



Uganda C3P Work Plan



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Submitted on behalf of the
Uganda C3P Country Coordinating Unit (CCU)

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LIST OF ACRONYMS

ASC	Advisory Steering Committee
APEP	Agricultural Production Enhancement Program- DANIDA
ARDC	Agricultural Research Development Centre
ASPS	Agricultural Sector Program Support
BARNESA	Banana Research Network for Eastern and Southern Africa
BBW	Banana Bacterial Wilt
BXW	Banana Xanthomonas Wilt
C3P	Crop Crisis Control Project
CBOs	Community Based Organizations
CBSD	Cassava Brown Streak Disease
CCU	Country Coordinating Unit
CGIAR	Consultative Group on International Agricultural Research
CMD	Cassava Mosaic Disease
COP	Chief of Party
CM	Country Manager
CRS	Catholic Relief Services
CSC	Country Steering Committee
EARRNET	Eastern African Root Crops Research Network
EOP	End of Project
FAO	Food and Agricultural Organization
HOP	Head of Programming
IITA	International Institute of Tropical Agriculture
IITA-ESARC	International Institute of Tropical Agriculture- Eastern and Southern Africa Regional Centre
INIBAP	International Network for the Improvement of Banana and Plantain
MAAIF	Ministry of Agriculture, Animal Industries and Fisheries
NAADS	National Agricultural Advisory Services
NANEC	National Network of Cassava Workers
NARO	National Agricultural Research Organization
NBRP	National Banana research Program
NCP	National Cassava Programme
NGO	Non-Governmental Organization
USAID/OFDA	United States Agency for International Development/ Office for Foreign Disaster Assistance

I. EXECUTIVE SUMMARY

Cassava Mosaic Disease (CMD)

CMD first appeared in Uganda in mid 1980s leading to virtual elimination of nearly all the existing varieties and land races; a drastic decline in cassava production and food shortages and famine-related deaths especially in Eastern and Northern Uganda. The response to CMD by NARO in partnership with other international institutes of research has involved the use of 5 strategies:

1. Development of the National Network of Cassava Workers (NANEC)
2. Mobilizing, sensitizing, training extension, NGO staff, farmers and other stakeholders on CMD control.
3. Packaging and deployment of phyto-sanitary methods: clean planting materials, destruction of infected plants and community policing.
4. Research & Technology development (CMD epidemiology & vector studies; Epidemic causes and virus etiology; Monitoring changes in the epidemic; development of resistant varieties and integrated management of CMD;
5. Massive multiplication and dissemination of resistant varieties throughout the country.

Between 1997-2006 a number of cassava multiplication and dissemination projects were initiated and these resulted in success being registered in the fight against CMD. However the recent emergence of the Cassava Brown Streak Disease (CBSD) is now presenting a new challenge to the fight against CMD. About 20 districts are affected by the new CBSD. Most of the CMD resistant varieties have succumbed to CBSD except two varieties that appear resistant 00067 (Akena) and 2961.

Proposed areas of intervention for the C3P will therefore include the districts Luwero and Nakaseke where CMD is still a major constraint to food security. Similarly Cassava is important in Mukono and Kayunga districts where the CBSD re-emergence has begun to impact cassava production negatively. The targeting for Cassava includes Nakasongola where cassava is a major food and cash crop. The anticipated project partners CARITAS Kasaana-Luwero, CARITAS Lugazi and World Vision are currently implementing a sustainable agriculture program. The strategies that will be employed include: Multiplication and dissemination of clean CMD and CBSD resistant planting material; promotion of a seed distribution system that makes use of a demand subsidy (voucher and seed fairs) and training and awareness building for extension workers and farmers using participatory methods and tools.

Banana Xanthomonas Wilt (BXW) In Uganda

BXW in Uganda was first reported in October 2001. In 5 years BXW spread rapidly through all the central districts of Uganda threatening production in the major banana producing districts. The disease is now confirmed in 35 districts. All banana cultivars in affected areas are susceptible however incidence in juice/ beer bananas has been reported to be higher than in cooking bananas. Potential national loss, if the disease is not controlled is estimated at \$ 4b by 2010.

In order to fight BXW, MAAIF established a steering committee to guide the implementation of the BXW strategy. The response strategies that have been used include protecting unaffected areas; halting disease in frontline areas and dissemination of clean planting material and the use of participatory development communication tools (brochures, videos, posters, calendars) in the endemic zones.

A number of interventions to control BXW have been concentrated in the threatened (1st priority) and frontline districts (2nd priority) to control the spread while efforts to mitigate the impact of BXW in endemic areas (3rd priority areas) remains limited due to funding gaps. Therefore it has been noted that more effort is still required in the endemic areas to mitigate the impact of BXW on household food security. C3P therefore plans on targeting its interventions in the endemic areas of Mukono, Kayunga, Luwero and Mbale. Anticipated project partners, CARITAS Kasaana- Luwero, CARITAS Lugazi and

World Vision are present in these areas. The strategies that C3P will employ will include: awareness building on how to cope with the disease followed by dissemination of clean planting material; intensive de-budding and rouging of affected plants; promotion and dissemination of participatory development communication tools and use of other communication channels.

Linkages

In 1998 the USAID/OFDA funded emergency programme to combat the CMD pandemic in East Africa was initiated to address the immediate threats to CMD and it targeted Rakai and Masaka districts in Uganda. Many years later the project has expanded and is now called CMD pandemic mitigation in East and Central Africa programme. The critical focal point of this project has been diffusion, knowledge transfer and multiplication and diffusion of cassava planting material. The Program is coordinated by IITA-Kampala but is a collaborative effort involving numerous agencies and networks including NARCs, National ministries of agriculture, extension agencies, CBOs and donor agencies. Implementation of the C3P project in Uganda will draw lessons learnt from the USAID funded CMD program and collaboration between CRS and IITA will help facilitate this process.

At the national level C3P will link with other CMD and BXW programs by having a member of the Country Steering Committee co-opted onto the NANAC and the BXW steering committee. Other linkages that are envisaged are with the Food Security Working Group that provides fora for discussion, sharing and enhancing the flow of information on the food security situation in Uganda.

