



**Kenya
C3P Work Plan**



**July 2006
Submitted on behalf of the
Kenya C3P Country Coordinating Unit (CCU)**

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4. **Title of the proposed project:** Crop Crisis Control Project in Kenya
5. **Regions Targeted by the project:**
 1. Nyanza Province (Kisii, Suba, Homabay, Kuria, Migori, Rachuonyo, Kisumu, Nyando, Bondo and Siaya Districts)
 2. Western Province: Busia and Teso districts.
6. **Number of targeted beneficiaries:** 12,000 poor households in the targeted regions.
7. **Proposed project start and end dates:** Start date-July 1, 2006: End date September 30, 2007.
8. **Project budget:** US \$ 181,332.

1.0. EXECUTIVE SUMMARY

Cassava and Banana are important crops in Kenya, grown by many poor households for both food and income. In cassava growing areas of Western Kenya, the Cassava Mosaic Disease has resulted over 80% yield losses estimated at 150,000 mt and valued at over 10 million US \$. The CMD has caused yield declines from 10 mt to less than 3 mt per ha and reduced area under cassava production from 25,000 to less than 17,000 ha in western Kenya. This has rendered the poor small-scale farmers food insecure.

In the past decade, efforts to mitigate CMD impacts in Western Kenya have been coordinated by Kenya Agriculture Research Institute (KARI) based at Kakamega. Through funding from OFDA and USAID, KARI set up a national coordination steering committee comprising of MoA, KEPHIS, KARI and representative NGOs. The national steering committee has worked closely with the provincial stakeholders and district steering committees to coordinate multiplication and distribution of CMD free planting materials to farmers. A three tier multiplication system (primary, secondary and tertiary) has been used which resulted in farmers planting over 22,000 ha in western Kenya with CMD free materials by 2004. To enhance understanding and management practices of CMD, 124 extension agents and 1,264 farmers have been trained on rapid multiplication, distribution and management of CMD free materials.

Banana Xanthomonas Wilt (BXW) disease has not been reported in Kenya but it has been reported in the neighboring border regions of Uganda and Tanzania. The threat of the disease to banana farmers in Kenya is significant because over 20% of the country's population depend on banana for food and as a source of household income in much of the growing areas. So far, the work on BXW has been limited to the formation of a task force and a survey conducted by KARI which did not confirm presence of BXW in Kenya. The task force has mostly been inactive.

Through C3P, CRS Kenya proposes to mitigate the effects CMD and BXW on the livelihoods of poor small-scale farmers in Western Kenya. The C3P will be implemented by three partners selected based on their presence in the targeted region, staff capacity to implement the program, past working experience with CRS and with multiplication of CMD free planting materials.

The Kenyan C3P work plan will be implemented through a Country Coordinating Unit (CCU) whose responsibilities will include supporting selected sub-grantees / sub-contractors to carry out the country work plans, managing the work of these sub-grantees / sub-contractors, 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 refer 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.

The expected C3P outputs in Kenya will include rejuvenation of the BXW task force and strengthening of the existing CMD steering committee; training of 50 extension agents and over 10,000 farmers on BXW recognition and management; multiplication and distribution of clean cassava planting materials to over 12,000 households and at least one cassava and banana related micro-enterprise set up in each of the 10 districts. The

CRS and the CCU for Kenya are requesting 181,332 US dollars for the implementation of the Kenya C3P work plan for a period of 15 months starting in August 2006 through October 2007.

2. PROBLEM ANALYSIS

Country level Coordination

In Kenya, a National Coordination team for CMD management was put in place in 1998. The National Steering committee has representatives from KARI, KEPHIS, Ministry of Agriculture, two farmer organizations, two NGOs and donor organizations. The steering committee is chaired by the Director of KARI's Kakamega Regional Research Station based in Western Kenya. Initially, steering committee meetings were held twice a year, but since 2002 the frequencies of the meetings have changed to once a year due to funding problems. Between 1998 and 2002, USAID through OFDA, FAO, Rockefeller and Gatsby Charitable Foundation (UK) pooled resources to fund CMD activities in Western Kenya. In 2002, only OFDA funded the CMD work and with the limited resources, the frequency of meetings at the national levels was reduced to one per year.

Below the National Steering Committee, there are Stakeholder Committees that coordinate CMD management activities at the provincial and district levels. At district and provincial levels, discussions related to CMD were tied to the regular stakeholders meetings which are usually called to discuss agriculture and livelihood in general. These meetings are funded by the various stakeholders who initiate them including NGOs and MoA. However, the meetings are not regular and usually are not specific to CMD related problems. This has negatively impacted on monitoring and sharing of information related to the planting of CMD free materials.

Linkages to regional CMD management initiatives have been through IITA staff based in Kampala Uganda, who have been participating in the National Steering Committee meetings as well as providing linkage to EARRNET, the ASARECA network that promotes research in cassava production.

