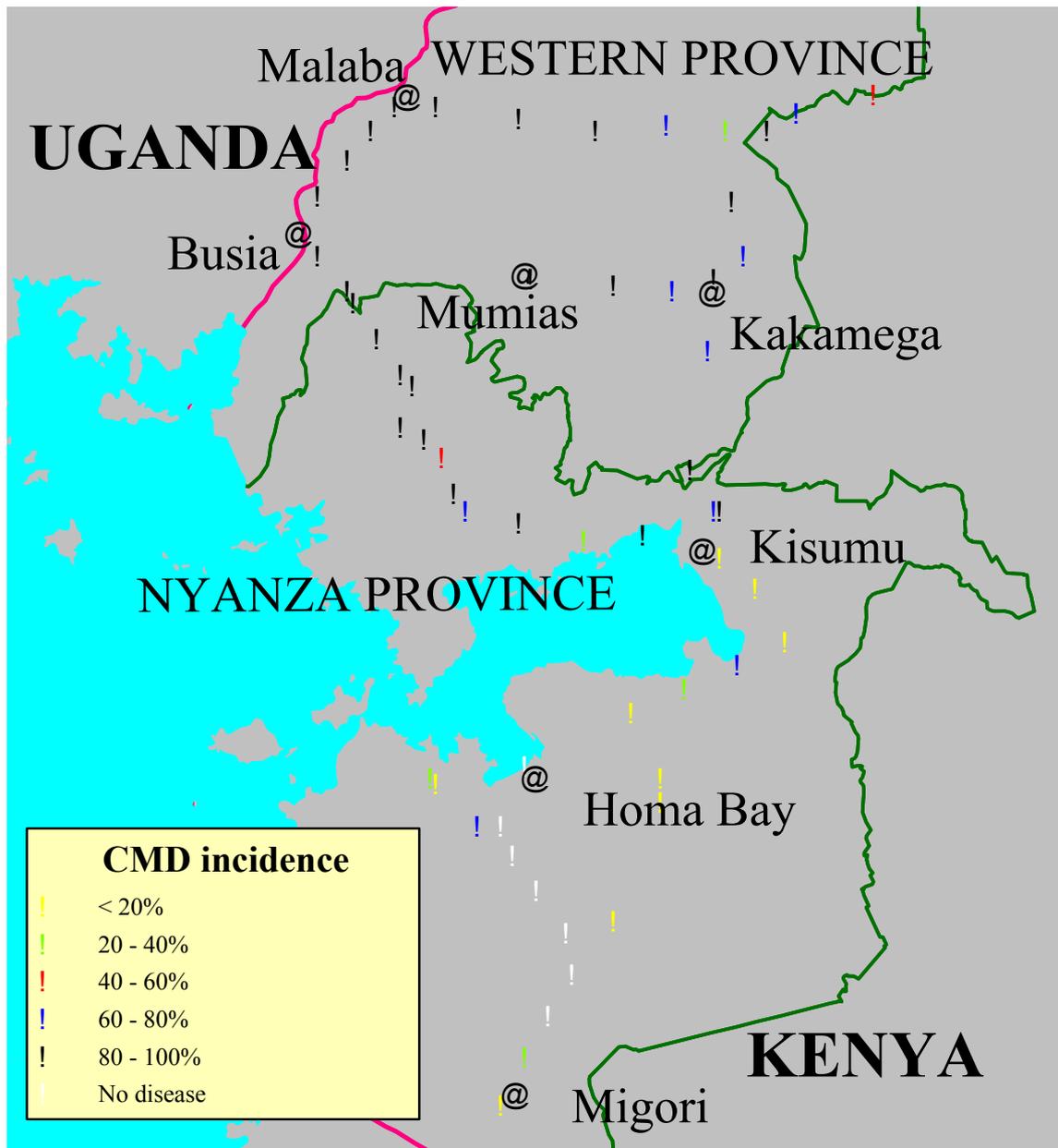


Fig. 2. CMD severity in Western and Nyanza Provinces, Kenya, November 1998

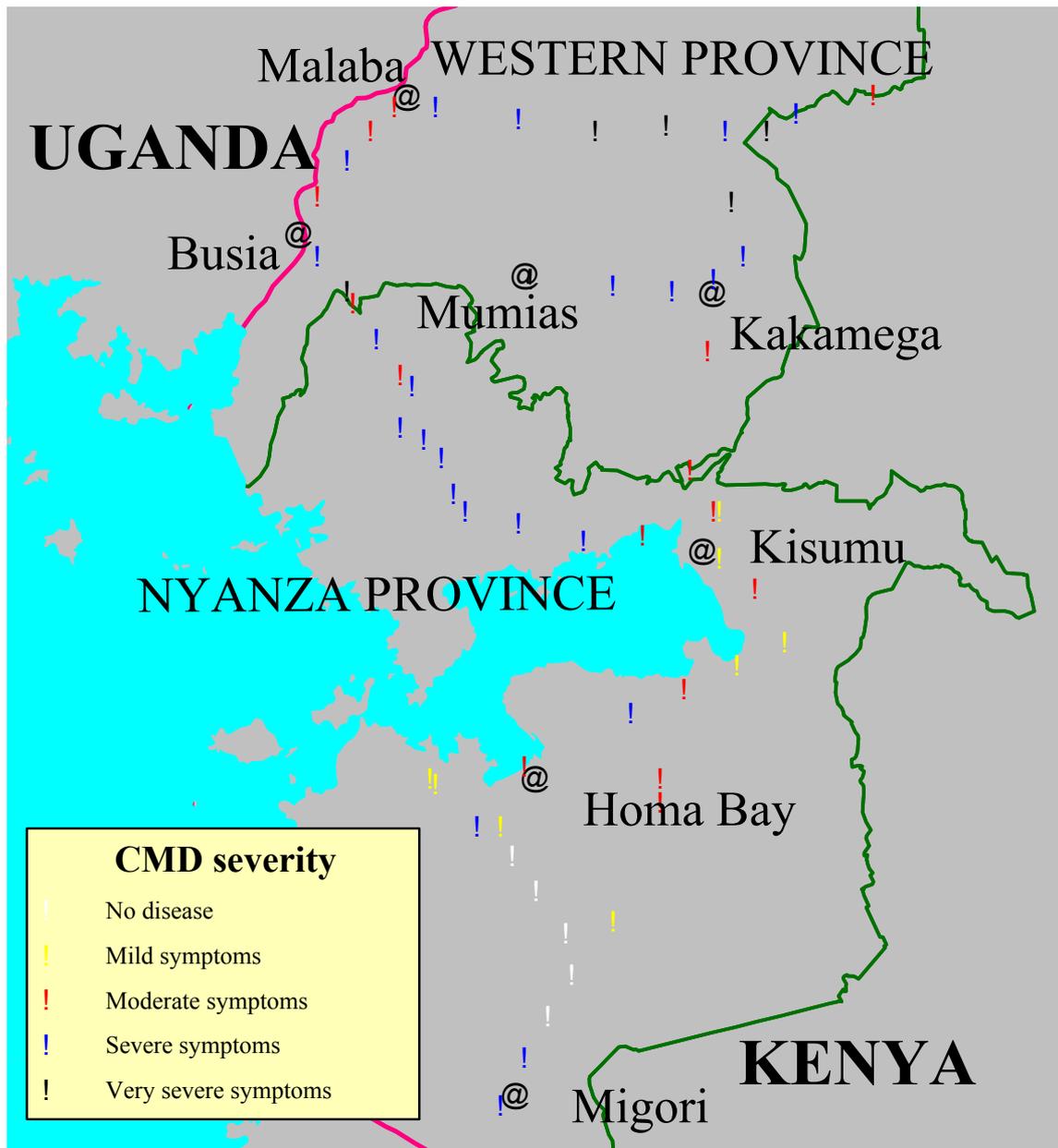
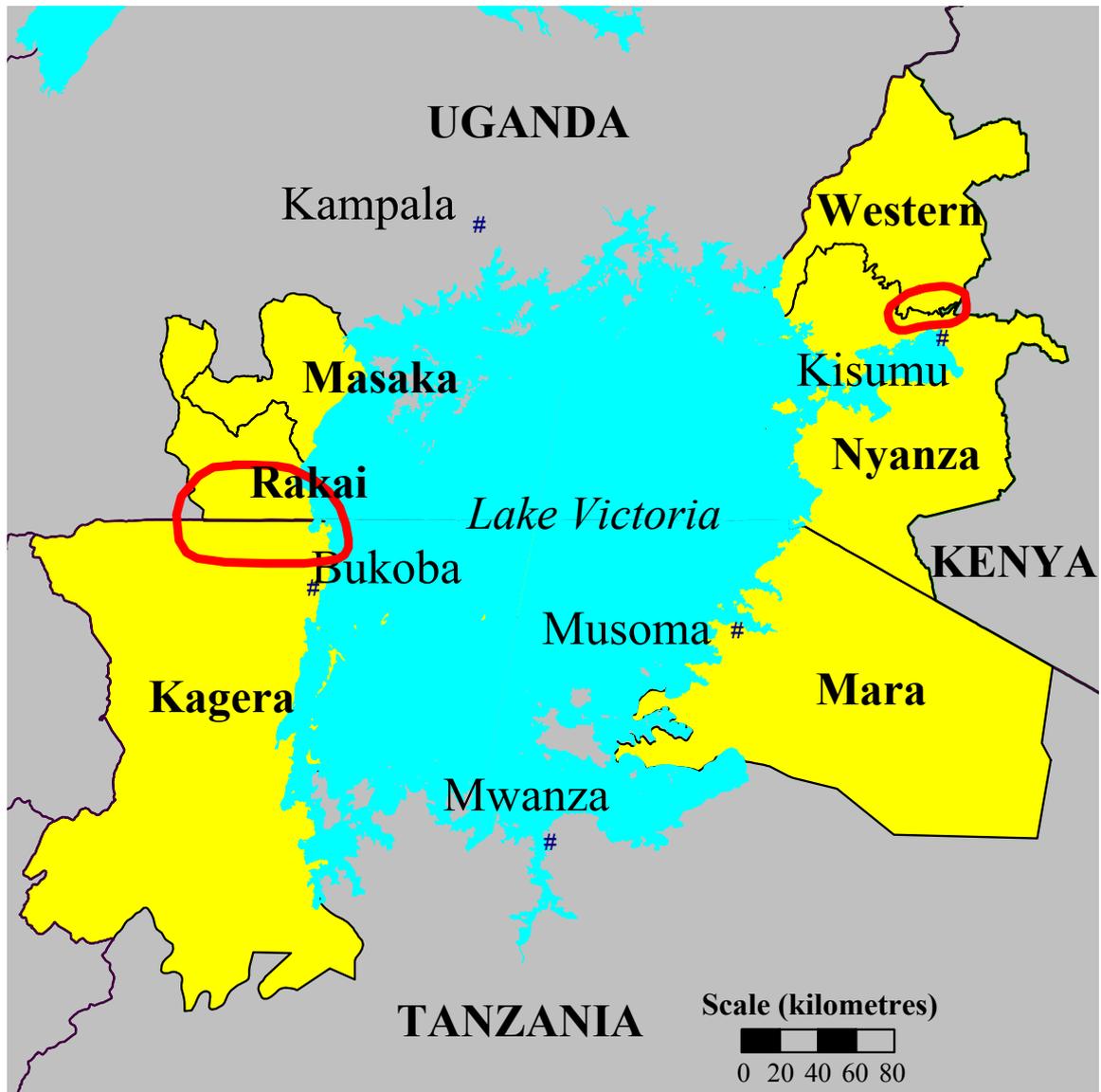


Fig. 3. Target areas for Project activities in Uganda, Kenya and Tanzania



Zones circled in red are those newly affected by the CMD pandemic during 1998 in western Kenya and north-western Tanzania

## **ANNEX 1 IMPLEMENTATION OF THE OFDA CMD PROJECT IN WESTERN KENYA**

**J.F.M. Onim  
ONFARM**

**December 1998**

### **Introduction**

This emergency programme is designed to combat the Cassava Mosaic Disease (CMD) pandemic in East Africa. The emergency programme has several components, which will be implemented in East Africa. These include monitoring and diagnostics of CMD, multiplication and distribution of cassava varieties that are resistant/tolerant to CMD, germplasm diversification, stakeholders' linkages and farmer training. The programme will operate in Uganda, Kenya and Tanzania through several partners. The partners are the International Institute of Tropical Agriculture (IITA), East African Regional Root Crops Research Network (EARRNET), Kenya Agricultural Research Institute (KARI), Tanzania Root and Tuber Crops Programme (TRTCP) and National Agricultural Research Organisation (NARO), Uganda. In each country, the programme is implemented through the various national agricultural research, extension in government and non-governmental organisations (NGOs) and community based organisations (CBOs). In western Kenya, this programme collaborates with several NGOs and CBOs. Many of the collaborating NGOs and CBOs are operating under the umbrella of a Winrock International Institute for Agricultural Development called ONFARM. ONFARM is managed and co-ordinated by Lagrotech Consultants and Winrock International, whose offices are based in Kisumu in western Kenya.