CRS and the CCU for Uganda are requesting **\$\$272,796 U.S.** dollars for the implementation of the Uganda C3P work plan for a period of 15 months starting in August 2006 through October 2007. The Uganda C3P work plan will be implemented through a Country Coordinating Unit (CCU) whose responsibilities will include selecting sub-grantees to carry out the country work plans, managing the work of these sub-grantees, coordinating with CRS and IITA C3P management with respect to technical, administrative, and financial standards. The CCU is headed by the CRS CPM and shall defer to the C3P Chief of Party, or their designate, for all administrative, financial, and programmatic issues related to the C3P work plan as listed in the C3P Project Document.

II. CRS Uganda C3P PROJECT FRAMEWORK

Goal: Threats to food security caused by agricultural crisis in Uganda are reduced.

Key Outputs for the CRS Uganda work plan will include:

SO1: Country stakeholders institutionalize coordinated agricultural disaster response mechanisms.

IR1: Country responses to CMD and BXW is well coordinated.

Outputs

- *CCU is established*
- *M&E system set up*
- *Collaborative linkages developed with related projects*

IR2: GIS technology links data on diseases to data on vulnerability and food insecurity.

Outputs

- *Database established on status of food security, CMD prevalence and BXW prevalence.*
- *GIS map on food security, risks and vulnerability.*

IR3: Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters.

Outputs

- *Components of agricultural disasters response approach identified*
- *Collaborative framework for disaster responses established with a network of existing institutions.*
- *Plan for early warning system developed.*
- *Plan for dissemination of early warning information developed.*

S02: Farmers employ effective measures to control CMD and BXW

IR1: Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices.

Outputs

- *C3P targeted areas defined*
- *Partnerships established with local NGO/CBOS involved in multiplication and dissemination of CMD resistant planting material.*
- *Locations, quantities of planting material of CMD and CBSD resistant varieties [scouting] identified. The scouting exercise has already been completed for Uganda. Results emerging from this will determine whether we need to multiply more material or just disseminate what is available. Preliminary results show that multiplication might be needed since what is available may not adequately cover all the targeted farmers. Report on his exercise is available from IITA.*
- *4 ha of CMD and CBSD resistant varieties planted for multiplication over the life of project*
- *A demand driven approach (subsidization by issuance of vouchers) for dissemination of improved cassava varieties introduced*
- *CMD and CBSD resistant planting material disseminated to 1,720 farmers (includes 420 banana farmers who will be identified and provided with cassava cuttings for crop rotation).*
- *Out of the targeted households, 300 farmers access planting material using vouchers. [Size of voucher recipients was determined based on availability of the resistant planting material locally. Hence, availability of resistant material in targeted areas is critically limited].*
- *Regional training a team of 5 extension staff trained in CMD management approaches.*
- *Country level training 30 partner staff, 22 extension workers and 1,720 farmers trained by country training teams in CMD management.*

IR2: Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties.

Outputs

- *C3P targeted areas defined*
- *Partnerships established with local NGO/CBOS involved in multiplication and dissemination of wilt escaping planting material.*
- *2,500 vulnerable households access resistant planting material.*
- *105,050 plantlets procured from a private tissue culture laboratory.*
- *840 farmers out of the total targeted households will access banana suckers using vouchers. Up to 50% of these farmers will be targeted for crop rotation to break the disease cycle and access CMD&CBSD resistant material and wilt escaping banana varieties using vouchers.*
- *Formal partnerships established with existing nursery operators in target districts.*
- *7 nurseries and 3 Macro propagation sites/demonstration sites established.*
- *Regional training 5 extensions trained in BXW management approaches*
- *Country level training 30 extensionists and 2,500 farmers trained in BXW management approaches*