After BXW outbreaks were reported in neighboring countries, KARI initiated the formation of a task force comprising of KARI, KEPHIS, Ministry of Agriculture and farmer representatives in 2004. The task force was linked to the regional BXW activities through linkages to BARNESA. KARI conducted a survey that confirmed the absence of BXW in western Kenya. Through the task force, 3 KARI staff attended training and planning workshops on BXW management in Uganda. After the confirmation of the absence of BXW, the task force has not met again.

For both CMD and BXW, the major challenges to effective coordination in country have been

- Staff changes or transfers that necessitate continuous periodic staff training. During 2006, there was mass transfer of agriculture extension staff in Kenya. New staff in the target areas will require training and exposure to the CMD and BXW problems.

- Limited funding for coordination activities.
- Lack of appreciation of disease threats, e.g. BXW not present in Kenya, so not considered a major threat.
- The fact that most of the NGOs have included CMD as just one of their activities.

C3P Kenya project lays its emphasis on CMD and BXW. The CRS- Kenya program has recruited a C3P Country Manager (CPM) whom will be fully responsible for the coordination of CMD and BXW activities in the country. C3P Country Manager will strengthen the existing CMD committees at both national and regional levels. C3P in CRS-Kenya will also rejuvenate the task force for BXW. The C3P will initiate and support national and regional stakeholder meetings specific to the two diseases.

Cassava Mosaic Disease

In Kenya cassava is grown in over 90,000 hectares with an annual production of about 540,000 tons. Cultivation is mainly in western Kenya comprising of Nyanza and Western provinces (60%), Eastern (10%) and Coast Provinces (30%). The crop is grown by small holder poor households for subsistence and it is an important food security crop. Major constraints of cassava production include pests and diseases, poor agronomic practices, low yielding varieties, high cyanide levels, lack of clean planting materials and long maturity periods.

Cassava mosaic disease (CMD) is the most important, as it results in highest yield losses. CMD was for over a century recognized on cassava, but was not considered a major problem. In the mid 1990s the situation changed dramatically when an unusually severe form of CMD caused yield losses of 80-100% on farmers' fields. Between 1995-1998 annual yield losses of cassava was approximated at 150,000 metric tons valued at US\$ 10 million. In Nyanza province alone, yields declined from 7-10 t/ha to less than 3 t/ha while the area under production has declined from 25,000 to 17,000 ha. The disease initially spread from Uganda to the neighboring Kenyan districts of Teso, and Busia, and has now spread to other districts in Western and Nyanza provinces forcing farmers to abandon cassava cultivation. All the local varieties have been devastated and affected farmers are experiencing acutely reduced incomes and general insecurity at the household level.

The International Institute of Tropical Agriculture (IITA) through the East African Root Crops Research Network (EARRNET) in collaboration with the Kenya Agricultural Research Institute (KARI) initiated a program in 1997 to mitigate the effects of CMD in western Kenya. Gatsby Charitable Foundation (UK), Office of Foreign Disaster Assistance (OFDA, USA), FAO and Rockefeller Foundation pooled resources to restore cassava cultivation in the region. The main objective was to develop and distribute CMD resistant, high yielding varieties with good tuber qualities to farmers. This involved germplasm enhancement and exchange from Uganda. A total of 1404 clones have been introduced from Uganda to Kenya through Alupe Open Quarantine station for evaluations and 22 clones so far are under multiplication in 12 sites in Nyanza and western Provinces. The clones have been introduced and evaluated in KARI centers in

preliminary yield trials, and advanced to on-farm trials through participatory evaluation in farmers' fields.

To accelerate the multiplication and distribution of high yielding CMD resistant varieties, a three-tier (primary, secondary and tertiary) multiplication system was adopted to allow all classes of farmers' access to the clean planting materials. The selected clones are first bulked at primary sites which are usually government controlled sites (Farmer Training Centers, Government Prison Farms, Research Institute farms), then moved to secondary sites at district levels which are managed by the district steering committees especially lead by the Ministry of Agriculture Extension Staff. The materials then trickle to tertiary multiplication sites managed by individual farmers, farmer groups and other partners (NGOs, CBOs etc).

Although large quantities of planting materials have been produced at the primary level, this has not translated to farmers planting large areas, which indicates losses of planting materials as they move from primary, secondary, and to tertiary sites and finally the farmers. Although most primary bulking sites have irrigation facilities secondary and tertiary bulking sites rely on rainfall. Low and poorly distributed rainfall leads to poor sprouting and growth of the cassava cuttings, reducing the number of cuttings available for the next stage. In some of the secondary and tertiary bulking sites the establishment has been less than 60%. Thus, there is need for a more farmer led propagation of resistant CMD materials and controlled primary, secondary and tertiary multiplication.