The collaborating NGOs and CBOs under ONFARM include CARE-Kenya, World Vision, C-MAD, KENGO, ICRAF, GRAIL Centre (an agricultural development wing of the Catholic Church, Diocese of Kisumu), Anglican Church, Diocese of Maseno West -- Mothers Unions), Christian Children's Fund (CCF), CISS, Sigoti Agricultural College, and Sacred Africa. ONFARM also collaborates with KARI and extension departments of the Ministries of Agriculture and Natural Resources (Forestry Extension). The Districts where these NGOs operate are summarised in Table 1.

### *Methodology*

This component of the programme will only cover multiplication of improved cassava varieties in western Kenya, and training of extension field staff and farmers on CMD and cassava utilisation. Improved cassava varieties that are resistant/tolerant to CMD will be obtained from research institutions (IITA, NARO, and KARI), and multiplied in the CMD affected Districts through collaborating NGOs and CBOs. These multiplication fields will be called mother gardens, and they should at least be over 3 acres in size. The improved varieties will be multiplied on land belonging to the various NGOs, CBOs and farmers' groups. The groups will make sure that they weed the fields and protect them in close collaboration with programme implementers (IITA and ONFARM). Before these groups are selected for multiplication, a stakeholders' meeting will be held with each group and the purpose for cassava multiplication well explained to them. If there is need for financial support for any of the groups, the programme implementers will review the

case as need may be. The groups must be willing to share the materials among their members in collaboration with programme implementers and carefully document quantities of materials distributed, areas planted and names of those who received them. This data must be collected and collated by ONFARM extension field staff of collaborating NGOs and CBOs.

*Table 1. NGOs which collaborate with ONFARM in western Kenya*

<b>Collaborating NGO</b>	<b>Districts</b>
ONFARM	Kisumu, Nyando, Vihiga, Kakamega, Siaya, Bondo, Rachuonyo, Migori and Homa-Bay
CARE-Kenya	Homa-Bay, Migori, Rachuonyo, Suba
World Vision	Kisumu, Nyando, Bondo and Siaya
C-MAD	Migori and Homa-Bay
KENGO	Kisumu, Nyando, Bondo, Siaya, Migori, Homa-Bay, Rachuonyo, and Suba
ICRAF	All Districts in Kenya
GRAIL Centre	Kisumu, Nyando, Siaya and Bondo
Anglican Church (Mothers' Unions -- 54 Unions)	Siaya and Bondo
CCF	Siaya and Bondo
CISS	Kisumu, Siaya and Bondo
Sigoti Agric. College	Trains students from all over the country
Sacred Africa	Bungoma

All the field data will be collected and summarised by the ONFARM East African Co-ordinator, Dr. J.F. Moses Onim or his assistant, who will submit this report to Dr. James Legg at an agreed interval.

The extension field staff will also be monitoring and reporting disease incidence in their respective areas on a monthly basis. Such reports will be submitted to the ONFARM monthly meetings.

#### *Variety Demonstration Plots.*

Several demonstration plots will be established in the Districts for purposes of demonstrating to the farmers the impact of CMD and how the improved varieties

perform under disease pressure. The plots will be 5m X 5m, with spacing of 1m X 1m between plants, with 2m paths between plots. The varieties and treatments will include: CMD resistant/tolerant varieties (TMS 30572, SS4, TMS 30337, and TMS 60142 - where available). Control plots will be planted with materials from any available local and popular variety and the cuttings will be taken from clean CMD-free plants and clearly CMD-diseased plants. The demonstration plots will be bordered all round with two rows of a susceptible local variety with the cuttings coming from CMD-free plants. The number of diseased plants in each plot will be recorded monthly and reported in the monthly ONFARM meetings.

These demonstration plots will be used by ONFARM, extension field staff of the Ministry of Agriculture, collaborating NGOs and CBOs for training farmers on various aspects of CMD control and management. Cassava utilisation training courses will also be conducted around these demonstration facilities for farmers and staff of Home Economics of the Ministry of Agriculture. Records of all extension staff and farmers trained will be recorded and reported.

### **Planned Activities.**

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Nov. 1998	Cash (US \$ 10,000.00) transferred to ONFARM Bank Account in Kisumu.
Nov. 1998	The first variety demonstration established in Ugunja, Siaya District.
Dec.7, 1998	Attend the International CMD Management Workshop in Jinja Uganda.
Jan.-Mar.1999	Hold stakeholders meetings with collaborating NGOs and CBOs in various Districts in western Kenya and assess needs of each group.
Mar-Apr. 1999	Establish mother gardens of improved cassava varieties in the affected Districts.
May-Aug.1999	Conduct extension and farmers training courses on CMD and cassava utilisation at the demonstration sites in the Districts.
Sep-Nov 1999	Monitor progress on the mother gardens. Start initial distribution of improved cassava varieties to the group members of collaborating NGOs and CBOs.
Dec. 1999	Compile a comprehensive report on the progress of the first year.

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**ANNEX 2 IMPLEMENTATION OF OFDA CMD PROJECT IN TANZANIA – SUMMARY PLAN FROM STAKEHOLDERS WORKSHOP**

**TANZANIA ROOT AND TUBER CROPS PROGRAMME**

**NOVEMBER 1998**

**Implementation plan – Multiplication and germplasm evaluation**

<b>Solution</b>	<b>Activity</b>	<b>Actor</b>	<b>Location</b>	<b>Timeframe</b>	<b>Source of funds</b>
1. Materials made available for multiplication	Multiplication at FECs in Bukoba. 0.1 ha 4(2)1425	BDRDP	Kabirizi, Kyakarabwe Kyema, Mushozi	Jan. 1999	BDC
	Multiplication at ARI Ukiriguru for Mara, 0.3ha 4(2)1425	ARI Ukiriguru	Ukiriguru	Jan. 1999	MARAFIP, IITA-ESARC, SARNET
2. Farmers verification of resistant varieties	Testing for acceptability in Mara. Local, 4(2)1425 and 30572 cvs.	DED, Mara, Musoma	Musoma Rural	Jan. 1999	MARAFIP
3. Identification of resistant varieties	Testing of resistant varieties in Miseny Division	ARI Maruku and Ukiriguru (proposals to be developed)	Misenye Division	Jan. 1999	BDRDP, KAEMP
4. Introduce resistant varieties from Uganda through open quarantine	Establish open quarantine facility at Mtukula	Plant Protection, Tanzania, ARIs	Mtukula	Dec. 1998	IITA-ESARC
	Obtain resistant material from Uganda. 2ha SS4, 2ha Migyera, small quantities other varieties	IITA-ESARC, NARO	Uganda	Dec. 1998	IITA-ESARC
	Plant resistant varieties at Mtukula	ARIs, DALDOs	Mtukula	Dec. 1998	IITA-ESARC
5. Distribution of resistant materials to farmers	Multiply at Division and Ward level (long term aim)	BDRDP, NGOs	Divisions, wards	2000	District Councils
	Distribute to farmers	BDRDP, NGOs	Division, wards	2001	District Councils
6. Training	Training of extension and NGOs in rapid multiplication techniques	IITA, ARIs	Ukiriguru, Maruku	Mar. 1999	IITA-ESARC
	Training of farmers in rapid multiplication techniques	ARIs, Extension	Kagera and Mara	Aug. 1999	IITA-ESARC, District Councils