III. PROBLEM ANALYSIS (2 pages)

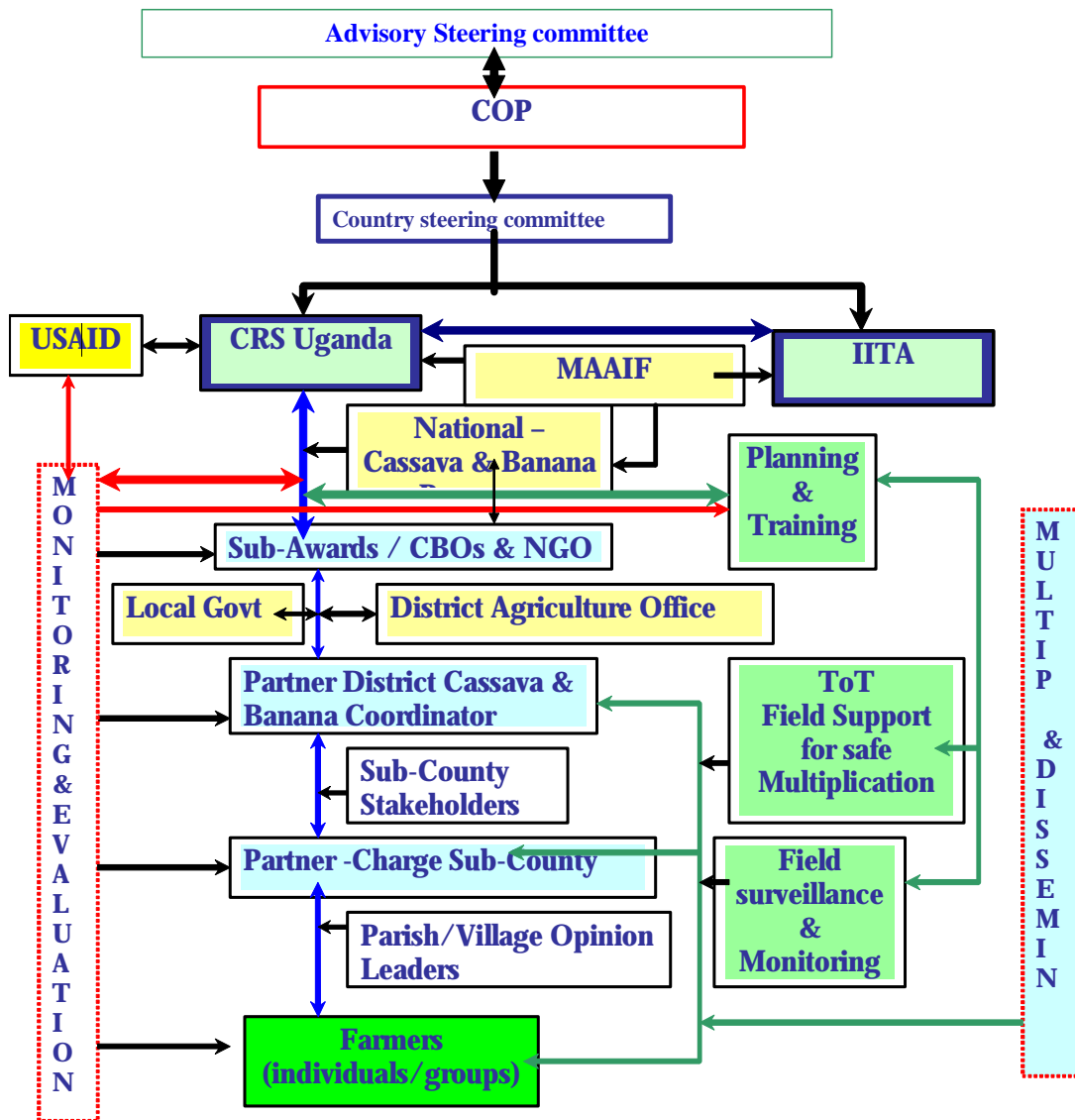
Country Level Coordination

The CCU made up of CRS and IITA will be responsible for in-country implementation of the C3P and will report directly to the COP who may report to the Advisory Steering Committee (ASC) if necessary (refer to figure 1 below). At the country level the responsibility for implementation of the project will rest entirely with the CRS C3P CM, the CRS Country HOP and the IITA representative. A country Steering Committee (CSC) will be constituted and made up of officials from the National Cassava and Banana Research programs, MAAIF, IITA, CRS, FAO, World Vision, CARITAS. The CSC will liaise with the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) and the National Agricultural Research Organization (NARO) which host the BBW taskforce and the NANEC respectively in the implementation of strategies to control BXW and CMD at the country level.

A member(s) of the CSC will be co-opted onto the NANEC and the BXW taskforce. The National Cassava and Banana programs will provide technical expertise and support to the partners (NGOs and CBOs) who will receive sub-awards from CRS for implementation of cassava and banana multiplication and dissemination at the district level. The NGO/ CBOs through their district cassava and banana coordinator will liaise and work with the District Local Government Leaders and the District Agricultural Officer to ensure linkage and synergy of C3P activities with existent district programs.

At the sub-county level, a Partner In charge- Sub County who reports to the partner District Cassava and Banana Coordinator will consult with the parish or village opinion leaders and put in place mechanisms of reaching the farmers and or farmer groups. The monitoring and evaluation will be done at all levels of the coordination framework (farmer level, partner level, district and national coordination). Monthly reports will be presented by the partners to the CCU and will be the basis for the quarterly reports which will be presented to the CSC at the quarterly meetings for final submission to the Chief of Party (COP).

Figure 1: Framework for Country Coordination of CMD and BXW



Mechanisms currently set-up in Uganda that deal with CMD and BXW pandemics

To fight the CMD pandemic a broad coalition of private and public groups has been assembled into the National Network of Cassava Workers (NANAC). The National Agricultural Research Organization (NARO) as the apex body is responsible for the overall coordination of the network. Through its cassava programme and NGOs it works with the District Agricultural Officer and District Agricultural Coordinator at the district level. At the next level which is the sub-county, activities are implemented by the in-charge at the sub-county who liaises with the parish or village opinion leaders to reach the farmers. Beginning in 1993 the NANEC began mass multiplication and distribution of improved varieties. The NANAC has been successful in combating the CMD disease, with production of cassava recovering to pre-epidemic levels within 5 years of introducing resistant varieties.

In order to fight BXW the MAAIF constituted a taskforce in December 2001 to develop a strategy and action plan to eradicate the BXW disease. This emergency measure was effective in managing the disease (reduced incidence to 10%) but was found to be unsustainable. This necessitated formulation of a long-term strategy and action plan involving research and development. The strategy emphasizes continuous monitoring of the disease, generation and dissemination of information and technologies for controlling the disease and empowering stakeholders at all levels to control it. With a new strategy in mind, MAAIF has established a coordination mechanism that includes: A steering committee to guide the implementation of the overall BXW strategy (including R&D action plan) and a technical committee to guide execution of project activities. MAAIF has appointed a National Coordinator to spearhead implementation of project activities related to the strategy. At the same time a BXW working group which is made up of donors and people from MAAIF is undertaking an awareness rising and training campaign on BXW targeting some 35 affected and threatened districts. Working Groups on Research, Disease containment and control, Monitoring and Evaluation and Public relations have also been formed and are made up of Donors, MAAIF, NARO, ASPS, NAADS, Global Plant Clinic, APEP, ECOTRUST, IITA, and INIBAP. Taskforces at district, sub-county, parish and village levels have been established to monitor and supervise execution of disease control activities at different levels.

Linkage with regional mechanisms

Cassava

The NANAC has had no linkage with the regional bodies because its activities have been at the national level. However the National Cassava Programme has linked with EARNET through the Regional Pandemic Mitigation project. The activities have included monitoring and diagnostics to establish the extent of spread of CMD; germplasm diversification and exchange; multiplication of CMD resistant varieties; training and technology transfer centers and awareness raising and project management and monitoring. A two tier system of consultative review has been established. The upper tier of the system is made up of a regional stakeholders group composed of key project partners from each of the participating countries. Stakeholders include members of the national research programmes, extension services, NGOs, plant quarantine staff as well as representatives of international research organizations. Meetings are held annually. The second tier of the system comprises national steering committees which focus on review and planning of CMD mitigation activities.

Bananas

Working groups have been formed as part of the BXW national taskforce. It is through these working groups that the BXW taskforce links to the regional mechanisms who are represented in the working groups. Regional bodies such as BARNESA which is coordinated by INBAP are also represented on the working groups of the BXW taskforce. Inclusion of INBAP on the Country Steering Committee will ensure that the aims and activities of C3P are congruent with those of the regional BXW taskforce.

Challenges with the current mechanisms

- Lack of resources for scaling out disease control initiatives. The diseases are running ahead of the resources available.
- Limited resources available for the control of CMD and BXW within national lead organizations.

Challenges to working more collaboratively at country and regional basis to address CMD and BXW

- Lack of a coordinated response in fighting spread of plant diseases that don't respect borders.
- There are competing crisis that distract attention from BXW e.g. bird flu and HIV.