At the secondary and tertiary sites, farmers lack knowledge on how to conserve cassava planting materials after harvesting the roots during the dry spell. In some cases livestock are allowed to graze in the cassava fields. This results in the cassava planting materials drying-out and being used as fire wood or destroyed by grazing livestock. The multiplication of CMD free planting materials requires phytosanitary measures such as roguing or uprooting of diseased plants. Poor food insecure households involved in bulking at tertiary levels are reluctant to rogue the diseased plants resulting in the spread the disease, reducing the amount of planting materials. Educating farmers on phytosanitary measures and conservation of planting materials would go along way in reducing the losses at secondary and tertiary levels.

In Kenya, there have been two important trends concerning the status of CMD. Since the onset, promotion of CMD free planting material has been concentrated mainly in western Kenya districts of Busia, Teso and Siaya where symptoms were noted first in Kenya.

- Data from areas of Western Kenya towards the border with Uganda showed reduction in both incidence and severity of CMD in comparison with the previous years¹ (Legg 2003).
- There is evidence for continued movement of the severe CMD infection into southern Nyanza (Homabay , Kuria, Migori, Rachuonyo, Suba and Gucha districts)

Banana bacterial wilt in Kenya

Banana is a major fruit crop in Kenya grown for both subsistence and commercial use. It is estimated to cover 74,000 hectares (about 2 % of total arable land), ranging from sea level to 1800 m above sea level. In terms of production, over a million tons are obtained per year. Nyanza and western provinces account for 64.4 % of production while Central and Eastern provinces account for 26 % of production. The crop is predominantly grown by small scale farmers who have an average holding of 0.3 hectares making up to 13 % of the total farm area. Recently banana has become an important cash crop for semi-intensive medium scale farmers who supply the urban markets in the country. The continued availability of a harvestable bunch from a banana stool is especially important for these farmers who are mainly women because it contributes to the year round food security and income. The commonly grown varieties are East Africa Highland bananas and apple bananas in Western and Nyanza provinces, while Cavendish and Kampala types are common in Central and Eastern provinces.

After BXW outbreaks were reported in neighboring countries, KARI initiated the formation of a task force comprising of KARI, KEPHIS, Ministry of Agriculture and farmer representatives in 2004. The task force was linked to the regional BXW activities through representation in BARNESA. The task force met and organized a survey that was carried out by KARI in western Kenya. Through the task force, 3 KEPHIS staff attended training and planning workshops on BXW management in Uganda. After the confirmation of the absence of BXW, the task force has not met again. No incidences of BXW were observed. In the course of 2005 there was another report of a BXW outbreak in Western Kenya. This prompted another survey in Western and Nyanza Provinces in November 2005, by a team from KARI-Thika, IITA and INIBAP also did not find any BXW outbreaks. However, it was noted that banana trade, at the porous boundaries, is unregulated and thus infected materials could easily cross the border into Kenya. Most farmers were not aware of BXW but some agricultural and extension officers were aware of the BXW symptoms.

For BXW, there is a need to prepare the communities especially those living along the borders with Uganda and Tanzania, to recognize the disease and develop appropriate management measures that can reduce the introduction of the disease. This would include disease surveillance and awareness programs. There is also a need to prepare international and local NGOs, Ministry of Agriculture and CBOs so that they can coordinate responses to BXW outbreak effectively.

3. GOAL, OBJECTIVES AND EXPECTED OUTCOME

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

SO1: Country stakeholders institutionalize coordinated agricultural disaster response mechanisms.

- **IR1:** Country responses to CMD and BXW is well coordinated.
- **IR2:** GIS technology links data on diseases to data on vulnerability and food insecurity.

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

S02: Farmers employ effective measures to control CMD and BXW

- **IR1:** Effective control of CMD is achieved through farmer led propagation and distribution of CMD resistant varieties and promotion of improved management practices.
- **IR2:** Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties.

Key Outputs:

- Up to 20 farmer groups in the 10 districts of operation with membership of at least 25 farmers each identified.
- Establishment of 60 Ha bulking plot of clean cassava planting materials with farmer groups.
- 6,000 farmers in Western Kenya access CMD resistant materials via OFV from primary and secondary bulking sites.

4. TARGET AREA AND PARTNER SELECTION CRITERIA

4.1.1 Target Area

In Kenya 60% of the national cassava production is from the Lake Victoria region of Nyanza and Western Provinces, with the rest coming from Eastern and Coast Provinces. In the past decade, Nyanza and Western Provinces have been devastated by CMD. In the past a great part of the CMD mitigation effort has concentrated on western Province, with little being done in Nyanza province, especially in the southern parts covering Homabay, Rachuonyo, Suba, Migori and Kuria districts. Monitoring and diagnostics surveys carried out in the region in 2003-2004 revealed that both incidence and severity of CMD were moderate to low in Western Province, an effect that has resulted from increased uptake of CMD resistant varieties. It was also noted that many of the diseased fields were in southern parts of Nyanza, especially in Homabay and Migori. Thus it is proposed that the main C3P activities be focused on southern Nyanza (Homabay, Rachuonyo, Suba, Migori and Kuria districts) and central Nyanza (Siaya, Bondo, Kisumu and Nyando districts) that have not received much support in the past and currently have high incidence and severity of CMD. Parts of Busia district in western Kenya where the disease is still prevalent will also be targeted.