## Implementation plan - CMD Monitoring and Diagnostics

<b>Solution</b>	<b>Activity</b>	<b>Actor</b>	<b>Location</b>	<b>Timeframe</b>	<b>Source of funds</b>
1. Monitoring and evaluation surveys – baseline and impact assessment	Focused surveys in epidemic affected and immediately threatened zones	ARIs, Districts, IITA-ESARC	Bukoba, Karagwe, Tarime and Musoma R	Jan. 1999, Aug. 1999	DRDPs, KAEMP, MARAFIP and IITA-ESARC
	Analysis of data	ARIs, IITA-ESARC	Ukiriguru, Namulonge	Feb. 1999, Sept. 1999	IITA-ESARC
	GIS mapping and forecasting	ARIs, IITA-ESARC	Ukiriguru, Namulonge	Feb. 1999, Sept. 1999	IITA-ESARC
	CMD assessment in multiplied resistant varieties	ARIs, Districts, IITA-ESARC	Bukoba, Karagwe, Tarime and Musoma R	Aug.-Sept. 1999	IITA-ESARC
2. Estimation of crop losses	Collection of production data	ARIs, Districts	Lake Zone	Dec. 1998 to Jan. 1999	IITA-ESARC
	Yield assessment within evaluation trials	ARIs, Districts	Misenye Division	Jan. 2000	BDRDP, KAEMP
3. Training	Raising awareness through mass media	ARIs, Extension	Lake Zone	Dec. 1998 to Sep. 1999	IITA-ESARC
	Production and distribution of extension leaflets and posters	IITA-ESARC, MARAFIP	Namulonge, Lake Zone	Dec. 1998 to Sep. 1999	IITA-ESARC
	Farmer/extension/NGOs training	IITA, ARIs	Bukoba, Musoma	Feb.-Sept. 1999	IITA-ESARC

## Implementation plan – Processing and Commercialisation

<b>Solution</b>	<b>Activity</b>	<b>Actor</b>	<b>Location</b>	<b>Timeframe</b>	
1. Diversification of value-added cassava products	Introduction of new processing techniques	ARIs, IITA-ESARC	Namulonge, Ukiriguru	1999	ARIs, KAEMP, MARAFIP, CARE-Magu, PLAN, ACCORD
	Testing and evaluation of new techniques	ARIs, IITA-ESARC, KAEMP, DRDPs, MARAFIP, CARE-Magu, PLAN and ACCORD	Lake Zone	1999	ARIs, KAEMP, MARAFIP, CARE-Magu, PLAN, ACCORD
	Produce and distribute training materials	ARIs, IITA-ESARC	Namulonge, Ukiriguru	1999	ARIs, KAEMP, MARAFIP, CARE-Magu, PLAN, ACCORD
	Training farmers/stakeholders on usage of new techniques	ARIs, IITA-ESARC	Lake Zone	1999	ARIs, KAEMP, MARAFIP, CARE-Magu, PLAN, ACCORD
2. Increase market opportunities for cassava products	Market research	ARIs, Districts	Lake Zone	1999-2000	CO-Lake, KAEMP, MARAFIP, BDRDP
	Establishment of pilot processing sites	ARIs, KAEMP, BDRDP	Lake Zone	1999-2000	CO-Lake, KAEMP, MARAFIP, BDRDP
	Develop market linkages	ARIs, extension	Lake Zone	1999-2000	CO-Lake, KAEMP, MARAFIP, BDRDP
	Organise exchange visits	ARIs, Districts	Lake Zone	1999-2000	CO-Lake, KAEMP, MARAFIP, BDRDP

CO-Lake – Client-Oriented Programme, Lake Zone

## **ANNEX 3 IMPLEMENTATION OF THE OFDA CMD PROJECT IN SOUTH-WESTERN UGANDA**

**J.M. Gilsenan**

**IRISH FOUNDATION FOR CO-OPERATIVE DEVELOPMENT**

**OCTOBER 1998**

### **Background**

The Irish Foundation for Co-operative Development (IFCD) has been working in Rakai District since 1994. During that time IFCD has been working with two distinct groups, namely: a) Potential Commercial Farmers, i.e. those farmers who are capable of producing a surplus of agricultural produce in a given growing season, whereby the excess may be made available for sale, and b) Vulnerable Households, i.e. those households that are less likely to produce a surplus, and are therefore likely to suffer a food shortage during the season.

Since February of 1998, IFCD has been a grantee under the PL480 - Food Security programme. This programme focuses on improving farming practices, in order to increase agricultural output for the area, thereby ensuring food security. As part of this programme, IFCD has undertaken to introduce mosaic resistant cassava to the area, as a suitable food security crop for those more vulnerable households.

A number of meetings were held in each District, to discuss the introduction of mosaic resistant cassava to the area. The initial meeting was held in Kyotera, Rakai, on the 25<sup>th</sup> of September 1998, and was attended by District Agricultural Officers (DAO's) for both Masaka and Rakai Districts, as well as other Rakai based partner Non Governmental Organisations (NGOs) participating in the PL480 programme. A second meeting was held in Masaka, on the 6<sup>th</sup> of October, to introduce the programme to possible partner NGOs operating in Masaka. Further meetings were held in Rakai (8<sup>th</sup> October) and Masaka (26<sup>th</sup> October) to formulate a suitable implementation plan for this component. The following is an outline of how the implementation will proceed.

### **Problem Statement**

CMD is at present placing the cassava population at risk in Masaka and Rakai Districts. Although there are mosaic resistant varieties of cassava available, there are insufficient quantities available to have a suitable impact on this situation. It is therefore necessary that, available planting materials be multiplied in order to distribute throughout the area.

In order to multiply sufficient quantities of planting materials for each District, it is necessary to ensure that the multipliers are suitably identified. In the past, the District authorities have taken responsibility for the multiplication of mosaic resistant cassava, however, this has proved to be very inefficient, and has achieved minimum impact at the ground level. Even in the event of efficient multiplication by the Districts, the problem of losing the tuber crop for that season remains.

IFCD therefore suggests that the most suitable means of multiplying this planting material is to introduce an element of income generation, and to utilise envisaged beneficiaries as the multipliers.