The Cassava Mosaic Disease Pandemic

Cassava is an important food staple and cash crop for about 44% of the population living in 23 districts of Uganda. CMD first appeared in Uganda in mid 1980s. Within 6 years the epidemic had destroyed 80% of cassava production. This resulted in about 500 local cassava varieties disappearing and farmers abandoning cassava cultivation. The entire country is affected with losses estimated at US\$60 million per year between 1992-1997. Yield losses of up to 100% have been experienced in susceptible varieties. This greatly undermined the food security households in many of the major cassava growing areas.

To address CMD and its effects NARO imported resistant TMS varieties from IITA. Breeding with local varieties was done and multiplication and distribution of improved varieties was initiated in the mid 1990s and areas initially targeted included some of the first areas to be affected by the pandemic in Northern and Eastern Uganda. In recent years as the pandemic has expanded southwards the emphasis of control efforts has shifted to central and southern districts of Uganda. Between 1997-2006 a number of cassava multiplication and dissemination projects have been initiated. These have included PL480 a USAID funded project implemented in the districts of Masindi, Luwero, Mpigi, Mukono, Iganga, Kamuli, Busia, Tororo, Gulu; FAO funded project in Masaka, Iganga, Bugiri, Busia, Apac, Kitgum; World Bank funded project in Abi ARDC, Arua district; OFDA CMD project phase 1&2 in Rakai and Masaka; Gatsby Charitable Foundation/NARO CMD project in Eastern, Northern, Central, Western regions; World Food Program and CRS and World Vision USAID funded project in IDPs camps in the north.

As a result of these efforts, NANEC declared a win against CMD, however the recent emergence of the Cassava Brown Streak Disease (CBSD) is presenting a new challenge to the fight against CMD. A survey done by the National Cassava programme in July –September 2005 revealed that both CMD and CBSD had been observed in the districts of Mukono, Wakiso, Luweero and Kaberamaido. However this scenario has changed with CBSD being observed in 16 more districts in 2006. About 20 districts are now affected by the new CBSD with yield losses of up to 100% being registered. Most of the CMD resistant varieties have succumbed to CBSD except two varieties that appear resistant 00067 (Akena) and 2961. C3P will therefore help to address this problem by disseminating 00067 and 2961 in the districts of central Uganda (Mukono, Kayunga and Luwero) which have been the origin of CMD and CBSD and have registered high prevalence rates for both diseases. Food security of these areas is highly threatened due to reliance on cassava and banana which are major staples. Banana has failed due to the BXW epidemic; farmers have resorted to cassava however CBSD is quickly spreading and affecting cassava production which further exacerbates the food security situation.

A number of lessons have been learnt. From the Gatsby initiative on CMD has been the realization that there are strong benefits to regional collaboration and sharing of genetic material. This coupled with sustained scientific capacity is instrumental in ensuring effective crisis response as well as ongoing

productivity gains. Initial multiplication of cuttings requires a one time coordinated push by public agencies since private seed companies face negligible financial incentives to propagate cassava cuttings. Other lessons learnt from OFDA/USAID CMD program have included 1) the need to forge strategic relationships with NGOs as this helps facilitate knowledge and technology transfer and capacity building.

2) Programs should also consider making use of tolerant local varieties as a first line of defense which hastens multiplication and dissemination of stems since farmers work with what is familiar to them and adapted to local conditions.

3) Increasing awareness among farmers should include teaching farmers about expected losses and making recommendations on alternative cropping and livelihood strategies that farmers can adopt for the short and medium term.

4) Planting materials should be moved out to farmers quickly through use of rapid multiplication methods.

5) Emphasis should be placed on networking and coordination. It was felt that recovery in Uganda could have progressed more quickly and reached a wider range of farmers if there had been more communication and sharing of experiences.

5) More emphasis needs to be placed on benefits to different socio-economic groups especially the vulnerable and food insecure rather than just acreage and yields. A comprehensive food security framework and identification of appropriate measures to ensure that the poor and food insecure actively participate in and gain from the recovery effort should be established at the start of a program.

The Banana Xanthomonas Pandemic

BXW in Uganda was first reported in Mukono District in October 2001; and in Kayunga, February, 2002. In 5 years BXW spread rapidly through all the central districts of Uganda and is threatening production in the major banana producing districts in the western and southwestern parts of the country. The disease is now confirmed in 35 districts including, Mbarara, Bushenyi, Ntungamo, Isingiro and most recently Kabale. All banana cultivars in affected areas are susceptible however incidence of 70-80% in one year has been reported for many matooke plantations while yield losses of up to 100% have been reported for many juice bananas such as Kayinja and Pisang Awak. Potential national loss, if the disease is not controlled is estimated at \$ 4b by 2010. The destruction of infected stools means a loss of food and income for farmers and the soil surface left bare, after plantations have been uprooted, has become vulnerable to erosion, especially in the hilly terrain found in much of the Great Lakes Region.

To fight the BXW there has been formulation of a long-term strategy and action plan involving research and development. The strategy emphasizes continuous monitoring of the disease, generation and dissemination of information and technologies for controlling the disease and empowering stakeholders at all levels to control it. A coordination mechanism has been established by MAAIF that includes a steering committee to guide the implementation of the BXW strategy and a technical committee to champion the efforts. A BBW working group is undertaking an awareness rising and training campaign on BXW targeting 35 affected and threatened districts. The response strategies that have been used include protecting unaffected areas; halting disease in frontline areas and dissemination of clean planting material and the use of participatory development communication tools (brochures, videos, posters, calendars) in the endemic zones. Farmer participatory methods have been employed to guide communities to develop action plans to control and manage BXW. The approach has been piloted in 4 districts in central Uganda where it was found successful.