Most of the districts chosen border Lake Victoria and are characterized by low and poorly distributed rainfall, poor soils and cultivation of less drought tolerant crops such as maize and beans by poor small-scale farmers. As a result of crop failures and lack of food, malnutrition has become a significant problem especially among the children and the most vulnerable members of the society (Table 1). In the past two years, the districts have received food aid through Food for Work or general food distribution. Poverty levels are high in the districts and in the majority of the targeted districts, over 60% of the

population live below 1 US \$ a day. Farmers' in the targeted districts are experiencing acute reductions in family income and general food insecurity at the household level.

CRS Kenya implements its programs through traditional partners which include the Catholic Dioceses. In the targeted districts, there is a strong presence of CRS partners. The Catholic Diocese of Homabay is very strong in the southern parts of Nyanza. In the central and northern Nyanza, there is the presence of Kisumu Arch Diocese.

The availability of planting materials at primary and secondary bulking sites was also considered in the selection of the districts to be covered by the project. In the districts covered by the Catholic Diocese of Homabay, there are 21 secondary bulking sites while in those districts covered by Kisumu Arch Diocese, there are 19 secondary bulking sites. These can act as sources of good virus free planting material. In the past three years, bulking activities at the sites has slowed down. The numbers of varieties being multiplied are only two. The primary and secondary sites mainly serve NGOs and CBOs who purchase the CMD free planting material for distribution to farmers.

Table 1. Target districts for CMD interventions.

Districts	Estimated Population 2005	Estimated No. hh	Estimated Population Density	% below Poverty line	Food Aid Distribution 2005-2006	% Malnutrition Rates	Estimated hh to be targeted
Homabay	332,079	67,040	249	73	Yes	13	1,500
Suba	181,138	33,987	147	61	Yes	8	1,500
Rachuonyo	340,190	68,152	325	58	Yes	6	1,500
Migori	603,159	113,930	257	38	Yes	16	2,000
Kuria	184,771	28,839	261	86	No	-	1,000
Nyando	357,393	68,371	257	72	Yes	7.5	500
Kisumu	556,457	123,341	549	67	No	8	500
Siaya	491,448	117,955	316	85	Yes	7.5	1,000
Bondo	259,792	56,207	242	66	Yes	7	1,000
Busia	381,726	84,148	330	72	Yes	-	1,500

For BXW activities, the country project will first targets areas, districts closer to border regions of affected countries where communities exchange materials (Table 2)

Table 2. Target districts for BXW interventions.

Districts	Estimated Population 2005	Estimated No. hh	Estimated Population Density	% below Poverty line	Food Aid Distribution 2005-2006	% Malnutrition rates	Estimated hh to be targeted
Homabay	332,079	67,040	249	73	Yes	13	500
Suba	181,138	33,987	147	61	Yes	8	1,000
Migori	603,159	113,930	257	38	Yes	16	2,000
Kuria	184,771	28,839	261	86	No	-	1,000

Gucha	460,939	89,776	698	59	No	8	2,000
Kisii	498,102	99,701	556	52	No	6	2,000
Siaya	491,448	117,955	316	85	Yes	7.5	500
Bondo	259,792	56,207	242	66	Yes	7	500
Teso	186,934	39,433	334	67			1,000
Busia	381,726	84,148	330	72	Yes	-	1,500

4.1.2. Partner Criteria

To achieve C3P objectives within the stipulated time the activities will be implemented by CRS Kenya, working together with two of its traditional partners who have been operating in the targeted region for a long-time. The partners will include the Catholic Dioceses of Homa bay and Kisumu and Rural Energy and Food Security Organization (REFSO), an NGO working in Busia district. These partners have been selected based on their capacities to implement projects on the ground and past experiences on multiplication and distribution of clean cassava planting materials.

In the implementation of C3P workplan, CRS Kenya will maintain contacts with international NGOs and organizations such as FAO, ACDI VOCA, CARE Kenya, World Vision, Action Aid and FHI in order to promote and encourage maximum synergy and collaboration.

The Diocese of Homabay covers the districts of Homabay, Rachuonyo, Suba, Migori and Kuria. The diocese has a development office headed by a development coordinator who coordinates health, agriculture, agro-enterprise, water and sanitation and peace building projects.

In agriculture CRS Kenya has implemented several agricultural projects with the Diocese. These include the Agriculture and Environmental Project (2000-2005), the Agriculture Commercialization project (2003-2006) and the Grain Storage Project (2001-2004). The major interventions have been promotion of improved farming technologies including drought tolerant crop varieties of sorghum, maize, cassava, sweet potatoes, pulses etc. The Diocese has successfully followed an agro-enterprise approach especially for marketing of groundnuts, sunflower and sweet potatoes. It has also been involved in the multiplication and distribution of CMD free cassava planting materials. The Diocese has experience in conducting Seed Fairs as an approach to provide access to planting materials and at the same time supporting local agricultural markets. It has well trained staff that can effectively implement the C3P activities. The Diocese has established and trained over 35 farmers groups comprising of between 100 and 150 members that can be mobilized for C3P activities.