### **Implementation**

In their presentation to the meeting of 25<sup>th</sup> September, representatives of IITA/NARO intimated that the preferred method of multiplication was to initiate three 5-hectare sites around the target District. This idea was discussed and it was felt that the only means of employing this method was to use the District authorities as multiplying agents, as necessary resources would not be available elsewhere. DAO's in both Masaka and Rakai felt that this was not an efficient way to multiply enough planting material for both Districts, citing previous failed attempts by the District to multiply. This method also posed the problem of increased centralisation, which would make distribution of the planting materials on maturity difficult. It was therefore decided that this multiplication exercise should be disseminated throughout the District in order to achieve a maximum spread of planting materials in each District.

In order to reach target beneficiaries, IFCD utilises the existing network of NGOs in the area. These NGOs are a combination of foreign and local organisations that have been working with local communities/groups to combat the negative effects of poverty in the area. In Rakai, partner NGOs are operating in all 20 Sub-Counties. Partner NGOs in Masaka are operating in 12 selected Sub-Counties in southern Masaka. These Sub-Counties were nominated by the DAO for Masaka, as suitable target areas for this intervention.

Following a series of meetings in Rakai and Masaka, it has been agreed that each District will utilise both government and NGO structures to multiply planting materials. A maximum of 15 hectares (37 Acres) of planting materials has been allocated for each District. The breakdown for the responsibilities of multiplication for each District is as follows:

#### **Rakai District**

Rakai District Authority	3.8 hectares (9 acres)
Lutheran World Federation / Raca	1.6 hectares (4 acres)
Concern Worldwide	1.6 hectares (4 acres)
International Care and Relief (ICR)	1.6 hectares (4 acres)
Orphans Community Based Organisation (OCBO)	1.6 hectares (4 acres)
Masaka Diocesan Development Organisation (MADDO)	1.6 hectares (4 acres)
Kitovu Mobile	1.6 hectares (4 acres)
Women's Enterprise Association of Rakai (WEAR)	1.6 hectares (4 acres)

#### **Masaka District**

Masaka District Authority	5.4 hectares (13 acres)
World Vision	3.2 hectares (8 acres)
Masaka Diocesan development Organisation (MADDO)	2.4 hectares (6 acres)
Kitovu Mobile	2.4 hectares (6 acres)
Redd Barna	1.6 hectares (4 acres)

In Rakai, partner NGOs often overlap in target areas, with other NGOs in the District. For this reason, it is possible to have up to three (3) NGOs, working with different groups, in a given Sub-County. These partners are at present mobilising their groups for the exercise of multiplying planting material. The coverage offered by this network of NGOs extends to all 20 Sub-Counties in Rakai District. Due to these overlaps, it was decided that, rather than allocating specific Sub-Counties, each NGO would assume responsibility for a set area, with the remainder to be multiplied by the District authorities. In this way, maximum coverage of the District can be achieved. Where coverage in the District may be stretched, the District will then provide multiplied planting material for those areas.

In Masaka, this overlap does not happen, and as a result, it is possible to allocate specific Sub-Counties to each of the partner NGOs participating. Also, in order to achieve maximum coverage, it has been decided that 0.8 hectares (2 acres) will be multiplied in each of the 12 Sub-Counties. The NGOs and their specific target areas are as follows:

World Vision	Kabonera S/C Buwunga S/C Bukakata S/C Kingo S/C
MADDO	Ndagwe S/C Malongo S/C Bukulula S/C
Kitovu Mobile	Lwengo S/C Kisseka S/C Kyanamukaka S/C
Redd Barna	Kyazanga S/C Kalungu S/C

In order to introduce an element of income generation into the multiplication, it was also decided during the meetings that the multiplied materials at the end of the first year, should be distributed as follows:

- 40%, or 4 acres for each acre of planting material received (assuming multiplication rates of 10:1), will be returned to the implementing partner for redistribution.
- 40%, to be sold by the multipliers at prevailing commercial rates
- 20%, to remain with the multipliers for planting in their own plots

It was envisaged in this way that the 40% of cuttings to be returned, will be redistributed *gratis* to those ‘vulnerable’ families who are otherwise unable to purchase. The 40% for sale will be for those ‘non vulnerable’ families that can afford to buy planting materials. It is probable that these cuttings will be for sale at less than the prevailing rates, however, this can be expected, as the intended buyers are likely to be members of the same community. The remaining 20% will be left with the multipliers, in order that they can harvest and utilise the tuber crop. They will also have the option to therefore replant for further multiplication, in the following season.

## Assumptions

It is assumed that there will be a sufficient market for cassava cuttings that the multipliers may be able to sell. This assumption is supported by the ongoing interventions of IFCD.

IFCD is at present working, and will continue to work, with potential commercial farmer groups in both Districts. As part of our strategy, we will be promoting the use of processing to add value to primary crops. The area of cassava processing is one area that we will be encouraging our commercial groups to investigate, as its versatility has few parallels.

## Funding

After discussing with the DAOs of both Districts, it was felt that transparency was paramount in the handling of project funds. A meeting was held on the 3<sup>rd</sup> of November, at the IITA offices in Bugolobi, Kampala. At this meeting, it was decided that bank accounts would be set up in each District, in order to receive the available funding for the programme. The account for Rakai is to be set up with the Centenary Rural Development bank in Kyotera. The account is to be named “**OFDA Cassava Rakai**”, and will require joint signatories for any withdrawals. The signatories for the account will be the District Agricultural Officer (DAO) with the Programme Manager for IFCD.

For Masaka, the account will be called “**OFDA Cassava Masaka**”, and will also be operated by the joint signatories of the DAO and the IFCD Programme Manager.

Funding available for the multiplication programme is set at \$7,500 US dollars per District. It was decided that this should be allocated to partner NGOs at \$200 dollars per acre to be multiplied. The breakdown of funding is therefore as follows:

Masaka District Authority	\$2,600
Rakai District Authority	\$1,800
Kitovu Mobile	\$2,000
Masaka Diocesan Development Organisation (MADDO)	\$2,000
World Vision	\$1,600
Lutheran World Federation / Raca	\$800
Concern Worldwide	\$800
International Care and Relief (ICR)	\$800
Orphans Community Based Organisation (OCBO)	\$800
Women’s Enterprise Association of Rakai (WEAR)	\$800
Redd Barna	<u>\$800</u>
Total	\$14,800

The remaining \$200 is to be allocated to IFCD to cover miscellaneous costs incurred during the procurement and monitoring of the programme.

Each of the partner organisations will receive 50% of their total allocation initially. The remaining 50% will be forwarded, on condition of suitable progress in the multiplication of cassava.

