



C3P
Fifth Quarterly Report
(1st April to 30th June 2007)



USAID
FROM THE AMERICAN PEOPLE

**Submitted on behalf of
C3P Management**

**John Peacock
C3P Chief of Party
CRS-Tanzania**

johnp473@yahoo.com

Tel: 255-743-935572

Table of Contents

TABLE OF CONTENTS.....	2
1. EXECUTIVE SUMMARY.....	3
2. INTRODUCTION.....	4
3. REPORT	4
4. ACRONYMS	25
5. APPENDICES	27
A1. Bioersity International Phase 2 Report	
A2. Brief: Responding to BXW amidst Multiple Pathogens and Pests	
A3. Brief: Re-inventory of Improved CMD Resistant Cassava Varieties in Kenya, Uganda and Tanzania	
A4. Brief: Fighting BXW in Rwanda	
A5. Brief: Food Security Survey Methodology in East and Central Africa	
A6. Brief: Community based Approach M & E for BXW activities in Uganda	
A7. Brief: Evaluation of OFVs in Tanzania	
A8. Rwanda: BXW Survey report	
A9. Uganda: USAID Field visit to C3P partners	

1. Executive Summary

The Crop Crisis Control Project (C3P) is a regional activity supported by the USAID Famine Fund to intensify and bring coordination to the fight against Cassava Mosaic Virus disease (CMD) and Banana Xanthomonas Wilt (BXW) in six countries of Central and East Africa – Burundi, Democratic Republic of Congo (DRC), Kenya, Rwanda, Tanzania, and Uganda. Managed by Catholic Relief Services (CRS) and the International Institute of Tropical Agriculture (IITA), the program brings together more than 35 implementing partners. C3P commenced on 15 April 2006 and ends on the 15 October 2007. This document is the Fifth Quarterly Report for the period 1st April to 30th June 2007.

Again there was significant field travel and partner support from the C3P Regional Management (EARO) with more than 40 travel days from the CoP and the Deputy CoP.

Progress continued under both objective one, Regional Coordination and objective two, Farmer's employing successful measures to control CMD and BXW. Progress in regional coordination is reflected in part by six detailed briefs which demonstrate the documentation and sharing of learning under C3P and in the regional travel which included regional technical and monitoring visits, regional program manager training and exchanges. Progress on employing successful measures to control CMD and BXW are reflected in the synthesis tables under section 3 of this report, updated from the fourth quarterly report. Further progress is presented through a summary for each strategic objective and a more detailed intermediate results breakdown.

Representatives from C3P management, IITA cassava and banana scientists, and USAID met with a full team from ASARECA on June 21, 2007 to share progress on the C3P project and to discuss how to improve collaboration. A joint workshop was proposed for September 2007. ASARECA expressed interest in visiting C3P programs and to participate in the final C3P evaluation as a means to better learn and apply the C3P lessons to other regional programs.

CRS, in partnership with IITA, has intensified discussions with the Bill and Melinda Gates Foundation (BMGF) regarding a multi-country cassava disease mitigation and production project. Activities for potential funding are in full synergy with the C3P cassava mandate. If funded, the Great Lakes Cassava Initiative (GLCI, as it known) will be the follow on program to the C3P cassava work, leveraging C3P activities, outputs, and established relationships at country and regional levels to effectively address CMD and other diseases in a sustainable manner.

During this quarter, there was a marked increase in the allocation of C3P small project funds. As of the close of the financial quarter ending June 30, 2007 an estimated \$ 2.0 million of 2.2 million USD under small project funds had been committed to 37 partners. CRS began, in June 2007, detailed discussions for a no-cost-extension (NCE) of this grant to USAID and at the time of submission of this report a formal written request for a NCE, together with a budget, detailing the re-allocation of funds, through April 2008, was submitted to USAID.

2. Introduction

The Crop Crisis Control Project (C3P) is a regional activity supported by the USAID Famine Fund, to intensify and bring coordination to, the fight against Cassava Mosaic Virus disease (CMD) and Banana Xanthomonas Wilt (BXW) in six countries of Central and East Africa – Burundi, Democratic Republic of Congo (DRC), Kenya, Rwanda, Tanzania, and Uganda. C3P was organized under the auspices of a Limited Scope Grant Agreement with COMESA (the Common Market for Eastern and Southern Africa), in partnership with ASARECA (the Association for Strengthening Agricultural Research in Eastern and Central Africa).

C3P is an 18 month project and Catholic Relief Services (CRS) was awarded a grant to implement regionally coordinated, well-targeted activities, in all six countries. Their largest implementing partner, with a sub-award, is the International Institute of Tropical Agriculture (IITA), and together they are leading a network of regional associations and agricultural institutions, national agricultural research organizations, NGOs and local partners. C3P commenced on 15 April 2006 and provisionally ends on the 15 October 2007.

This document is the Fifth Quarterly Report for the period 1st April to 30th June 2007.

3. Report

Synthesis of CMD and BXW Outputs and Impact under C3P

A synthesis was carried out showing the number of hectares of CMD resistant material that was planted for further multiplication and an estimate made on the number of households this could impact on by the end of the project. Similar estimates are made on the impact in terms of HH to be served by the BXW sensitization program.

TABLE 1. SUMMARY OF CMD RESISTANT CASSAVA PLANTING IN ALL SIX COUNTRIES

Country	Target (ha)	Total Planted (ha)	Varieties Under Multiplication	Partners Engaged in Multiplication
Burundi	144	132	MM96/7678, MM96/7204, MM96/0087, MM96/5280, ABBEY-IFE	Bubanza, Muyinga, EMUSO, FHI, Ngozi, CARITAS Belgique, CRS Kirundo
DRC	105	137	Liyayi (MM96/0287), SawaSawa (MM96/3920), Mayombe (MM96/7752), Sukisa (MM96/1666), Kasela, Kitanda, Kikonda	Cederu, Kindu, Kongolo, Uvira, Bukavu, Goma
Kenya	58	146*	Mygera, MH95/0183, and SS4	Homa Bay, Kisumu, REFSO
Rwanda	92	90	95/0063 and 92/0057	INGABO and RWARRI
Tanzania	143	214	MM 96/4619 (<i>Meremeta</i>),	RUDDO,

			MM 96/4684 (<i>Mkombozi</i>), MM 96/8450 (<i>Kibaya</i>), MM 96/5725 (<i>Nyakafuru</i>), MM 96/8233 (<i>Rangimbili</i>), MM 96/3075B (<i>Belinde</i>), I 91/00063 (<i>Kasara</i>), I 91/0057 (<i>Isanzu</i>), I 91/0067 (<i>Suma</i>), TME 14 (<i>Bahati</i>), SS4 and TMS 4(2) 1425 (Nigeria)	LZARDI- (Ukiriguru & Maruku), MARDI, MFEC, KIMKUMAKA, KIKANGONET, TAHEA, MRHP
Uganda	0	18.4**	0067 (Akena) and 2961	World Vision, CARITAS Lugazi, CARITAS Kasana Luwero
Total	542	737.4		22

*Kenya total includes secondary and tertiary multiplication.