The Diocese of Kisumu covers the districts of Siaya, Bondo, Kisumu and Nyando. Siaya and Bondo are the main cassava growing areas in the region and cassava cultivation are severely affected by CMD. The Diocese has a development office based in Kisumu with staff in the Agriculture Sector. CRS Kenya started working with the Diocese in October 2005 implementing a project on Lucrative Legumes. The Diocese has 3 staff in

Agriculture and has formed and supports over 50 farmers groups. It has good links with the Ministry of Agriculture extension staff.

REFSO is a local Community Based organization working in Western Kenya especially in Busia, Bungoma and Teso districts. REFSO has been involved in the multiplication and distribution of disease free cassava planting materials in Western Kenya. It has staff trained in rapid multiplication and distribution of cassava planting materials.

In addition to the diocesan staff, all the partners mentioned above have experience working and collaborating with other institutions. These partners have very close working relationships with Ministry of Agriculture at the district and divisional levels, other CBOs, National and International Agricultural Research Institutions (KARI, CIAT, ICRISAT etc) as well as with other NGOs, development agencies or donors.

5. PROGRAM DESIGN AND STRATEGY

Strategic Objective 1: Country stakeholders institutionalize coordinated agricultural disaster response mechanisms.

IR1: Responses to the CMD pandemic and the BXW threat in Kenya are well coordinated.

Strategy

- Strengthen the already existing Cassava National Steering committees.
- Revive the previously formed but inactive BXW task force.

Activities

CRS Kenya will organize a stakeholder's steering committee meeting to inform the stakeholders about the C3P project. The stakeholders steering committee meeting will be held in the second week of August 2006 and will include CRS, USAID, KARI, IITA, KEPHIS, Farmer Representatives, Implementing partners, other NGOs and Provincial directors of Agriculture from Western and Nyanza provinces.

At the district levels, the implementing partners will establish a district multiplication and distribution consortia comprising of all principle stakeholders in the district. These will develop a joint plan for the implementation of the C3P project. Key activities for the district committee will be to determine the overall structure of the program and the approach to be used, identify all the contributing partners at various district levels, and develop a sound monitoring and evaluation system to assess the progress against the agreed targets.

Outputs

- National Stakeholders Steering Committee for cassava and BXW management task forces convened and effective in Kenya.

- At least 10 CMD management steering committees and BXW taskforces formed at the district level.
- Linkages with regional institutions and stakeholders established and strengthened.
- Strategy to ensure sustainable funding of coordinating taskforces/committee developed.
- Existing strategies for responding to agricultural disasters in Kenya evaluated and improved.

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

Strategy

Collection of baseline and ex-post information on food security, CMD and BXW

Activities

IITA and CRS will conduct a survey in western Kenya using the GIS technology to generate data on production (annual, seasonal, over time), disease incidence & severity (CMD, BXW, other major crop diseases/pests, food/livelihood security (consumption, malnutrition, income, food expenditures...), demography (population & population structure, repatriation, IDPs...), human health (HIV/AIDS, other epidemics...), climate/soils, land use data, market flow of commodities, humanitarian interventions (food aid, etc.). The project will undertake a CMD survey and BXW assessments in the targeted regions.

Outputs

- Data base established on the status of food security, CMD and BXW prevalence in Kenya.
- Factors that pose risk to food security in the targeted areas are quantified.
- Based on the data, the areas of expected impact, zones of vulnerability, the stage of crop crisis (pre-epidemic, epidemic, or post-epidemic) will be identified.
- Informative maps projected that guide partners in effective targeting of interventions.

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

Strategy

1. Institutionalizing of identifying factors affecting food security.
2. Strengthening linkages between governmental institutions, regional and international agricultural research organizations.

Activities

1. Identify critical components of an effective disaster response system.
2. Dissemination of information among different stakeholders.
3. Coordinating action among stakeholders.
4. Development of an 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.

Strategic Objective 2: 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.

Strategy

CRS Kenya will employ a two-pronged strategy of multiplication and distribution along with training and extension activities. In the multiplication of CMD free planting materials, the strategy will be to minimize losses of planting materials at secondary and tertiary levels by targeting locations with relatively better rainfall, effective selection of NGOs, CBO and farmers groups and training on multiplication and field management of CMD free materials. A subsidy system will be used to ensure the poor households access the planting materials.