Scaling up and out of efforts to control the spread of BXW have however been restricted due to inadequate funding. Some of the recommended control measures have been noted to be labour

intensive and or require resource inputs (for example tissue cultured plantlets, use of disinfectants) and changes in cultural practices that are difficult for farmers to implement.. Some of the cultural practices that need to change include the exchange of suckers between farmers; leaf harvesting and cultural beliefs that de-budding affects juice quality while farmers also consider it to be labour intensive. Poor crop husbandry practices especially when farmers grow juice bananas (which have also proven to be more susceptible to BXW) has exacerbated the spread of the disease which continues to affect the food security of households that rely on bananas as an income source. Phyto-sanitary measures that are being promoted include de-budding, destroying infected plants and plantations, disinfection of tools, using fire or disinfectants, stopping leaf harvesting, obtaining planting material from reputable sources, enforcing quarantine and enacting by-laws to regulate activities that affect BXW spread. The lack of awareness by farmers has lead to difficulty in implementing recommended control measures. The Macro-propagation methods have been used to re-establish plantations and NBRP has been instrumental in training of farmers in macro-propagation skills. However uptake of this technology has not been well received by farmers. The approach where by nurseries are established such that macro propagation is carried out solely for production of planting material and the method of destroying a plantlet to produce more suckers has been considered wasteful by farmers; they would rather have a plant from which they can get food and planting material rather than just for producing planting material. The National Banana programme has thus recommended that in situations where macro-propagation is used then it should be done *in situ* on-farm where a farmer can also get planting material as well as food from the same plant.

A number of lessons can be drawn from the BXW fight in Uganda. It has been realized that in order to control the spread of the disease it is important to prevent the disease from advancing to new areas by mobilizing farmers to carry out disease control practices on their own. Farmer lead participatory methods have been employed to guide communities to develop action plans to control/manage BBW. This approach is trying to mobilize the communities to own the BXW problem and to participate actively in its control. The approach was piloted in Mukono, Kayunga, Luwero and Kiboga districts, where it was found successful. Going public through public sessions has been initiated in the south western districts of Mbarara, Ntungamo, Kabale, Kisoro and Bushenyi. Plans are underway to cover the whole country however more funding is needed to support the entry point for BXW activities embracing political and administrative leadership in the districts and the communities. In endemic areas the issue of rehabilitation of plantations of affected farmers is important, therefore the dissemination of clean planting material has been used as a response strategy to fight BXW however farmers in these areas are poor and few if any can afford to buy clean planting material.

The C3P will therefore provide funds for further scaling up of activities in the areas of Mukono, Kayunga and Luwero districts and will build awareness through use of participatory methods to encourage farmers into action to vigorously control the disease. The introduction of a demand subsidy will ensure that poor vulnerable farmers will be able to gain access to clean banana planting material.

IV. TARGET AREA AND PARTNER CRITERIA

A. Target Area

CMD Intervention

It should be noted that though districts in central Uganda have been the origin of CMD and CBSD and have registered high prevalence rates for both diseases few interventions have been focused in these areas whose food security is threatened due to reliance on cassava and banana which are major staples. Districts such as Luwero have a CMD and CBSD prevalence of 86% and 67.8%; Mukono 56% and 34.7% (NCP, 2006). When CMD first emerged in Uganda in the 1980s most interventions were

initially targeted to those areas that were first affected by the pandemic in northern and eastern Uganda. In recent years the pandemic has expanded southwards thus necessitating action in the areas of central and southern Uganda to control the spread of the disease. It was therefore felt that proposed areas of intervention for the C3P should include the central districts of Luwero and Nakaseke (was originally part of Luwero) where CMD is still a big problem despite earlier interventions; Mukono and Kayunga (was originally part of Mukono district) where current CBSD re-emergence has been noted and Nakasongola which is a major supplier of cassava to the capital city Kampala and is in close proximity to highly endemic areas of Kayunga and Luwero. In addition to high prevalence rates of CMD and CBSD, Luwero, Nakaseke, Mukono, Kayunga and Nakasongola have strong Caritas and World Vision arms. Staff from Caritas have been one of the groups trained by the National Cassava Program and have had experience in carrying out multiplication and dissemination of planting material in the areas that they cover.

Table 1 - Target Provinces/District/Zone and Location of the Program Intervention for CMD

Province / District / Zone	Specific Location of Program Intervention	Total population of Province/ District/Zone	Population of Location of Program Intervention	Estimated Farmers (HHs) to be served as direct beneficiaries of the CMD program per Location*
Luwero		474,627		200
	Butuntumula		29,216	
	Luwero		28,462	
Nakaseke		137,278		300
	Ngoma		16,443	
	Wakyato		12,165	
	Kinyogoga			
Kayunga		294,613		300
	Busaana		48,160	
	Nazigo		39,146	
	Kangulumira		43,703	
Nakasongola		127,064		200
	Lwabyata		10,686	
	Wabinyoni		13,618	
	Mitanzi			
Mukono		795,393		300
	Nyenga		38,613	
	Goma		45,062	
	Kyampisi		28,594	
Total				1, 300

**Served here would include any goods or services received during the duration of the C3P project such as training, sensitization, planting material.*

Banana Intervention

The districts of Mukono, Kayunga, Luwero and Mbale are chosen as target areas for the C3P Project. The geo-targeting for C3P was also based on MAAIF's criteria for prioritization of action on BXW as follows:

- 1st Priority: Threatened areas
- 2nd priority: Frontline districts

– 3rd Priority: Endemic areas

Most interventions have been focused in areas 1 and 2 due to funding limitations. More effort is still required on the 3rd priority areas to strengthen on-going efforts by scaling out. The C3P in Uganda will therefore concentrate activities in endemic areas. The districts of Mukono, Kayunga, Luwero, Mbale are considered to still be severely endemic¹ (NBRP, 2006). In these districts banana is an important staple and food security crop. Coupled with this is the presence of strong partners with grass roots networks. World Vision is present in Mbale district and is implementing livelihood security and economic development initiatives in Mbale and Nakasongola. CARITAS Luwero covers Luwero, Nakaseke and Nakasongola. CARITAS Lugazi covers Lugazi, Kayunga and Mukono districts. The presence of strong grass root partners in the proposed intervention areas also influenced the geo-targeting.

Table 2 - Target Provinces/District/Zone and Location of the Program Intervention for BXW

Province / District / Zone	Specific Location of Program Intervention	Total population of Province/ District/Zone	Population of Location of Program Intervention	Estimated Farmers (HHs) to be served as direct beneficiaries of the BXW program per Location*
Luwero		474,627		900
	Makulubita		20,145	
	Kikyusa		24,270	
	Luwero		28,462	
	Butuntumula		29,216	
Nakaseke		137,278		600
	Semuto		25,117	
	Kapeeka		24,121	
	Nakaseke		19,716	
Kayunga		294,613		300
	Busaana		48,160	
	Nazigo		39,146	
	Kangulumira		43,703	
Mbale		745,696		400
	Nakaloke		30,653	
	Namanyonyi		19,662	
	Bukonde		16,796	
Mukono		795,393		300
	Nyenga		38,613	
	Goma		45,062	
	Kyampisi		28,594	
Total				2,500

*Served here would include any goods or services received during the duration of the C3P project such as training, sensitization, planting material.