**Uganda total includes ONLY secondary multiplication.

TABLE 2. BXW TRAININGS AND ESTIMATED FARMERS REACHED IN ALL SIX COUNTRIES

Country	Target for Extensionists Trained*	Actual Extensionists Trained**	Target for Farmers Trained*	Farmers Trained**/ To be Trained***
Uganda	>50	42	2500	5,397**
Tanzania	>50	53	>500	165**
Kenya	>50	22	>500	458**
Burundi	>50	184	>500	2,580***
Rwanda	>50	45	>500	2,021**
DRC	>50	87	>500	3,600**
Total	>300	433	> 5000	11,641**

*Targets are based on the C3P project document. ** Actual Numbers trained based on Country Quarterly reports. *** Numbers to be trained based on Country Quarterly Reports.

Progress to Date against Strategic Outputs and Intermediate Results

PROGRAM FRAMEWORK

Goal: Threats to food security caused by agricultural crises in the Great Lakes Region of Eastern and Central Africa are reduced

SO 1: Regional stakeholders institutionalize coordinated agricultural disaster response mechanisms

IR 1.1: Regional response to CMD and BXW is well coordinated

IR 1.2: GIS technology links data on disease to data on vulnerability to food insecurity

IR 1.3: Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters

SO 2: Farmers employ effective measures to control CMD and BXW

IR 2.1: Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices

IR 2.2: Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties

In most cases a single line/bullet entry will list an activity that was made towards achieving an output within a strategic objective or intermediate result. Only activities worked on during the period of this report are listed. Please refer to earlier reports for further information on an intermediate result.

SO 1: Regional stakeholders institutionalize coordinated agricultural disaster response mechanisms

IR 1.1: Regional response to CMD and BXW is well coordinated

1.1.1 Collate information from each of the target countries on the status of CMD and BXW and their effects

- **Rwanda:** Steering committee members were involved in regular reviews of workshop materials. In early July 2007, the steering committee met to discuss CMD activities of INGABO and RWARRI. An action plan was established for the season beginning in September 2007.

1.1.2 Convene coordination and planning meetings regionally and at national level (CCU).

- **DRC:** Two coordination meetings were held during this period. The first in Bukavu in April, the second in Goma in May. During the Bukavu coordination meeting, the provincial committee was set up. This committee is headed by the provincial inspector of agriculture, seconded by the Director of INERA-Mulungu. The

members of this committee are: CRS, CARITAS Bukavu, Catholic University of Bukavu, the National Seed Services, four NGOs (two international NGOs and two other national ones). In Goma, another provincial coordination meeting was organized to sensitize politico-administrative officials and set up the provincial committee. During these two meetings (Bukavu and Goma), the main topics were problems of CMD and BXW and necessity to coordinate interventions.

1.1.4 Establish mechanisms for linkage of the ASC with country teams involving flow of information

- **Tanzania:** The following partners were visited by the CPM: MRHP, RUDDO, KIMKUMAKA, LZARDI-Ukiriguru, MFEC, TAHEA and MARDI. The minutes of the last quarterly Country Coordinating Unit (CCU) meeting were sent to the CCU members for their comments.

1.1.5 Publish and share project information, including a web site

- **Tanzania:** The draft report on the evaluation of OFV, in Kyaka and Biharamulo districts report was published and will be shared with other C3P countries.

- **Uganda:** A brief on Participatory Community Evaluation of BXW educational campaigns was presented for publishing on the website (A6).

- **IITA:** Documents from 4th USAID quarterly report were converted to PDF files and added to the project website. These can be accessed using the following link: http://c3project.iita.org/Doc/C3PFourthUSAIDReport_January_March31_07.pdf and the 25 appendices through the link: <http://c3project.iita.org/LatestNewsReport.aspx#NewRpt>

1.1.6 Monitoring and evaluation of project implementation

- **Regional:** A Monitoring Template for Cassava multiplication was developed and refined during meetings with Anglophone (Kisumu, Kenya) and Francophone (Goma, DRC) CPMs in April. Countries and partners were completing templates as of late July 2007, unfortunately too late for this report. The template will enable countries to list fields under multiplication by partner and variety and includes GPS references as well as indicating cutting losses incurred during the dissemination stage from primary sites to the C3P site.
- **Regional:** The M & E manager/DCoP conducted three monitoring visits (Rwanda, Uganda, Kenya) as well as attend both GIS training workshops. The CoP conducted a similar exercise in Tanzania in June.
- **DRC:** A total of 7 visits were completed by CPMs during this period. The Kinshasa based CPM visited the sites of Kongolo, Goma and Butembo while the CPM based in Bukavu visited Kindu, Bukavu, Uvira and lastly Kongolo sites. The site supervisors are making regular visits to the fields. During those visits they are sometimes accompanied

by the Head of Agriculture in each province or by the state services of National Seed Service, and National Vulgarization Service.

- **DRC:** Two field visits were completed by the CPM during this period. The CPM visited Nyakariba site with CARITAS Goma, and a second in Butembo with U.C. of Graben. Another field visit was completed jointly with the FAO team, PAM and CARITAS Goma to verify the incidence of BXW near Minova village.
- **Kenya:** A BXW scientist from IITA visited the C3P project area on Kenya/Tanzania Border following the disease outbreak on the Tanzania side. BXW infection is still within the Northern Lake Victoria region of Kenya following spread from Uganda. In February 2007, C3P Quality Management training by IITA, KARI and CRS was attended by all partner representatives. During March, the CRS-Kenya Agriculture unit manger made a field visit to all C3P implementing partners in Kenya.
- **Rwanda:** The CPM, in collaboration with CRS Partner Strengthening officers and BAIR, visited all BXW sites in Rubavu district where infected banana mats were being uprooted, and introduced tracking sheets. Trip reports were produced to document site visits. All C3P partners maintain a log book to record work accomplished, which is reviewed by the CPM during each visit.
- **Uganda:** A field visit was organized from 18th-21 June 2007 for USAID and the C3P regional team to see C3P sites in Luwero, Mukono and Mbale districts (see A9).