Activities

Since 1998, EARRNET and IITA, in collaboration with KARI introduced large quantities of improved CMD resistant germplasm into Kenya. On-farm participatory evaluations have resulted into the identification of the 15 best performing CMD tolerant germplasm lines. Multiplication and distribution has been particularly successful in Western Province where an estimated 22,000 ha (approximately 30% of the total cassava growing area) is now under CMD resistant varieties.

In Kenya lessons will be drawn from these multiplication and distribution successes. The project will conduct a quick assessment of the successes and challenges of the past multiplication and distributions of CMD free planting materials. This will focus on primary, secondary and tertiary bulking levels. The assessment will also dwell on how farmers get their planting material and determine how sources of planting materials have changed with time in the past 10 years

Although the project will strengthen the primary and secondary levels of multiplication, emphasis will be put on tertiary multiplication. The project will identify farmers or farmers groups and community based organizations to be involved in the tertiary multiplication of clean planting materials. Key activities in the multiplication program will include:

- Training of farmers and farmer groups on multiplication of CMD free planting materials.

- Training of researchers, extension agents and farmers to monitor health status of the plants at multiplication sites and quality control.
- Sensitizing communities on advantages of using and sources of clean planting materials through mass media, field days, demonstration plots and pamphlets.

The project will conduct an assessment of the availability of clean and high quality planting materials. Special focus will be on identifying and taking inventory of the producers of quality planting materials in Nyanza and Western Kenya provinces and certifying the trueness and health status of the planting materials at secondary and tertiary multiplication levels.

It is anticipated that geographically, the locations of need (demand) and availability (supply) will be separated by some distance. In such situations, farmer groups will be provided with market information on location of available planting materials and will be provided with vouchers for both transport and purchase. Fairs will be organized as venues for information dissemination and distribution of planting materials through a voucher. Each beneficiary will receive vouchers worth US \$ 5 enough to purchase 2,000 mini cuttings to plant 0.25 hectares of land.

Key outputs

- Establishment of 60 ha bulking plot of clean cassava planting materials with farmer and farmer groups at sites in locations where demand for planting materials is expected to be high.
- Establishment of OFV mechanism for CMD free planting materials.
- Inventory of CMD free planting materials that can be used for distribution through OFV distribution and for future information documented.
- Farmers/ farmer groups with source material trained to continue supply of disease free planting materials
- CMD free planting material security assessment conducted to understand the need for planting materials.

IR2: Effective control of BXW is achieved through awareness creation, training on disease management techniques and through multiplication and distribution of wilt-escaping varieties.

Strategy

Although BXW has not been reported, Kenya is one of the countries threatened by the disease as it shares borders with Uganda and Tanzania where the disease is serious. Considerable volumes of bananas are traded from Uganda and these present another risk of introducing the pathogen into Kenya.

The strategy for Kenya will be to prevent disease introduction by equipping farmers and stakeholders with skills and knowledge to recognize the disease and take the necessary disease management measures. C3P will also initiate collaborative linkages with related programs, projects and national institutions involved in the control of BXW and revive the previously formed but inactive BXW task force.

Activities

The major activities will include

- Regular surveillance close to Uganda and Tanzania borders.
- Awareness campaigns on BXW in districts neighboring Uganda and Tanzania as the disease is in those countries.
- Training of extension officers from the targeted areas on BXW management who will further train farmers with CRS facilitation.
- Cross border exchange visits for farmers.
- Farmer training centers will be used as demonstration sites for rapid multiplication of banana seedlings.
- Communication tools like Radio, Brochures and Posters will be used to create awareness on the symptoms and management of BXW.

Outputs

- 50 extension staff and 12,000 farmers trained on identification and management of BXW.
- 5,000 pamphlets developed and used for sensitization.
- 20 demonstrations of rapid banana multiplications conducted.
- 20 extension agents trained and linked to tissue culture suppliers for rapid multiplication of banana planting materials.
- 20 radio talk shows, 5 TV broadcasts and newspaper inserts on the impact of BXW printed in local languages.

Key Assumptions and Risks

- Rains will fall as expected with one short rainy period in October - December 2006 and the long rains from March to June 2007.
- There will be no major outbreak of BXW and no dramatic increase in area covered by CMD.
- There will be no outbreak of other cassava diseases e.g. CBSD, which could prevent dissemination of existing CMD resistant germplasm.
- Favorable policy environment.

Coordination

The CCU made up of CRS, KARI and IITA and will be responsible for in-country implementation of the C3P and will report directly to the CoP (RSC) through the National Steering Committee (NSC). The NSC (made up of officials from KEPHIS, Ministry of Agriculture, two farmer organizations, two NGOs and donor organizations) and KARI which host the CMD and BXW taskforces.

The CRS Country Program Manager for C3P together with National Cassava and Banana programs will provide technical expertise and support to the partners (NGO and CBOs) who receive sub-awards from CRS for implementation of cassava and banana multiplication and dissemination at the district level. The Partners 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 implementing partner level, the partner's officer in charge will consult with the division 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 country coordination unit and will be the basis for the quarterly reports which will be presented to the NSC at the quarterly meetings for final submission to the CoP.