¹ Mukono/ Kayunga(BXW prevalence in cooking bananas 24%, Kayinja 66%)
Luwero (BXW prevalence in cooking bananas 18% Kayinja 32 %)
Mbale(BXW prevalence cooking bananas 12%, Kayinja 22%)

B. Partner Criteria

- Human resource capacity
- Past experience in handling multiplication and dissemination of cassava and banana
- Proximity to endemic areas
- Past partnerships and good reputation with national programs/organizations
- Existing/current programs/projects in intervention areas
- Willingness to participate in the project

V. PROGRAM DESIGN and STRATEGY

SO1: Country stakeholders institutionalize coordinated agricultural disaster response mechanisms.

IR1: Country responses to CMD and BXW is well coordinated.

The following activities will support this IR:

1. The C3P CM will facilitate the process of constituting the CSC.
2. The C3P CM will coordinate quarterly meetings with the Country Steering Committee to share the quarterly report, C3P achievements and receive feedback from steering committee.
3. The C3P CM will facilitate the development of collaborative linkages with related programs, projects and national institutions involved in the control of BXW and CMD by facilitating the co-option of a member of the CSC to the BBW task force and NANEC. linkage will also be established with the food security working group.
4. The C3P CM together with the Monitoring and Evaluation Coordinator will formulate an M&E plan and set up an M&E system for the C3P project activities in Uganda.

Outputs

1. CSC is established.
2. 6 quarterly meetings held during the life of the project.
3. M&E system set up
4. Collaborative linkages developed with related projects

IR2: GIS technology links data on diseases to data on vulnerability and food insecurity.

The following activities will support this IR:

1. Surveys will be completed in the field collecting information on food security, CMD and BXW prevalence rates.
2. GIS experts will collate baseline geographic information to know the location of CMD and BXW infected zones and link this information to food insecure areas in Uganda.

Outputs

1. Reports and database on status of food security, CMD prevalence and BXW prevalence.
2. GIS map on food security, risks and vulnerability.

IR3: Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters.

The following activities will support this IR:

1. Identification of critical components of an effective disaster's response system.
2. Dissemination of information among different stakeholders
3. Coordinating action among stakeholders
4. Development of early warning system
5. Development of a plan for dissemination of early warning information.

Outputs

1. Components of agricultural disasters response approach identified
2. Collaborative framework for disaster responses established with a network of existing institutions.
3. Plan for early warning system.
4. Plan for dissemination of early warning information.

S02: Farmers employ effective measures to control CMD and BXW

IR1: Effective control of CMD is achieved through multiplication and distribution of CMD Resistant varieties and promotion of improved management practices.

The following activities will support this IR:

1. Geo-targeting of intervention areas
2. Formalizing partnerships with 3 NGO/CBOs in identified intervention areas will be done through a signing of MOUs after approval of partner proposals.
3. Scouting to identify sources of clean material, quantities available and prices will be done while taking care of quality control and phyto-sanitary issues.
4. Setting up strategically located multiplication sites for multiplication of clean CMD and CBSD resistant planting material...
5. Situational analysis will be carried out by partners to identify and register community based cassava growers and the most vulnerable households to which the on farm vouchers will be targeted.
6. Promotion of seed distribution system that makes use of a demand subsidy (voucher and seed fairs)
7. Training and awareness building for extension workers and farmers using participatory methods and tools. The TOTs who will be trained at the regional level will train in-country extension teams and farmers on CMD management.

Outputs

1. C3P targeted areas defined
2. Partnerships established with local NGO/CBOS involved in multiplication and dissemination of CMD resistant planting material.
3. Locations, quantities and quality of planting material of CMD and CBSD resistant varieties determined.
4. 300 vulnerable farmers identified and supplied with vouchers to access planting material from identified community based cassava growers to plant $\frac{1}{4}$ of an acre of CMD and CBSD resistant cassava. An additional 420 banana farmers who are willing to do crop rotation will also be provided with cassava cuttings.
5. 1,000 farmers access resistant planting material free of charge. Planting material will be purchased by CRS 's partners and transported to targeted areas and given out free of charge to farmers through designated farmer groups. Each farmer will be provided with material to plant $\frac{1}{4}$ of an acre. These farmers will establish gardens and will be obliged to give out planting material to at least 1 other farmer in their communities for establishment of $\frac{1}{4}$ acre each.
6. Partners will establish a total of 4 ha of CMD and CBSD resistant varieties for multiplication during the length of the project. This is meant to provide a sustainable source of planting material for the community.
7. Regional training: a team of 5 extension staff trained in CMD management approaches.
8. Country level training: 30 partner staff, 22 extension workers and 1,720 farmers trained by country training teams in CMD management.

IR2: Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties.

The following activities will support this IR:

1. Geo-targeting of intervention areas

2. Formalizing partnerships with 3 NGO/CBOs in identified intervention areas will be done through a signing of MOUs after approval of partner proposals.
3. Situational analysis will be done by partners to identify farmer preferred varieties and also identify 840 vulnerable households (households that have lost all their banana crop to the disease and as a result are threatened by food insecurity). Households will be registered and categorized according to infection status/vulnerability. About 50% of these farmers (420 farmers) will also be identified for crop rotation of bananas with cassava. Local nursery operators will also be identified in this exercise and partnerships formalized.
4. Procurement of 105,050 tissue culture plantlets from a private laboratory will be done by CRS's partners. Multiplication of clean planting material will be undertaken by the same private laboratory. Hardening off of plantlets will then be done on 7 partner established and operated nurseries and any other existent local nursery each of 0.12 acres in the different target areas. After 2 months of hardening-off of the suckers they will be given out to farmers at a subsidized cost.
5. 840 farmers will access wilt escaping planting material using vouchers and material will be purchased from nursery operators. This will provide incentive for nursery operators and act as a future source of plating material for the community. 420 vulnerable households will get suckers and resistant Cassava cuttings using vouchers. Vouchers will support crop rotation and substitution for hard hit farmers that need support in the short term to mitigate against the effects of BXW
8. Training and setting up of macro- propagation sites to strengthen private propagation of clean material on commercial basis. Three Macro- propagation sites will be established and farmers will be trained on the day to day management of the sites to raise clean planting material for sale to fellow farmers. CRS will assist in stimulating demand through the use of vouchers. This will promote establishment of farmer managed sustainable sources of quality of planting material .
9. 1,660 farmers access tissue cultured suckers at subsidized cost of 750UgX. Per sucker (75% of 1000 Ugx.) from the nurseries.
9. Training and awareness building for extension workers and farmers using participatory methods and tools. The TOTs who will be trained at the regional level will train in-country extension teams and farmers on BXW management.