IR 1.2: GIS technology links data on disease to data on vulnerability to food insecurity

1.2.1 Food security survey: Field surveys and review of existing national documentation of food security. Links developed with related GIS projects in East/Central Africa

- **IITA:** Food security surveys in DRC were completed, with the data being entered. Update surveys in Tanzania and Kenya were completed. Data entry for Tanzania was completed and the data entry for Kenya is on-going. The food security brief depicts the methodology for the food security assessments (see A5).
 - IITA has established the algebraic models (one for each country) that allow analysis of the effect of different loss scenarios (banana/BXW, cassava/CMD) and price scenarios on food security. Therefore it will be possible to have an assessment of the CMD diseases' effects on food security in terms of spatial and temporal dynamics.
 - IITA have the data for the CMD-developments (maps of diseases etc), and can cross-cut them with the data on food security. Therefore we will have a good picture on the effects at a district level from W-Kenya to DRC. These will be presented in the 6th Quarterly report.
 - This final report will be basically six country reports following the same outline:
 - Introduction (including objectives)
 - Methodologies (according to the methodology paper depicted above, with details on surveyed areas, sample sizes etc., and the algebraic models

- Overview of food security from FAO statistics
 - A detailed report on the food security as per surveys.
 - Production changes and effect of CMD on food security.
- **DRC:** The second food security survey was organized in the three remaining provinces (North Kivu, Maniema and North Katanga). Before the survey, enumerators from Kongolo, Kindu, Goma and Butembo were trained by Edgar Twine, in Goma, on how to collect data. The survey was organized by IITA and carried out with the assistance of CRS and its partners. Data are currently being entered prior to analysis. The final report is expected during the month of July 2007.
 - **Kenya:** The food security survey covered 6 districts (Busia, Teso, Siaya, Rachuonyo, Homabay and Kuria districts) with a total of 262 households interviewed. Survey data was sent to IITA for analysis and a report will be posted on the C3P website.
 - **Tanzania:** The food security survey was carried out in 10 districts viz. Bukoba, Muleba, Ngara, Geita, Sengerema, Tarime, Musoma, Bunda, Ukerewe and Mwanza City. Collected data were submitted in June 2007 to IITA Kampala for analysis. A cassava inventory survey was conducted in 21 districts viz. Biharamulo, Bukoba, Karagwe, Misenyi, Muleba, Ngara, Kasulu, Kibondo, Kigoma, Bunda, Musoma, Serengeti, Tarime, Geita, Kimbwa, Magu, Misungwi, Nyamagama, Sengerema, Bukombe and Maswa.

1.2.2 Mapping of food security status on a regional basis

- **IITA:** The next food security maps (DRC, updates of Kenya and Tanzania) are expected to be ready by mid-August (see 1.2.1).
- **Tanzania:** During the food security survey conducted in Bukoba, Muleba, Ngara, Sengerema, Geita, Nyamagana, Ukerewe, Bunda, Musoma and Tarime districts GPS readings were taken in each field of each household interviewed/surveyed for analysis and mapping.

1.2.3 BXW Survey

- **IITA:** The remaining BXW survey reports were completed and maps will appear in the 6th Quarterly report.
- **Burundi:** A new sampling survey was conducted to verify if BXW is actually present in the country after conflicting reports from FAO, INIBAP and others who disputed IITA's rapid field survey results from November 2006. Representatives from IITA, CRS, ISABU, Ministry of Agriculture, IRAZ, FAO, and the University of Burundi were all present for two field trips; one to Makamba and the other to Cibitoke, to collect samples of suspected infected banana plants. Samples were sent to the Global Plant Clinic at CABI in the UK and to a laboratory at the Ohio State University in the U.S. for testing of the bacteria. Both laboratories returned positive confirmation of the presence of the

banana *xanthomonas campestris pv musacearum* (BXW) in their preliminary reports. (these are available on request). In June, C3P-Burundi held a meeting with the Ministry of Agriculture, the Ministry of Planning, FAO, ISABU, IRAZ, University of Burundi, OFDA and other partners and stakeholders to share and discuss the results of the sampling and begin future planning for more comprehensive survey work to determine the prevalence and incidence levels throughout Burundi.

- **Tanzania:** Data collected in Kagera and Kigoma regions were analyzed at the regional level by Bioversity International (Biovint) and a report was produced which was shared at the regional level and within Tanzania.

1.2.4 CMD Survey

- **IITA:** The remaining CMD surveys were completed

1.2.5 Quantification of indicators for risks affecting food security (pests and diseases, droughts etc.) on a regional basis

- **Tanzania:** Food security and cassava inventory surveys were carried out.

1.2.6 Establishing a GIS model depicting medium to long term food security risks arising from pests and diseases and abiotic factors.

- **Tanzania:** Data from the Food Security and Cassava Inventory Survey and the expected CMD survey to be conducted next quarter will give a model which will depict medium to long term food security risks in Tanzania. All these surveys are geo-referenced and will be used to generate a GIS model.

IR 1.3: Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters

1.3.1 Identify the critical organizational components of a disasters response unit using experience from C3P and elsewhere (GIS, crop data, socio-economic information)

- **Rwanda:** In mid-May, the CPM and Country Representative (CR) participated in a Disaster Management Task Force Meeting. They presented C3P progress made in CMD and BXW eradication and asked to what extent these two major threats to food security could be incorporated into their mandate. The different organizations suggested that the GOR would need to take this up, as it is not currently a humanitarian crisis.

1.3.2 Determine the institutional linkages and partnerships required for an effective system

- **Rwanda:** In mid-May, the CPM and Country Representative participated in a Disaster Management Task Force meeting. They presented C3P work on CMD and BXW eradication and asked the DMTF to consider inclusion of these crises in their

discussions. Their recommendation was to approach the GOR to determine the feasibility of this. The DMTF primarily addresses “humanitarian” crises. In early May, the C3P Manager and Country Representative met with a representative from the GOR’s Disaster Management Task Force to discuss follow up to C3P Activities. The GOR representative promised to help address the threat of imported infected bananas and cassava along the borders. He was unaware of the extent of the BXW problem in Rwanda. The CPM and Country Representative met with Laurent Kayitare of FEWSNet to promote the inclusion of C3P data into their regular reports. He said they already publish data on CMD, but not banana. The CPM sent him information and maps showing the locations of the disease.

- **Tanzania:** The Chief of Party visited CRS Mwanza office, Maruku Agricultural Research and Development Institute (MARDI) and Rulenge Diocesan Development Office (RUDDO) and convened meetings with the partners to discuss C3P progress and the way forward.
- **Uganda:** A quarterly meeting for all partners was held on 4th May (see A 13). C3P and a USAID team had a meeting with an ASARECA team to brief them on C3P activities and a C3P planned workshop due to take place in September 2007. ASARECA was also asked to nominate individuals to be part of the final evaluation team of C3P (A14).