Transition strategy

In the implementation of its activities, CRS and its partners work closely with the government institutions such as agricultural research and extension services. The project will build the capacity of partner and Ministry of Agriculture staff on the implementation of C3P. The project will work through farmers and farmers groups and train the groups on multiplication of Cassava and Banana planting materials. Through the subsidized voucher approach, it is expected that some farmers and farmer groups will take up bulking of planting materials as a business due to demand.

6.0. IMPLEMENTATION CALENDAR

The implementation calendar is shown in Annex 1.

Objective	Strategic Activities (milestones)	Responsibility	2006						2007							
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug
SO1: Regional actors institutionalize coordinated agricultural disaster response mechanisms	I.R. 1.1 National coordination team set up															
	1. Strengthen the National coordination committee for CMD Identify key players for inclusion who may have been left out in existing structure	CRS-KARI	X													
	2. Identify members of previous BXW task force, organize meeting to revive/reconstitute taskforce and review status of the BXW threat to Kenya, discuss activities proposed under C3P initiative.	CRS-KARI		X												
	3. Meetings of the CMD and BXW task forces to review progress and status of diseases or threats in Kenya as relates to C3P activities									X						X
	3. Identify and hold stakeholders meeting for CMD in Nyanza and Western Province	CRS-KARI		X												
	4. Hold quarterly stakeholders meetings for C3P	CPM		X				X				X				X
I.R.1.2. Project Locations Targeted																

	1. Use existing data and discussions with key stakeholders to define geographical areas for targeting CMD interventions.	CRS	X															
	1. Define geographical areas for targeting BXW interventions, (considering importance of bananas and vulnerability from infection from neighboring countries).	CRS			x													
	2. Target the geographical areas	CRS	x															
SO 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																	
	1. Identify the resistant cassava varieties that are available in targeted areas (through a quick survey and existing records)	CRS, IITA	X															
	2. Identify other sources of planting materials out of the project bulking sites	CRS, IITA		X						x							X	

	3. Inspect fields physically to certify cultivar trueness and health of the plants; collect samples for diagnostic analysis in lab, take GPS measure to map location of fields	CRS-IITA-KEPHIS		X						X					X	X			
	4. Acquisition of planting materials	CRS/Partners		X						X					X	X			
	5. Distribution to farmer groups and farmer through OFV.	Partners			X	X					X	X				X			
	8. Submit quarterly reports to the National Steering Committee for CMD and COP & M&E Coordinator	CRS			X			X			X			X					
	9. Train existing suppliers to enhance quality and business skills.	CRS-KARI-IITA			X		X	X											
	10. Publicity (Radio, Pamphlets, Poster - local language)	CRS				X	X	X	X	X	X	X	X	X	X	X	X		
	11 Establish small scale sustainable cassava enterprises for planting materials (Appropriate linkages)	CRS-EARRNET								X	X	X	X	X	X	X	X		
I.R. 2.2. Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of escaping varieties																			
	1. Train 50 Extension Agents (who will then continue training farmers with facilitation from C3P).	CRS-KARI				X	X												

	2. Sensitization to farmers on BXW symptoms and control						x	x	x	x	x	x						
	3. TOT rapid multiplication of clean planting materials and setting of demonstration nursery	CRS-IITA				X	X					X	X					
	4. Monitor the execution of the project	CRS	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	5. Submit quarterly reports to the Steering Committee and				X						x			x				
	6. Publicity (Radio, Pamphlets, Poster - local language)	CRS			X	X	X	X	X	X	X	X	X	X	X	X		

7.0. MONITORING AND EVALUATION

The key indicators for each intermediate result, frequency of data collection and the person responsible for the data collection are given in Annex 2. CRS Kenya C3P Project Manager will closely monitor the project activities at the partner level and will work with partners to monitor the project activities at community levels.

Annex II. Key indicators

Intermediate Result	Key Indicators	<i>Frequency of collection</i>	<i>Whom Responsible for collection</i>
A regional response to CMD and BXW is well coordinated.	Minutes of steering committee meetings	Bi- annual	Country project manager
GIS technology links data on diseases, 1-2-3 suppliers, to data on vulnerability and food insecurity.	Map of project geographical areas defined by data collected.	Once	IITA-CRS
Effective control of CMD is achieved through suppliers practicing better management practices to get better quality CMD free planting materials.	60 Ha established for bulking with resistant cassava planting materials 6,000 households accessing CMD planting materials via OFV approach 3,000 ha under improved cassava	Quarterly	Country project manager
Effective control of BXW is achieved through awareness creation and training of Extension officers and farmers on rapid multiplication of clean planting materials	5000 people sensitized on BXW symptoms and management 50 extension officers and 200 farmers group leaders trained Number and types of communication tools developed	Quarterly	Country project manager

Selected data in the baseline survey will be updated monthly to enable tracking of the monitoring indicators. To gain a qualitative indication of project progress, CRS- Kenya and its partners will schedule regular site visits, meet with the communities and conduct random interviews with program participants. CRS and its partners will meet at least monthly to analyze the information from these activities and the data in the records mentioned above. They will use these review sessions to identify and rectify problems in project implementation.