Outputs

1. C3P targeted areas defined
2. Partnerships established with local NGO/CBOS involved in control of the Banana Bacterial Wilt disease in Uganda.
3. 840 vulnerable households identified of which about 50% of the farmers are open to crop rotation.
4. 105,050 plantlets procured from private tissue culture laboratory (it is expected that 5% of the plantlets are lost during the process of hardening off in the nursery. This figure thus takes into account the loss that may be experienced by each partner).
5. Formal partnerships established with existing nursery operators in target districts
6. 7 nurseries and 3 macro-propagation sites established
7. 1,660 farmers access banana wilt escaping planting material through cost sharing and 840 through vouchers.
8. Regional training: 5 extensionists trained in BXW management approaches
9. Country level training: 30 extension staff and 2,500 farmers trained

Key Assumptions and Risks

Assumptions

- Availability of national information system to supply information
- Availability/ willingness of regional institution to house disaster network
- Stability of biotic and abiotic factors
- Efficient national and regional coordination mechanisms

- Favorable policy environment

VI. IMPLEMENTATION CALENDAR (see Excel Worksheet)

Table 3- Implementation Calendar for C3P in Uganda

VII. MONITORING AND EVALUATION

(See annex 5 of C3P proposal submission – additional output data)

USAID Reporting requirements for C3P include quarterly reports for the life of the project. The first quarterly report is due August 7, 2006. Quarterly reports will also be due on the 7th of November 2006, February 2007, May 2007, August 2007, and final quarter due November 2007.

USAID requests a final M&E plan to be submitted for approval in September 2006. The final M&E plan will include a concise list of indicators to be tracked across all countries as well as monitoring guidelines and reporting formats.

USAID has specifically noted an interest in keeping M/E lean and a premium placed on achieving the minimum outputs per each country as well as fostering a learning environment within and between countries.

USAID has underlined the importance of frequent reporting above and beyond what is outlined in an M&E plan. C3P countries will be asked to produce brief, short documents that summarize some piece of analysis, methodological approach, or best practice in your country program. These 'briefs' will serve first of all as a medium for exchange of information and best practices among the partners in the six countries of C3P, as a major benefit of participating in a regional project. They will also be useful for reporting on the project back to USAID and more broadly to the development and relief communities. We all hope that C3P will become a kind of model, and good documentation and communication will be key.

A baseline survey is currently being planned as part of the GIS and food security components of this program. A key component of this baseline survey will be a household survey conducted in all six of the C3P countries. This survey is expected to begin as early as August in some countries.

Monitoring and Evaluation plan

To determine the impact of the project baseline information on some indicators such as CMD prevalence, BXW prevalence and food security status will be collected at the beginning of the project using the BXW, CMD and Food security surveys. Ex-post information on specific indicators will be collected in the final evaluation which will be carried out at the end of the project and a comparison of indicators (baseline and ex-post) will show the impact of the project. M&E will also be done at the intermediate results level to determine the project performance and progress.

Table 4- Monitoring and Evaluation plan for C3P Uganda

Level	Key Indicators	Frequency of collection	Responsible for collection
Intermediate results			
A regional response to CMD and BXW is well coordinated	<ul style="list-style-type: none"> Minutes of the Country steering committee meetings 6 progress reports on CMD and BXW submitted 	<ul style="list-style-type: none"> Quarterly meetings Quarterly reports from Nov. 2006 Project briefs produced every 6 weeks 	CRS
GIS technology links data on disease to data on vulnerability and food security	<ul style="list-style-type: none"> Maps showing situation analysis on disease, vulnerability and food security 	<ul style="list-style-type: none"> At beginning of the projects At the end of the project 	IITA
Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters	<ul style="list-style-type: none"> Variety of methods used to disseminate agricultural information. 2 articles / publications 	<ul style="list-style-type: none"> Quarterly reports Bi-annual articles/ publications 	Information officers of existing institutions and implementing partners.
Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices	<ul style="list-style-type: none"> 4 ha of multiplication sites established. 3,480 bags of resistant cassava distributed. 2 successful CMD resistant distribution channels used. 1, 720 farmers access resistant cassava varieties 	<ul style="list-style-type: none"> Monthly and quarterly reports 	CRS and the Implementing partners(Caritas and World Vision)
Effective control of BXW is achieved through multiplication and distribution of wilt-escaping varieties	<ul style="list-style-type: none"> 7 nurseries and 3 macro-propagation sites established. 105,050 wilt-escaping suckers procured. 2 successful BXW free suckers distribution mechanisms used. 2,500 farmers access 40 disease free banana suckers each . 	<ul style="list-style-type: none"> Monthly and quarterly reports 	CRS and the Implementing partners(Caritas and World Vision)

Reporting and documentation

Reporting formats will be developed by CRS to guide the implementing partners and to ensure that data on the above indicators is collected monthly. Monthly report submissions from the partners will enable CRS to track progress in project implementation as well as act as an early warning system for any arising challenges. Quarterly reports will be discussed by the Country Steering Committee and submitted to the COP. It is expected that four (4) quarterly reports will be submitted every 7th of August 2006, November 2006, February 2007, May 2007 and August 2007. A final project report will be submitted in November 2007.

In addition to the Quarterly reports, four project Briefs will be submitted. The briefs will inform and educate stakeholders and the community at large of the in country on-going work on CMD and BXW. The briefs will contain an update on the CMD and BXW prevalence in the country, progress made in intervention activities as well as best practices and lessons learnt from on-going work.