1.3.3 Propose a methodological approach using the various data sources to provide an early warning system for potential disasters for crop or livestock production

SO 2: Farmers employ effective measures to control CMD and BXW

IR 2.1: Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices

2.1.1 Inventory survey for CMD-resistant varieties in all target countries

- **IITA:** An extended inventory survey for CMD-resistant germplasm, in areas that were not covered by the first inventory survey in Kenya, Tanzania and Uganda, was completed. The full reports for the three countries were submitted giving a more comprehensive picture of the availability of resistant varieties.
- **Kenya:** Cassava bulking sites within the project area was geo-referenced using a GPS. 146 ha are under cassava resistant to CMD.
- **Tanzania:** A cassava inventory survey was conducted in 21 districts from 21st May to 16th June covering 5 regions of Kagera, Mwanza, Mara, Shinyanga and Kigoma. The districts surveyed were Biharamulo, Bukoba, Karagwe, Misenyi, Muleba, Ngara, Kasulu, Kibondo, Kigoma, Bunda, Musoma, Serengeti, Tarime, Geita, Kimbwa, Magu, Misungwi, Nyamagama, Sengerema, Bukombe and Maswa. Data collected will be analyzed by IITA/EARRNET Kampala-Uganda and the report will be shared among C3P countries.

2.1.2 Expand networks of primary and secondary multiplication sites in Burundi, Rwanda and DRC

- **Burundi:** The C3P country program, in partnership with its partners (BDD Bubanza, BADEC Ngozi, CRS Kirundo, FHI, EMUSO, BDD Muyinga and CARITAS Belgique), are assisting with the multiplication of 150 ha of cassava cuttings
 - 132 ha of cassava cuttings are now under multiplication and are being monitored for CMD, other diseases and/or other problems (termites, drought, theft...)
 - One variety, MM96/0735, that was earlier rejected by FAO was also used in some multiplication sites and it is doing well
 - C3P Burundi is working with IITA to help coordinate the harmonization and standardization of monitoring of multiplication fields
- **Rwanda:** In May 2007 the CPM with the Crop Protection Unit Manager from MINAGRI/RADA visited CMD sites in Kayonza, Gatsibo and Nyamagabe districts to certify methods for verifying (phytosanitary) practices. This was the first of three MINAGRI visits to certify the quality of the plants. In June 2006, the CPM attended a meeting with CRS-OVC CARITAS partners to discuss the use of on-farm vouchers (OFV) of cassava cuttings to OVC households. CRS is planning to provide access to OVCs and patients on ARVs from its PEPFAR funded projects as well as extremely vulnerable households under its Title II DAP/COSA.
- **Tanzania:** Maintenance of primary sites established last quarter by the Lake Zone Agricultural Research and Development Institutes (Maruku and Ukiriguru) was done by keeping the fields free from weeds. A total of 11.2 ha were maintained. The expected C3P country program, in partnership with LZARDI and MARDI to establish six sites each of 4ha, making a total of 24ha of new primary sites was not done. It was postponed until the start of the next short rain (Sept-October 2007) due to unpredictable rains during the long rains and therefore fear of losing the scarce CMD resistant planting materials. Preparations to start the activity are underway.

2.1.3 Monitoring of the health status of plants at the multiplication sites and promotion of quality control

- **IITA:** A second revised version of the quality management protocol was produced and plans put in place to 'roll out' the approach throughout project target areas during the next quarter of the project.
- **Burundi:** 30 multiplication sites for partners (BDD Bubanza, BADEC Ngozi, BDD Muyinga, CRS Kirundo, FFH, EMUSO and CARITAS Belgique) were visited during June. The objective of these visits was to identify the problems encountered by the partners and check on the general status of fields, health of plants, etc. Due to a prolonged rainy season, cassava vegetation production is high and beyond our expectations. We took the opportunity to analyze the problems linked with cassava

cuttings production and liquidation of funds by partners. In all visited sites, field health status is encouraging. However, CMD symptoms exist in some cases. With the QMP survey to come in July, the problem will be further analyzed and characterized. One major concern is that some cassava multiplication was carried out in fields with poor soil and cassava plants are now showing signs of nutrient deficiency. In the case of one partner, BDD Muyinga, an estimated 2 hectares of planting material could be abandoned due to low soil fertility.

- **Rwanda:** In May-June 2007, the CPM, in collaboration with CRS Partner Strengthening officers and agronomists from INGABO and RWARRI, visited all CMD sites (90.6 hectares) to evaluate cassava production. In total, INGABO has 16 sites in Nyamagabe, Gisagara, Nyanza and Huye districts, totaling 63 hectares, and RWARRI has 24 sites in the districts of Gatsibo and Kayonza, totaling 27.3 hectares.
- **Tanzania:** Each partner continued to monitor the cassava plots either by groups of farmers, contact farmers or the established OFV fields. The monitoring also, involved advising farmers to uproot diseased plants as well as keeping their fields weed free. The cassava Quality Management Protocol (QMP) testing budget by IITA was made and plans to conduct training on the use of the protocol by multipliers was done. This activity is expected to be carried out during the next quarter.
- **Uganda:** Originally zero multiplication of cassava was supposed to take place in the project for Uganda, however it was realized that there was still a shortage of planting material which necessitated farmers to travel long distances to access improved planting material. Most of the material was also found at research institutions with little spill over to surrounding farming communities. It was therefore decided by project management to set up some institutional sites that were nearer to farmers. Table 1 (A3) shows the number and area of primary and secondary (institutional) cassava sites that were established. These will serve as future sources of planting materials in the districts and will eliminate the need for farmers to travel to Namulonge Research Station to buy planting material. Cassava that was disseminated in December 2006 in the districts of Mukono, Kayunga, Nakaseke and Luwero is now 7 months old and it is anticipated that this cassava will be ready for dissemination starting September-October 2007 using OFVs. Also the material that is being multiplied is resistant to both CMD and Cassava Brown Streak Disease (CBSD)

2.1.4 Facilitate establishment of community-based private sector driven cassava planting material production schemes

- **DRC:** Regular cassava health inspection is done by partner agronomists. Three inspections were done by SENASEM staff in Uvira, Goma and Kindu. These inspections were focused on standards for the production of cassava cuttings and also investigated the phyto-sanitary status of cassava cutting multiplication. Three heads of provincial agriculture from South Kivu, North Kivu and Maniema are making regular visits to the fields. They are accompanied by partner agronomists and sometimes accompanied by their own agronomists and SENASEM

agents. The multiplication fields in the sites of Mweso-Katwe and Bambo were certified by SENASEM staff during this period.

- **Kenya:** Sensitization of farmers on the use on farm vouchers (OFVs) to target the beneficiaries is ongoing and vouchers will be distributed for planting during the short rains this year.
- **Rwanda:** Following the amendment to the contract between CRS and INGABO signed in May, INGABO increased its field production of CMD resistant cassava by 22 hectares at 16 sites in 4 districts: (Nyamagabe, Gisagara, Nyanza and Huye), while RWARRI expanded production on 10 additional hectares at 24 sites in 2 districts (Gatsibo and Kayanza) to 27.3 hectares. These were visited by the CPM and partners. Further to the amendments, it was later learned after a field visit that approximately 2 hectares under cultivation by INGABO were planted on extremely small plots in drought prone areas, and have not survived. CRS will not pay for these 2 hectares. Pursuant to the earlier GPS training, the CPM formulated a BXW map that was later presented to FEWS Net and the partners.
- **Tanzania:** Contract farmers were selected by the community in Tarime district and facilitated by C3P to establish 10 ha. A total of 2400 HH have already been met as a result of using OFVs. Most farmers received 300 cuttings each.