Partners will monitor the progress of the program submitting regular reports to CRS-Kenya and the District Steering Group Committee. These reports will be shared with stakeholders and interested parties during regular co-ordination meetings organized by CRS and the partners at the community, district, and national level. Three quarterly progress reports and one final report will be submitted to the C3P Chief of Party.

Record Keeping and Reporting

CRS and its partners will develop data collection sheets for each indicator to be monitored and will train selected farmer group members to collect data and disseminate information. Local partners will then summarize the data, and write reports. CRS-Kenya will establish channels for the flow of information from the communities to the partners and other collaborating agencies, and vice versa. This record keeping will enable CRS-Kenya and its partners to track the performance indicators and to monitor inputs and outputs linked to project activities.

Briefs

1. CMD and BXW pandemic and its impact on Food security in endemic Western Kenya.
2. Use of vouchers and fairs for vegetative propagated crops in Kenya: the case of cassava.
3. Rapid multiplication of cassava by farmers and farmer groups in Kenya.
4. Use of participatory training and dissemination methods and tools in the fight against BXW and CMD.

8.0. BUDGET:

C3P PARTNER BUDGET IN US DOLLARS.						
	Jul-Sept 06	Oct-Dec 06	Jan-Mar 07	Apr-Jun 07	Jul-Sept 07	Totals
ACTIVITY COSTS						
SO 1. Country stakeholders institutionalize coordinated agriculture response mechanism						
IR 1. Response to CMD and BXW threat in Kenya are well coordinated						
National Stakeholder meetings	2,000		2,000			4,000
District Stakeholder meetings	500	500	500	500	500	2,500
IR 2. GIS technology links data on diseases to data on vulnerability and food						

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insecurity						
Baseline data collection	2,390					2,390
CMD Survey	2,000					2,000
BXW Assessment	1,000					1,000
SO 2. Farmers employ effective measures to control CMD and BXW.						
IR 2.1 Effective control of CMD is achieved						
Training of Extension agents	2,000		2,000			4,000
Training of farmers	278	278	278	278	278	1,389
Assessment of availability of planting materials	2,000					2,000
Distribution through OFV	20167		20167		5,000	45,333
Communication tools.	3,000	3,000	3,000	3,000	3,000	15,000
IR 2.2. Effective control of BXW is achieved through awareness creation, trainings on disease management techniques.						
Surveillance	1,500	1,500	1,500	1,500	1,500	7,500
Awareness campaigns	278	278	278	278	278	1,389
Trainings of extension agents	2,500		2,500			5,000
Communication tools.	2,000	2,000	2,000	2,000	2,000	10,000
ACTIVITY COSTS	39,700	8,033	34,700	8,033	13,033	103,500

DIRECT ADMINISTRATIVE COSTS

Partner Personnel	6,710	6,710	6,710	6,710	6,710	33,550
Fringe benefits	1,677	1,677	1,677	1,677	1,677	8,385
Monitoring travels	3,000	3,947	3,947	3,947	3,712	18,553
Vehicle expenses	3,000	3,000	3,000	3,000	3,000	15,000
Office Expenses	469	469	469	469	469	2,345
Total Direct administrative costs	14,856	15,803	15,803	15,803	15,568	77,833

Total costs	54,556	23,836	50,503	23,836	28,601	181,333
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LIST OF ACRONYMS

BARNESA	Banana Research Network for Eastern and Southern Africa
BXW:	Banana Xanthomonas Wilt
CBOs	Community Based Organizations
CMD:	Cassava Mosaic Disease
CCU:	Country Coordination Unit
C3P:	Crop Crisis Control Project
CoP:	Chief of Party
CPM:	Country Project Manager
CRS:	Catholic Relief Services
EARRNET	Eastern African Root Crops Research Network
FAO	Food and Agricultural Organization of the United Nations
GIS:	Geographic Information System
ICRISAT	International Crop Research Institute for Semi Arid Tropics
IDPs	Internally Displaced Persons
IITA:	International Institute of Tropical Agriculture
INIBAP:	International Network for Improvement of Banana and Plantain
IR:	Intermediate Results
KARI	Kenya Agricultural Research Institute
KEPHIS	Kenya Plant Health Inspectorate Services
M&E:	Monitoring and Evaluation
NGO:	Non Governmental Organization
OFV:	On Farm Voucher
PVOs:	Private Voluntary Organizations
USAID/OFDA	United States Agency for International Development/ Office for Foreign Disaster Assistance
REFSO	Rural Energy and Food Security Organization
RSC	Regional Steering Committee
S0:	Strategic Objective
ToT:	Training of Trainers