Briefs

1. CMD and BXW pandemic and its impact on Food security in endemic zones of Uganda.
2. Use of vouchers and fairs for vegetative propagated crops in Uganda: the case of cassava and bananas.
3. Tissue culture Vs macro propagation for rapid multiplication of banana in Uganda.
4. Use of participatory training and dissemination methods and tools in the fight against BXW.

VIII. BUDGET

Table 5- Budget for C3P activities in Uganda

TOTAL UGANDA BUDGET: \$272,796 USD

Banana 63%: \$172,686

Cassava 37%: \$100,110

OBJECTIVES	STRATEGIC ACTIVITIES	FINANCIAL RESOURCES		CASHFLOW
STRATEGIC OBJECTIVE 1: Regional actors institutionalize coordinated agricultural disaster response mechanisms	I.R. 1.1 National response to CMD and BXW is well coordinated			
	1. Hold regular quarterly coordination meetings with the country Steering committee	CRS administrative budget		Quarterly
	I.R.1.2. GIS technology links data on disease to data on vulnerability and food insecurity			
	1. Collect baseline information about Food Insecurity, BXW and CMD	Regional / National Budget		
	2. Disseminate the information collected regionally by the GIS system	Regional Budget		
	I.R. 1.3. Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters			
STRATEGIC OBJECTIVE 2: Farmers employ effective measures to control CMD and BXW	I.R. 2.1. Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices			
	I.R. 2.2. Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties			
		Bananas	Cassava	Cash flow
	3. Personnel	38,327	37,241	Quarterly
	4. Establishment of multiplication sites.	0	24,289	Monthly
	5. Establishment of nurseries & macro-propagation sites	72,031	0	Monthly
	6. Capacity building & vouchers	25,547	16,425	Monthly
	7. Use of participatory communication tools	9,066	0	Quarterly
	8. Office supplies and equipment	8,532	8,532	Quarterly
	9. Travel and transportation	6,000	6,000	Quarterly
	Other direct costs			

	10. Situational Analysis/ PRA survey	2,037	2,037	Monthly
	11. Monitoring and Evaluation (inc. participatory M&E and regular Monitoring)	5,560	0	Quarterly
	12. visibility/publicity	957	957	Quarterly
	13. communication	2,300	2,300	Quarterly
	14. Bank charges	131	131	Quarterly
	15. car service	489	489	Quarterly
	16. motorbike service and maintenance	978	978	Quarterly
	17. Project overheads (10%)	731	731	
	Sub-total	172,686	100,110	
	GRAND TOTAL		272,796	

See Annex for detailed budget breakdown

References

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Ntawuruhunga P., Legg J.P., Dixon A. G. , Omongo C., Obiero H., Lukombo S.,Kanyange M., Kimani E., 2006. Strategies for controlling the cassava mosaic disease pandemic in Eastern and Central Africa through Resistance breeding programs. A paper presented at the C3P Regional Planning Workshop 13-15th June 2006 Hotel des Mille Collines Kigali, Rwanda.

Patricia Bonnard, 2004. An Evaluation report of USAID/OFDA efforts against Cassava Mosaic Disease, 1997-2004. Final Draft

NCP, 2006. CMD and CBSD survey. National Agricultural Research Organization, National Cassava Programme.

NBRP, 2006. BXW prevalence survey. National Agricultural Research Organization, National Banana Research Programme.

ANNEX
Detailed Breakdown of the budget (*Double click on table to go to Excel Sheet*).

Sub total			15,676			12,903		13,392	
Use of participatory communication tools									
video shows at parish level/schools									69
video translation in lugisu (Mbale)									1100
Posters for TOTs									100
Banana production manual for TOTs									
Sub total									
Office supplies and equipment									
Motor cycles	1	5,000,000	2,716	2	10,000,000	5,432	1	5,523,000	3,000
Computers	1	2,000,000	1,086	1	2,000,000	1,086	1	3,129,700	1,700
Office supplies	2	500,000	272	2	500,000	272	2	2,761,500	1,500
bicycles	0	0	0	0	0	0	0	0	0
Sub total			4,074			6,790			6,200
Travel and transportation									
field visits (seed distribution, local travel , insurance, fuel, e.t.c)		5,523,000	3,000	18	5,523,000	3,000	16	11,046,000	6,000
Sub total			3,000			3,000			6,000
Other direct costs									
PRA survey to identify vulnerable HH	1	2,500,000	1,358	1	2,500,000	1,358	0	2,500,000	1,358
Monitoring and Evaluation (inc.participato	1	0	0	0	0	0	0	0	0
visibility/publicity	10	1,530,000	831	7	1,073,910	583	6	920,500	500
communication	15	2761500	1,500	0	2,761,500	1,500	16	2,945,600	1,600
Bank charges	0	150000	81	0	150,000	81	16	184,100	100
car service	0	0	0	15	1,800,000	978	0	0	0
motorbike service and maintence	15	1,200,000	652	15	1,200,000	652	15	1,200,000	652
project overheds (10%)								0	
Sub total			4,422			5,152			4,210
		UGX 177,549,300	\$96,442		UGX 141,888,610	\$77,071		UGX 153,160,012	\$83,194

conversion rate=1US\$=1841UGX.

PARTNERS	Number of bags/suckers		Acerage of multiplication plots			Acerage of nurseries			Acerage of Macro-prop	
	Cassava (bags)	Bananas(suckers)	No. Cassava sites	Cassava (Ac)	Cassava (ha)	No. Banana sites	Banana(ac)	Banana(ha)	no. of sites	Banana a
Caritus Kasana-Luvero	1,420	63,000	2	4.9	2	3	0.372	0.1488	1	13
Caritas Lugazi	1,620	25,250	1	2.45	1	2	0.248	0.0992	1	5
World Vision	400	16,800	1	2.45	1	2	0.248	0.0992	1	3
TOTAL	3,440	105,050	4	9.8	4	7	0.868	0.3472	3	22

NOTES:

Bananas

each macropropagation site =10m*30m

100 suckers used to establish macropropagation site will generate 500 suckers.

3 macropropagation site will produce 1500 suckers

Cassava

total number of bags needed number of farmers

Total number of bags needed for whole project =348 3440 1720

Each multiplication site=2.5 acres/1 ha

Each Ha produces about 120 bags of planting material

4 ha of multiplication plots will produce 480 240

balance needed will be provided from scouting 2960 1480