## Monitoring

Although monitoring will be carried out on a regular basis by the partner NGOs, IFCD will undertake to carry out periodical assessments of multiplication work being carried out. The NGO liaison officer for IFCD, Mrs R Mayiga, as part of

her duties to monitor and report on partner NGO activities, will supply reports to the IFCD Programme Manager. These reports will be compiled and forwarded to IITA on a quarterly basis. These reports will fall due in November 1998, February, May and August 1999. A final report at the end of the multiplication exercise will be submitted to IITA in November 1999. These quarterly reports will be accompanied by a financial breakdown of expenditure for the period.

**ANNEX 4      PROGRESS REPORT OF THE OFDA CMD PROJECT IN  
SOUTH-WESTERN UGANDA**

**J.M. Gilsenan and R. Mayiga  
IRISH FOUNDATION FOR CO-OPERATIVE DEVELOPMENT**

**DECEMBER 1998**

**Introduction**

The Irish Foundation for Co-operative Development (IFCD) has been working in Rakai District since 1994. During that time IFCD has been working with two distinct groups, namely: a) Potential Commercial Farmers, i.e. farmers who are capable of producing a surplus of agricultural produce in a given growing season, whereby the excess may be made available for sale, and b) Vulnerable Households, i.e. those households that are less likely to produce a surplus, and are therefore likely to suffer a food shortage during the season.

IFCD has been working with these groups to assist in improving their traditional farming techniques, with a view to increasing output per hectare, thereby improving food security in the region. The programme is being replicated in Masaka District. IFCD has undertaken to introduce mosaic resistant cassava to both Districts, as a suitable food security crop for the more vulnerable households.

This is the first report furnished by IFCD to IITA on the implementation of multiplication programmes, for the introduction of mosaic resistant cassava to Rakai and Masaka Districts. Funding for this programme has been provided by the OFDA. Activities on this programme began in November 1998. Further reports will be forwarded on a quarterly basis.

The objective of this scheme is to multiply 15 hectares (37 acres), per District, of cassava planting materials, in order to produce sufficient planting materials for redistribution in the two target Districts of Rakai and Masaka.

**Implementation**

In order to multiply sufficient quantities of planting materials, it is necessary to ensure that potential multipliers are suitably identified. In the past, the District authorities have taken responsibility for the multiplication of mosaic resistant cassava, however, this has proved to be very inefficient, and has achieved minimum impact at the ground level. Even in the event of efficient multiplication by the Districts, the problem of losing the tuber crop for that season remains.

IFCD programmes have been working successfully with a network of partner organisations to reach vulnerable households. It was decided that a combination of governmental (District authorities) and non-governmental groups (NGOs) would be the most suitable means of multiplying this planting material.

Partner NGOs participating in the multiplication of planting materials have suggested utilising envisaged beneficiaries as multipliers. NGOs will take responsibility for supervising and assisting these multipliers. Through this approach, it

is hoped to introduce an element of income generation to the scheme. This approach has the added advantage of further dispersion of planting materials and techniques on a Sub-County level.

In each of the target Districts, the supplied planting material was divided between partners, who then distributed it to selected multipliers. IFCD's role is to act as co-ordinator and monitor of the multiplication exercise in each District.

### **Rakai District**

The partner groups, together with assigned areas for multiplication are:

Rakai District Authority	3.2 hectares (8 acres)
Lutheran World Federation / Raca	1.6 hectares (4 acres)
Concern Worldwide	1.6 hectares (4 acres)
International Care and Relief (ICR)	1.6 hectares (4 acres)
Orphans Community Based Organisation (OCBO)	1.6 hectares (4 acres)
Masaka Diocesan Development Organisation (MADDO) <sup>1</sup>	1.6 hectares (4 acres)
Kitovu Mobile <sup>2</sup>	1.2 hectares (3 acres)
Women's Enterprise Association of Rakai (WEAR)	1.6 hectares (4 acres)
Kabula Women's Empowerment in Agri. Project (KWEAP)	0.8 hectares (2 acres)

#### Rakai District Authority

There are 2 multiplication plots being administered by the Rakai District Authority. These are:

- 1) Proposed District Farm Institute, Kiwaguzi, Lwanda Sub-County, Kooki County, 6 acres
- 2) Kasaali Sub-County HQ, Kasaali Sub-County Kyotera County.

Person responsible for the daily management of these plots is John Waswa Kajunge.

- All cuttings have been planted in sufficiently isolated plots
- Visits carried out indicate approx. 60% germination. The low germination rates can be attributed to poor rainfall in the area.

#### RACA/LWF

There are 6 multiplication plots being administered by RACA/LWF. These are:

- 1) Bitabago- Lwanda Sub-County, Kooki County
- 2) Kiziba – Kyalulangira Sub-County, Kooki County
- 3) Kayonza- Kacheera Sub-County, Kabula County
- 4) Kyakajura- Mpumudde Sub-County, Kabula County
- 5) Wabusaana- Kinuuka Sub-County, Kabula County
- 6) Biwolobo- Lyantonde Sub-County, Kabula County.

People responsible for the daily management of these plots are Moses Mugabi/Margaret Tebeta, Boaz Kakumba/ Noelina Naluwuge, Amos Manderu/ Joyce Ndyabahika, George WEAR Katende/ Haruna Bbaale, Resty Sserunkuma/ Paul Kiwalabye and Amos Walusimbi/ Rore Nassamula respectively.

- All cuttings have been planted in sufficiently isolated plots.
- Observations indicate approx. 50% germination. Again these low germination rates can be attributed to poor rainfall.

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<sup>1</sup> MADDO are operating in both Districts and therefore have divided their areas across the two Districts

<sup>2</sup> Kitovu Mobile are operating in both Districts and have also divided their areas over the two Districts

### WEAR.

There are 2 multiplication plots being administered by WEAR. These are:

- 1) Mbuye, Lwanda Sub-County, Kooki County
- 2) Kakuza, Kalisizo Sub-County, Kyotera County.

People responsible for these plots are Jane Nalubiri for the Lwanda site and Sophia Kalyango for the Kakuza site.

- All cuttings have been planted in isolated plots,
- Germination rates have been estimated at approx. 60%.

### CONCERN

There is no specific number of plots. Reports indicate that intended plots for multiplication were not prepared in time, and therefore could not be planted as initially proposed. CONCERN then decided to distribute the cuttings to individual farmers in their target areas. IFCD feel that this is not a suitable means for the efficient multiplication of the cassava provided. IFCD monitoring staff have been working with CONCERN, to ensure the exercise does not prove fruitless. It was pointed out by CONCERN that as they work closely with the recipients of the cuttings, it will be possible to effectively monitor progress at ground level. Although IFCD feel that this is not a suitable means of multiplication, it is preferable to having the cuttings returned for redistribution. IFCD will continue to monitor progress closely.