2.1.5 Organization of meetings of stakeholders for the establishment of a national network for the multiplication and distribution of good quality CMD-resistant planting materials

- **Burundi:** In May, 42 participants from different organizations throughout Burundi (International, research institutes, NGO's and governmental) met in Bujumbura to discuss the preparation and planning of the 2007-C (mid-June thru mid-September) and 2008-A (mid-September thru December) agriculture seasons. Cassava recovery was the main topic of the meeting. The meeting concluded that a lot was done in multiplication to date and the target of **84,000 ha** under multiplication in 3 years is feasible. The meeting noted however that related issues such as post harvest technology and lack of resistance to Cassava Brown Streak Disease (CBSD) remain to be discussed and planned. It was recommended that research institutions quickly explore the question of CBSD.
- **DRC:** INERA Mulungu has organized two conferences in Bukavu and Goma to discuss with stakeholders the strategies for controlling CMD and to determine the best way to distribute cassava cuttings. The Provincial committee of South Kivu has organized a conference with collaboration from CARITAS Uvira in Uvira. More than 50 persons participated to this conference. The participants included State officials, chiefs of local churches, priests, association movements and leaders of opinion.
- **Rwanda:** In May-June 2007, the CPM met with representatives of ISAR FAO, CRS and MINAGRI to discuss and agree on a joint TOT workshop on the management of CMD.

A joint plan and budget was developed indicating how each partner would be involved and its contribution.

- **Tanzania:** Plans were made to conduct a regional steering committee meeting in each region infected by CMD, viz. Kagera, Mara, Kigoma and Mwanza.

2.1.6 Publicity about newly-developed varieties and sources of quality planting materials provided through local mass media, field trips, demonstration plots and pamphlets

- **DRC:** Fifty posters of 2m x 2m and 150 of 1m x 70 cm with a simple CMD message were completed. More than 2000 pamphlets in French and Swahili were produced and distributed to farmers, students and public. For high visibility, more than 500 caps and T-shirts were distributed to the public, farmers and to decision makers.
- **Rwanda:** The CPM developed draft training curriculum materials using the materials from the Regional Training on CMD of January/February 2007. (A copy of this document was also given to FAO). The CPM also was involved in the development of the brochures and posters for the trainings and for distribution to INGABO and RWARRI to use in their training programs. The training documents were reviewed and vetted by ISAR and MINAGRI prior to their use in the June joint CMD management training by CRS, FAO, ISAR and MINAGRI
- **Tanzania:** Preparation for multiplying CMD extension materials to be used in the next quarter sensitization campaign was done. The CMD training manual was reviewed and it is expected in the coming quarter to multiply 10,000 leaflets, 130 training manuals and 2000 posters. Also, two radio announcements were prepared and will be broadcast in the next quarter as preparation for the coming cassava planting season starts (in the short rains-Sept-Oct 2007).

2.1.7 Development of training curriculum

- **IITA:** Digital images were obtained from Uganda for the 'Growing a Healthy Cassava Crop' one-page training sheet. Further images from Rwanda, Kenya, DRC and Tanzania will be obtained during the roll out of the Quality Management Protocol in the next and final quarter. This will allow the development of late draft versions of the training sheet for all countries.

2.1.8 Regional training: Extensionists trained in CMD management approaches

2.1.9 Country cassava teams train Extensionists and farmers in CMD management

- **Burundi:** Planning of country cassava in Burundi training. We have however finalized an agreement with ISABU and training will take place in the next quarter (July-September).

- **DRC:** CEDERU Kibututu, CARITAS UVIRA and UC of Graben have utilized theatres and dance to sensitize the general public and farmers to CMD. CARITAS Goma has used songs to sensitize the public to CMD and organized 21 open days to sensitize public to CMD in the markets of Shasha, Minova, Kalunga, Kisharo, Mweso and Bambo.
- **Kenya:** Monitoring for weeding, rouging and data recording on tolerant cassava multiplication sites are on going.
- **Rwanda:** The CPM in collaboration with CRS Partner Strengthening Officers and project staff from INGABO and RWARII, visited all CMD sites (90.6 hectares) to evaluate the cassava crops. In the process of reviewing the fields, it was noted that RWARRI had planted cassava on extremely small parcels of land in a drought prone area, resulting in CRS rejecting these fields as sources of cuttings for future distributions.
- **Rwanda:** During late-June, CRS, FAO and ISAR organized, under the auspices of the MINAGRI, a Cassava Training Workshop for extensionists (district agronomists and partners). This workshop addressed phytotechnology, phytopathology, biotechnology, processing and post harvest activities, research, socio-economy and strategies to fight CMD. A one day field visit was used to illustrate the aspects presented in the conference room. A total of 54 people attended the workshop. The previous GPS training helped the CPM to make CMD maps. ISAR developed and tested posters for use in the TOT and district level workshops. A total of 2,500 posters and 15,000 leaflets were produced. CRS and FAO have distributed these among district and sector agronomists trained through TOT.
- **Uganda:** A total of 127 Community based trainers (CBTs) and 2,874 farmers were trained in CMD, CBSD management, control and rapid multiplication of cassava in the districts of Mukono, Kayunga, Luwero and Nakaseke and Nakasongola in previous quarters (Table 3).

Table 3: Number of CBTs and farmers trained in CMD and CBSD

<i>Partner</i>	<i>Number of community based trainers trained</i>	<i>Number of farmers trained</i>
CARITAS Luwero	94	583
CARITAS Lugazi*	33	2,100
World Vision	-	191
VEDCO	-	-
Total	127	2,874

*Note that for CARITAS Lugazi the CBTs and farmers were trained on the control and management of both CMD and CBSD and BXW and macro propagation. *figures are cumulative for all quarters up to July 2007

IR 2.2: Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties

2.2.1 Identify farmer-preferred wilt-escaping varieties in target countries

- **Tanzania:** A few varieties were identified and have now been multiplied in the established MARDI macropropagator. Among the banana varieties selected for multiplication at MARDI are both exotic and local varieties.

2.2.2 Survey to obtain germplasm inventory for banana in all target countries

- **Tanzania:** Banana germplasm inventory is well documented and conserved at MARDI.