### ICR

ICR is implementing this programme at four separate sites with relatively different soils and climatic conditions

- 1) ICR Resource Centre (Kakuuto Sub-County) two acres planted; sandy soils; 40% germination
  - 2) Bwavumplogoma site (Kifamba Sub-County) less than one acre planted; clay soils; very dry climate; 10% germination
  - 3) Kasasa Sub-County site, two different plots; loamy soils; germination 80%
- All cuttings have been planted in isolated plots
  - Germination rates vary greatly between the different plots. Kifamba Sub-County has been particularly hard hit in the current drought. This has affected other crops in the area also.

### OCBO

There are 4 multiplication plots being administered by OCBO. These are:

- 1) Kitonezi, Lwanda S/C, Kooki County;
  - 2) Luti, Kasaali S/C, Kyotera County
  - 3) Munaku Kama, Nabigasa S/C, Kyotera County
  - 4) Kakoma, Kalisizo S/C, Kyotera County.
- All cuttings have been planted in isolated plots.
  - Germination is estimated at 50%.

### MADDO

MADDO is one of the two partner organisations working in both Districts. There are four sites for Masaka District and three sites for Rakai. These are:

#### *Rakai*

Ssanje, Kifamba S/C, Kakuuto County,	2 acres
Kitente, Kifamba S/C, Kakuuto County	1 acre

Kyewanula, Lyantonde S/C, Kabula County 1 acre

*Masaka*

Malongo s/parish catholic church, Malongo S/C, Bukoto County 2 acres

Makondo, Ndagwe S/C, Bukoto County 2 acres

Kisanje, Bukulula S/C, Kalungu County 2 acres

IFCD monitoring staff has visited one of the cassava plots at Bukulula, planted by the Agali awamu women's group, at Kisanje village. It was very disappointing, as there is no germination. The cassava has been planted for the past month, but the soil was dry when the planting was carried out, and there has been no rainfall since. Because of the problem with rainfall, this group decided to retain some of the cuttings, in the hope that there would be rain soon. These cuttings are still in a store, are watered regularly to prevent drying until planted.

Kitovu Mobile

Kitovu Mobile is one of the two partner organisations that are operating in both Districts. They have selected five, two-acre plots for the multiplication of planting materials. The locations and progress of these sites are as follows:

- 1) Lwengo - Very good germination, estimated at 90%
- 2) Kysekka - 1 acre is germinating well; 1 acre not so well
- 3) Kabira - good germination, estimated at 60 – 70%
- 4) Kyananmukaka - good germination, estimated at 70%
- 5) Lyankoli - good germination – 1 acre

As with other areas, rainfall has been poor this season. This problem has been offset however, due to the good water retention qualities of the soil in the selected sites. Plots also appear to be well maintained, with weeding having been carried out on 2/3 of the plots.

KWEAP

KWEAP is administering one multiplication plot at Lyantonde, in Kabula County. IFCD monitoring staff have previously visited the site, but have not been able to visit since the cuttings were received. Reports forwarded by KWEAP indicate that all cuttings have been planted in a sufficiently isolated plot, and that cuttings have begun to germinate. No figures are available at this time as to the germination rate. IFCD monitoring staff will be visiting this plot in early January.

**Masaka District**

The partner groups, together with assigned areas for multiplication are:

Masaka District Authority	5.2 hectares (13 acres)
Masaka Diocesan Development Organisation (MADDO) <sup>3</sup>	2.4 hectares (6 acres)
Kitovu Mobile <sup>4</sup>	2.4 hectares (6 acres)
World Vision	3.2 hectares (8 acres)
Redd Barna	1.6 hectares (4 acres)

Masaka District Authority

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<sup>3</sup> Dealt with under Rakai District

<sup>4</sup> Dealt with under Rakai District

Masaka District Authority has prepared a single site at the District Farm Institute just outside of Masaka town. The plot is well isolated, and germination is estimated at about 50%.

### World Vision

There are six multiplication plots being administered by World Vision. These are:

- |                           |         |
|---------------------------|---------|
| 1) Kabonera, Kabonera S/C | 1 acre  |
| 2) Kikunyu, Kabonera S/C  | 1 acre  |
| 3) Kisansala, Kingo S/C   | 1 acre  |
| 4) Kiganda, Kingo S/C     | 1 acre  |
| 5) Sunga, Bukakata S/C    | 2 acres |
| 6) Katwe, Buwunga S/C     | 2 acres |

All sites are located in Bukoto County. IFCD staff have not yet had the opportunity to visit any of these sites, however, visits will be arranged for early January. Reports forwarded by World Vision indicate that all cuttings have been planted in isolated plots and that cuttings have begun to germinate.

### Redd Barna

There are six multiplication plots being administered by Redd Barna. These are:

- |  |            |
|--|------------|
| 1) Luyembe p/school, Kyazanga S/C              | 0.5 acres  |
| 2) St, Jude p/school, Kyazanga S/C             | 0.5 acres  |
| 3) Nakateete p/school, Kyazanga S/C            | 0.75 acres |
| 4) Kabukunge demonstration school, Kalungu S/C | 0.5 acres  |
| 5) Lukerere p/school, Kalungu S/C              | 0.5 acres  |
| 6) Namagoma, Kalungu S/C                       | 0.75 acres |

IFCD staff have visited the multiplication plot at Namagoma, which is being run by a local youth group. Planted cuttings are sufficiently isolated and are germinating well, although the site was in need of a weeding. The group representative assured that weeding was to be carried out the following weekend. Other areas have not yet been visited, but reports received indicate that all cuttings have been planted, and are beginning to germinate.

### **Summary**

IFCD monitoring staff have been unable to visit all multiplication sites prior to this report. Findings from those sites visited would show that initial germination rates are lower than initially expected. This can be explained by a combination of:

- i.) Cuttings were received in November 1998. Only a short time had elapsed since materials received were planted, and subsequently reported on.
- ii.) Areas of Rakai and Masaka have been experiencing severe drought conditions. At the time of this report, rainfall has been sporadic around both Districts. In some areas, poor soil quality did not allow enough moisture to be retained for germination.

With one or two exceptions, cuttings at all sites visited have begun to germinate. Although initial germination rates are low, better rates are expected provided that the areas receive some rain. It has been suggested that some form of irrigation could be utilised, however, as intended beneficiaries are being utilised as multipliers, this may not be possible in all areas. In areas where soil has been of better quality, germination has begun due to the superior moisture retention of the soil.

### Future Plans

IFCD monitoring staff will be visiting each plot at least once during the next quarter. Those plots that are in need of further visits will be visited as necessary. IFCD may also request the assistance of a technician from IITA, who may be able to offer more specific advice on problems encountered. In the event that this assistance is required, a formal request will be made to IITA.

A standard reporting format is to be prepared by IFCD monitoring staff, which will be circulated to all implementing partners. It is expected that this will improve the quality of reports from the field.