2.2.3 Extensionists and farmers trained in macropropagation

- **IITA:** A protocol to certify farms for procuring macropropagation corms was fine-tuned and used in Uganda. The protocol has already been translated into French and will be circulated in the next quarter for testing in Francophone countries.
- **DRC:** More than 25 agronomists and staff from different partners, state services, local NGOs and international NGOs working on banana were trained on banana macropropagation. A theoretical training session was conducted in Goma and a practical session was conducted in the field. Mr. Ladislav Kambale of CARITAS Goma conducted the macropropagation training in field with Prof. Vigheri Ndungo from Catholic University of Graben.
- **Tanzania:** Farmers from Kagera and Tarime districts were trained on how to control BXW by the C3P trained banana agricultural extension workers. 165 farmers from the new BXW outbreaks areas in Kagera region were also trained.
- **Uganda:** A total of 123 CBTs and 3,017 farmers were trained in macropropagation (see table below).

Table 4. Number of CBTs and farmers trained in Macro propagation

<i>Partner</i>	<i>Number of community based trainers trained</i>	<i>Number of farmers trained</i>
CARITAS Luwero	53	817
CARITAS Lugazi*	33	2,100
World Vision	37	100
Total	123	3,017

*Note that for CARITAS Lugazi the CBTs and farmers were trained on the control and management of CMD and CBSD and BXW control, management and macropropagation.

*figures are cumulative for all quarter up to July 2007

2.2.4 Establish multiplication nurseries in the target farming communities

- **IITA:** Over ten macropropagation nurseries have already been established in the target communities in Uganda, with activities led by C3P partners (CARITAS Lugazi, CARITAS Kasana and World Vision) with support of CRS and with IITA technical backstopping.
- **IITA:** Between the end of March and April 5th, inspection of banana propagators for technical certification was carried out at all 13 propagator sites in Mukono and Luweero districts. Sites proposed for the establishment of mother gardens were also inspected and certified or alternative recommendations given.
- **IITA:** During early April, inspection and certification of farms to be used as sources of corms for macropropagation was carried out in various districts.
- **DRC:** CARITAS Goma has installed two macropropagators in Nyakariba and Muheto. The Catholic University of Graben in Butembo has collected more than 80 varieties of banana from different areas for selecting those to be used for macropropagation multiplication.
- **Uganda:** All macropropagation chambers construction are complete. A total of 16 macropropagators were constructed. Each propagator has a nursery for hardening of suckers giving a total of 16 nurseries. Some of the propagators are operational and suckers have started shooting up. Macropropagators have a capacity of between 300-800 corms and are capable of producing between 7,500-20,000 suckers. None of the partners have yet transferred the suckers to the hardening shades or nurseries.

Table 5. Corms procured, Macro propagators and nurseries constructed

<i>Partner</i>	<i>Number of corms procured</i>	<i>Number of propagators & nurseries</i>
CARITAS Luwero	1,865	6
CARITAS Lugazi	2,449	7
World Vision*	17,500	3
Total	21,814	16

*WV procured 17,500 corms and disseminated 16,000 directly to 400 households with each farmer getting 40 corms. 1,500 corms were used in the macro propagator chambers.

Table 6. Tissue culture plantlets procured and mother gardens established

<i>Partner</i>	<i>Number of tissue culture plantlets procured</i>	<i>Number of mother gardens</i>
----------------	--	---------------------------------

<i>Partner</i>	<i>Number of tissue culture plantlets procured</i>	<i>Number of mother gardens</i>
CARITAS Luwero	7,875	54
CARITAS Lugazi	6,690	30
World Vision*	-	3
Total	14,565	87

2.2.5 Identify farmers to receive the initial batch of suckers

- **IITA:** In Uganda, identification of farmers that will receive suckers was done by C3P partners implementing macropropagation (CARITAS Lugazi, CARITAS Kasana and World Vision) with participation of CRS and backstopping from IITA.
- **Tanzania:** Preparation of a field at Maruku Agricultural Research and Development Institute (MARDI) was done to receive the first bunch of banana saplings from the established macropropagators at the institute. The first produced a total of 400 banana saplings and more saplings are expected in the second batch which was planted in May in the macropropagator.

2.2.6 Publicity about wilt-escaping varieties and sources of quality planting materials through local mass media, field days, demonstration plots and pamphlets

- **DRC:** INERA Mulungu has organized two workshops in Bukavu and Goma to discuss with stakeholders strategies for controlling BXW. The South Kivu provincial committee organized a workshop in Uvira with the collaboration of CARITAS Uvira. More than 50 persons participated. Among the participants were state officials, chiefs of local churches, priests, association movements and district leaders. This activity was strengthened by CARITAS Goma, Catholic Univ. Graben and CEDERU Kibututu. CARITAS Goma has produced and distributed 1000 pamphlets in French, 1000 in Swahili and 50 in Kinyarwanda. Four placards and 4 calicos were also produced. CEDERU Kibututu has produced and distributed 1000 pamphlets in Swahili, while the Catholic University of Graben has produced and distributed 3000 pamphlets in French and 6500 in Swahili. They have also produced medium size 15 placards and 40 small size placards.
- **Kenya:** REFSO has organized 5 meetings with a total attendance of 287 males and 171 females on BXW sensitization. Radio adverts on BXW awareness campaigns were carried out in a local language (Dholuo) through a local FM radio station (Radio Lake Victoria).
- **Rwanda:** There were 32 radio broadcasts on BXW management through Radio Rwanda. There was also a 30 minute radio transmission by BAIR on Radio Rwanda on BXW

management. In May, BAIR published some briefs on BXW management in *Huguka*, *Imvaho Nshya*, *Umusaruro* and *Dushyikirane* newspapers.

- **Tanzania:** Preparation for multiplying BXW extension materials to be used for sensitization campaign was done. A total of 30,000 leaflets, 500 posters and 30 training manuals will be produced during the next quarter.
- **Uganda:** Dissemination of participatory communication tools (posters, manuals, public video shows) was done. Participatory community sensitisation on BXW was carried out in the districts of Mukono, Kayunga, Nakaseke, Luwero and Mbale by the National Banana Research Program (NBRP). 5,397 farmers were sensitised which is above the expected project target of 2,500, plus over 1,600 school children.

Table 7. Farmer attendance per district to BXW community mobilization and sensitization

Districts	Sub-counties	Parishes sensitized	Total farmers	Males	Females	School pupils
Nakaseke	5	33	2473	1340	1133	Over 500
Mbale	3	15	938	520	418	Over 400
Luwero	3	23	815	482	333	Over 200
Mukono	3	12	809	309	500	Over 400
Kayunga	1	6	362	141	221	Over 100
Total	15	89	5397	2792	2605	Over 1600

Participatory monitoring data were collected from 10 sub-counties from Mukono, Kayunga, Luwero and Nakaseke Districts by Agriculture Extension and Community Based Trainers. An inventory of households practicing BXW measures in some C3P sub-counties is being compiled by the NBRP. The NBRP research team also visited a sample of 82 farmers to make consultations on the progress of BXW control at the community level. The observations made at the farm level revealed that BXW is decreasing at the farm level and many previously abandoned fields have undergone rehabilitation in the past 3 months since community sensitization was initiated and are now yielding healthy BXW free bunches of bananas.