### Financial Report

To date, IFCD has received the following funds:

- 4,810,000/ Ush equivalent to US\$3,700 for Multiplication of MRC in Masaka
- 5,070,000/ Ush equivalent to US\$3,900 for Multiplication of MRC in Rakai

Funds received have been disbursed to implementing partners as follows:

Implementing Partner	Acreage	Amount Received	Reported Expenditure	Balance
Rakai District Authority	8 acres	1,040,000/	1,040,000/	-
RACA/LWF	4 acres	520,000/	345,000/	175,000/
WEAR	4 acres	520,000/	678,500/	158,500/
OCBO	4 acres	520,000/	595,000	95,000/
Kitovu Mobile	9 acres	1,170,000/	1,170,000/	-
ICR	4 acres	520,000/	520,000/	-
CONCERN	4 acres	520,000/	N/A	-
KWEAP	2 acres	260,000/	360,000/	100,000/
Masaka District Authority	13 acres	1,560,000/	1,560,000/	-
World Vision	8 acres	1,040,000/	261,700/	778,300/
Redd Barna	4 acres	520,000/	338,800/	181,200/
MADDO	10 acres	1,300,000/	1,391,100/	91,100/

**ANNEX 5      REPORT ON STAKEHOLDER AND TRAINING MEETINGS,  
RAKAI AND MASAKA DISTRICTS**

**P. Sseruwagi, IITA**

**W. Sserubombwe, NARO**

**DECEMBER 1998**

**Introduction**

In an effort to monitor the progress of the cassava mosaic disease (CMD) epidemic in Uganda, staff from the National Agricultural Research Organisation (NARO) together with staff from the International Institute of Tropical Agriculture, Eastern and Southern Africa Regional Centre, (IITA-ESARC) have conducted a number of surveys and characterised the epidemic. Available information indicates Rakai and Masaka to be in the zone of current epidemic expansion, which is characterised by high CMD incidence and a high proportion of plants with current season, whitefly-borne infection. Incidence of CMD has increased at many of the locations within this area in the last two years, 1997 and 1998. There is, however, still a large amount of material (harvest age) that is disease free and which through selection of CMD-free stems should allow farmers to obtain sufficient planting material for next season's crop. If the situation is not arrested, however, this zone is likely to be the zone with greatest demand for planting material in the near future.

There has been national and regional efforts aimed at limiting the expansion of the CMD epidemic and its effects on cassava production mainly through multiplication and dissemination of CMD resistant cassava. The Emergency Programme to Combat the Cassava Mosaic Disease Pandemic in East Africa was set up to improve food security and alleviate poverty in the East African region through enhancing the sustainable production of cassava. The project objectives include boosting cassava production and multiplication and dissemination of mosaic resistant cassava. The OFDA-funded project is being implemented by a partnership of national and international institutions including: the International Institute of Tropical Agriculture (IITA); the East Africa Regional Root Crops Research Network (EARRNET); the Kenya Agricultural Research Institute (KARI); the Tanzania Root and Tuber Crops Programme (TRTCP); the National Agricultural Research Organisation (NARO); and a number of non-governmental organisations (NGOs). The principal activities include monitoring and diagnostics, multiplication, germplasm diversification, the strengthening of stakeholder linkages and farmer training.

In Uganda, the OFDA project has its activities carried out in Rakai and Masaka Districts. At the inception of the project in Uganda in September 1998, a stakeholders' meeting was held at Kyotera town hall with the aim of introducing the project activities to the participants. In November, a training workshop was held for stakeholders in the two Districts. The report follows.

### **First stakeholders meeting held on the 25<sup>th</sup> September 1998, at Kyotera, Rakai District.**

In the first meeting with NGOs and District extension staff from Rakai and Masaka, held at Kyotera town council main hall, three papers were presented by scientists from NARO/IITA-ESARC. James Legg (IITA-ESARC) described the disease (CMD). William Sserubombwe (NRI/NARO) explained the role of the National Cassava programme in combating the CMD epidemic, highlighted the methods of multiplication of resistant cassava under the PL-480 project and lessons to learn in view of the OFDA project. The OFDA project was introduced to the members and its activities described by Peter Sseruwagi (IITA-ESARC).

Under the OFDA project the stakeholders (NGOs and District extension staff) were to supervise farmer activities and report on progress while the farmers were to plant and maintain the blocks. It was agreed that the Irish Foundation for Co-operative Development (IFCD) should organise other NGOs in the task of establishing the multiplication project in the two Districts.

A maximum of 15 hectares (37 acres) were to be planted per District, however, each District was allowed the opportunity to locate the multiplication fields as they wished. A break-down of the budget (7,500 US\$) was presented to the meeting:

- Land preparation - 1,500
- Preparation of cuttings - 300
- Planting – 300
- Stem harvesting – 300
- Loading and off-loading – 300
- Multiplication equipment – 300
- Fuel costs and maintenance – 1500
- Distribution costs to farm level – 3,000

300 hundred bags of SS4 were later supplied to Rakai and Masaka District from the PL 480 project multiplication blocks at Namulonge. The break down of the District multiplication blocks is presented in the IFCD report on the 'Implementation plan for the multiplication of mosaic resistant cassava in Masaka and Rakai Districts'.

### **Training of NGOs and District extension staff in Rakai and Masaka, 5-6<sup>th</sup>, November 1998.**

The workshop was intended to train stakeholders on the aspects of CMD and its control (William Sserubombwe) and agronomic practices with rapid multiplication techniques of cassava production (Peter Sseruwagi). The in-house meeting was strengthened by a field visit which exposed the participants to the symptoms, effects of CMD on growth and yield, types of CMD infection, whitefly vector, planting methods, stem harvesting and storage techniques. The meeting drew participants from different NGOs, farmer groups, extension agents and policy makers as indicated in Table 1.

In general, a Substantial proportion of the participants could not clearly identify CMD and neither were they aware of the means of spread and hence management. At the inception of the OFDA project where these people are charged with management of

the crop and distribution of the resistant material to farmers thereafter, the training was critical and was viewed by the participants as timely.

**Table 1: Participants at the Cassava multiplication training workshop held on 5<sup>th</sup> and 6<sup>th</sup> November 1998, Rakai and Masaka.**

<b>NGO/Extension</b>	<b>RAKAI</b>	<b>MASAKA</b>
1. IFCD	15	02
2. LWF	02	00
3. RACA	01	00
4. OCBO	02	00
5. MADDO	05	00
6. EXTENSION	05	30
7. WEAR	02	00
8. CONCERN	02	00
9. ICR	02	00
10. FEW	01	00
11. WORLD VISION	00	02
12. REDD BARNA	00	02
13. KITOVU MOBILE	00	03
14. AMD	00	01
<b>TOTAL</b>	<b>37</b>	<b>41</b>