2.2.7 Development of training curricula in both English and French

- **ITA:** A protocol to certify farms clean for replanting was discussed and developed in Uganda. The protocol has already been translated into French for circulation and discussion with Francophone countries.

- **IITA:** One brief on the management of BXW considering other biotic constraints was completed (A2).
- **Rwanda:** CRS used BXW posters and a model developed by BioVersity for inclusion in the BXW Management Workshop held in June in Rubavu. CRS and ISAR worked together to share the information on the posters and brochures with banana farmers not yet exposed to this information about the disease in order to determine how well they understood the messages. CRS published the posters and brochures from the June workshop and for subsequent distribution during follow up district BXW workshops for district and sector agronomists now under way in the major banana growing areas of Rwanda. A valuable brief was produced (see A4)
- **Tanzania:** Training curricula which were developed earlier were used to train 165 farmers who had BXW outbreaks in Bukoba and Karagwe districts.
- **Uganda:** Translation of video BXW sensitization messages to Lugisu which is a local dialect in Mbale district was done by National Banana Research Program.

2.2.8 Regional training: Extensionists trained in BXW management approaches

- **DRC** A total of 6 ha of banana mats infected by BXW were removed in the following villages: Mihanga, Nyamitaba, Nyakariba and Muheto. CARITAS Goma has distributed crop substitution seed to 2000 farmers who have voluntarily accepted to remove the mats. Under the supervision of the Catholic University of Graben 2 ha and 10 ha of banana mats were removed in Watalinga and Ruwenzori villages respectively.
- **Rwanda:** C3P held meetings with the Crop Protection Unit Manager from MINAGRI/RADA to discuss the approach to be used for BXW eradication. The recommendations emerging from these meetings were 1) that C3P and BAIR focus on large areas of infected bananas, rather than targeting a few infected plants in each field and 2) that BAIR needed to increase their awareness training efforts among farmers to cut male buds and sanitize tools. C3P collaborated with the Crop Protection Unit Manager from MINAGRI/RADA to support farmers in uprooting and destroying infected banana plants and encouraging district authorities to step up involvement to encourage farmers to do the same. MINAGRI also distributed a disinfectant (Jik) in June to farmers to sterilize tools.
- **Rwanda:** By June, C3P through BAIR, and with FFW rations from WFP, assisted farmers to uproot infected banana plantations in 6 sectors. Around 380.5 of 396 ha targeted for eradication (90.9%) were uprooted, and a length of 1.5 km was protected against erosion by planting soil erosion control grasses. Farmers have been substituting sweet potatoes for their uprooted bananas. The total amount of FFW distributed among 1291 workers in June was 101,560 kg (64,550 kg of cereals, 32,300 kg of legumes and 4,710 kg of vegetable oil).

2.2.9 Country banana teams train extensionists and farmers in BXW management

- **IITA:** During mid-May, a training workshop for extension staff from Western and Nyanza Provinces was held in Busia, Kenya.
- **IITA:** During early May, a mission for sample collection for BXW diagnosis was carried out in Cibitoke and Makamba Provinces of Burundi. The samples were sent for molecular analysis at CSL (UK) and Ohio State University (US) and the presence of *Xanthomonas* was confirmed.
- **IITA:** In early June, in Rubavu, a training workshop was supported for extension staff from banana-growing districts in Rwanda.
- **IITA:** A monitoring tour was carried out in late June, with Hudson Masambu (USAID) and Steve Walsh (CRS) to Luweero, Mukono and Mbale district banana macropropagation sites. Thereafter, a briefing visit was made to ASARECA, at its Entebbe regional office (A9).
- **Burundi:** In May, IRAZ, with backstopping from Bioversity International, held a series of four 2-day regional training workshops for a total of 120 communal extension agents on BXW identification, prevention and control. The four workshops were divided by region: West (Bujumbura, Bubanza, Cibitoke and Muramvya); South (Bururi, Makamba and Rutana), Central (Gitega, Karuzi, Ruyigi, Cankuzo and Mwaro) and North (Kayanza, Ngozi, Kirundo and Muyinga). Many topics related to BXW were discussed, including BXW identification, dissemination and management. More than 2400 posters in French about BXW prevention and management were distributed to all trainees to be disseminated in their working place and villages.
- **DRC:** CEDERU Kibututu, CARITAS UVIRA and UC of Graben used theatres and dance to sensitize public and farmers to BXW. CARITAS Goma used the songs to sensitize the public to BXW. In CEDERU Kibututu, 22 banana brigadiers were trained on community mobilization techniques, BXW management and banana mat removal. In addition, two further training programs were conducted by CEDERU in Kiwandja. The content included: internal and external symptoms of BXW, the transmission mode and management of BXW. CARITAS Goma trained 40 banana brigadiers (21 brigadiers in Nyakariba and 19 in Lushebere) and 4 supervisors on community mobilization techniques, BXW management and removal of banana mats. CARITAS Goma also trained 2000 farmers at Nyakariba, Muheto, Tambi and Lushebere on identification of BXW, propagation mode and management of BXW and trained 1600 farmers on the techniques of removing banana mats.
- **Rwanda:** In May 2005, CRS signed a contract with ISAR for the BXW ToT and macro propagation activities. In May 2005, ISAR developed BXW training materials in collaboration with CRS. These were tested with farmers in Kayonga district who have not been exposed to BXW in order to get their feedback on how well they understood the materials. In early June, CRS, ISAR and MINAGRI/RADA organized a *Banana*

Xanthomonas Wilt (BXW) Trainers of Trainers (ToTs) workshop in Rubavu district for district and sector agronomists from the prime banana growing regions in Rwanda. ISAR lead the training. A team of international banana scientists from BioVersity International and IITA attended the workshop and contributed their viewpoints during the workshop. The 60 participants included district/sector agronomists in the banana growing districts and representatives of farmer associations and cooperatives. The objectives of this training were to equip participants with knowledge and skills to recognise and manage BXW in a sustainable way, to draw up training action plans for follow-up training of farmers, local leaders and other stakeholders in their home districts, and to equip participants for taking the lead in mobilising their districts /sectors /communities into action against BXW.

- **Rwanda:** By June 2007, C3P through BAIR, and supported by FFW rations from WFP, assisted farmers to uproot infected banana plantations in 6 districts and help diminish the economic impact of the loss. Around 380.5 of 396 ha targeted (90.9%) were uprooted and 1.5 km was protected against erosion by soil-fixing grasses. Farmers substituted sweet potatoes for their uprooted plots. The total FFW tonnage distributed among 1291 workers in June 2007 was 101,560 kg (64,550 kg of cereals, 32,300 kg of legumes and 4,710 kg of vegetable oil). In April 2004, BAIR organized meetings to sensitize the communities in all cells (39) of the 6 sectors infected by BXW. In June 2006, BAIR diffused through local radio (Rubavu) 34 broadcasts on BXW management. One 30 minute radio broadcast was given also by BAIR on Radio Rwanda. BAIR published some briefs on BXW management in *Huguka*, *Imvaho Nshya*, *Umusaruro* and *Dushyikirane* newspapers.
- **Tanzania:** BXW sensitization to farmers by C3P trained extension officers and the Division Executive Officers (DEO) in Kagera districts continued in their respective areas.
- **Uganda:** A number of farmer trainings were carried out in the districts of Mukono, Kayunga, Luwero and Nakaseke and Mbale. The objectives were to provide knowledge to farmers on the importance of practicing good crop husbandry and management practices on banana, to identify pests and diseases that attack banana and the appropriate pest and disease management control practices, to empower farmers with knowledge and practical skills in field hygiene especially in the control of BXW diseases, to train farmers in identification and differentiation of BXW symptoms from other pests and diseases. To date, 123 community based trainers and 3,317 farmers were trained in the five districts as indicated in the table below.

Table 8. CBTs and farmers trained in BXW management and control

<i>Partner</i>	<i>Number of community based trainers trained</i>	<i>Number of farmers trained</i>
CARITAS Luwero	53	817
CARITAS Lugazi*	33	2,100

<i>Partner</i>	<i>Number of community based trainers trained</i>	<i>Number of farmers trained</i>
World Vision	37	400
Total	123	3,317

*Note that for CARITAS Lugazi the CBTs and farmers were trained on the control and Management of both CMD and CBSD and BXW and Macro propagation.

4. Acronyms

ADP	Area Development Program
ASC	Advisory Steering Committee
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ARV	Antiretroviral (Drugs for AIDS Relief)
ATDT	ASARECA's Research and Development Network
BAIR	Bureau d'Appui aux Initiatives Rurales
BARNESA	Banana Research Network for Eastern and Southern Africa
BDD	Bureau Diocésain de Développement
BMGF	Bill and Melinda Gates Foundation
BXW	Banana Xanthomonas Wilt
C3P	Crop Crisis Control Project
CARITAS	International Catholic Relief Service Organizations
CBSD	Cassava Brown Streak Disease
CBT	Community Based Trainers
CCU	Country Coordinating Unit
CEDERU	Centre de Développement Rural
CIALCA	Consortium for Improved Agriculture-based Livelihoods in Central Africa
CICR	International Committee of Red Cross (DRC)
CMD	Cassava Mosaic Disease
CMVD	Cassava Mosaic Virus Disease
COMESA	Common Market for Eastern and Southern Africa
CoP	Chief of Party
CPM	Country Program Manager
CRS	Catholic Relief Services
DAP/COSA	Development Activity Program/Close-Out Strategy Amendment
DCoP	Deputy Chief of Party
DED	District Executive Director
DMTF	disaster Management Task Force
DPAE	Provincial Department of Agriculture (Burundi)
DRC	Democratic Republic of Congo
EA	East Africa
EARO	East Africa Regional Office
EARRNET	Eastern African Root Crops Research Network
ECHO	European Commission Humanitarian Aid Department
ECOSEC	Economic Security
EMUSO	Entente Mutuelle et Solidarité
FAMIS	Food and Agricultural Marketing Information System
FAO	Food and Agricultural Organization
FEWSNET	Famine Early Warning System Network
FFW	Food for Work
FHI	Food for the Hungry International
GIS	Geographic Information System
GLCI	Great Lakes Cassava Initiative
GOR	Government of Rwanda
GPS	Geographical Positioning System
ICRC	International Committee of the Red Cross
IITA	International Institute of Tropical Agriculture

INERA	l'Institut National pour l'Etude et la Recherche Agronomique
INGABO	Rwandan Union of Agriculturalists and Animal Breeders
INIBAP	International Network for the Improvement of Banana and Plantain
IR	Intermediate Result
IRAZ	Institut de Recherche Agronomique et Zootechnique
ISABU	Institut des Sciences Agronomiques du Burundi
ISAR	Institut des Sciences Agronomiques du Rwanda
KARI	Kenya Agricultural Research Institute
KEPHIS	Kenya Plant Health Inspection Services
KIKANGONET	Kigoma Kasulu NGO Network
KIMKUMAKA	Kituo cha Mafunzo ya Kuboresha Mazingira na Kilimo Adilifu
LZARDI	Lake Zone Agricultural Research and Development Institute
M & E	Monitoring & Evaluation
MALI	Muleba Agricultural and Livestock Industries
MARDI	Maruku Agricultural Research and Development Institute
MAYAWA	Maendeleo Ya Wakulima
MFEC	Mogabiri Farm Extension Centre
MINAGRI	Ministry of Agriculture (Burundi)
MoA	Ministry of Agriculture
MRHP	Misungwi Rural Housing Project
MRHP	Mwanza Rural Housing Program
NAADS	National Agricultural Advisory Services (Uganda)
NADIFA	Nakasongola District Farmers Association
NARO	National Agricultural Research Organization (Uganda)
NARS	National Agricultural Research Systems
NBRP	National Banana Program (Uganda)
NCE	No Cost Extension
NGO	Non-Governmental Organization
OFV	On-Farm-Voucher
OVC	Orphans and Vulnerable Children
PEPFAR	President's Emergency Plan for AIDS Relief
RADA	Rwanda Agricultural Authority
REFSO	Rural Energy and Food Security Organization
RGC	Regional Grant Review Committee
REGI	Regional Economic Growth and Integration
RUDDO	Rulenge Diocesan Development Office
RWARRI	Rwandan Rural Rehabilitation Initiative
SAKSS	Strategic Analysis & Knowledge Support System
SENASEM	Service national de semences
SO	Strategic Objective
TAHEA	Tanzania Home Economics
UoN	University of Nairobi
USAID	United States Agency for International Development
WFP	World Food Programme
WVI	World Vision Inc.
WVU	World Vision Uganda
MFEC	Mogabiri farmers Extension Centre

5. Appendices

- A1. Bioversity International Phase 2 Report**
- A2. Brief: Responding to BXW amidst Multiple Pathogens and Pests**
- A3. Brief: Re-inventory of Improved CMD Resistant Cassava Varieties in Kenya, Uganda and Tanzania**
- A4. Brief: Fighting BXW in Rwanda**
- A5. Brief: Food Security Survey Methodology in East and Central Africa**
- A6. Brief: Community based Approach M & E for BXW activities in Uganda**
- A7. Brief: Evaluation of OFVs in Tanzania**
- A8. Rwanda: BXW Survey report**
- A9. Uganda: USAID Field visit to C3P partners**