



RWANDA C3P WORK PLAN

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

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List of Acronyms

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| AFSR: | Support to Seed Service of Rwanda |
| BAIR: | Office to Support Rural initiatives |
| BXW: | Banana Xanthomonas Wilt |
| 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 |
| FAO: | Food and Agricultural Organization of the United Nations |
| FEWSNET: | Famine Early Warning System Network |
| FHI: | Food for the Hungry International |
| GIS: | Geographic Information System |
| GoR | Government of Rwanda |
| IITA: | International Institute of Tropical Agriculture |
| INIBAP: | International Network for Improvement of Banana and Plantain |
| IR: | Intermediate Results |
| ISAE: | High Institute of Agriculture and Husbandry |
| ISAR: | Rwanda Institute of Agricultural Sciences |
| LOP: | Level of Effort |
| MINAGRI: | Ministry Of Agriculture |
| MINALOC: | Ministry of Local Administration |
| MINECOFIN: | Ministry Of Economic And Finance |
| MINISANTE: | Ministry of health |
| M&E: | Monitoring and Evaluation |
| NGO: | Non Governmental Organization |
| OFV: | On Farm Voucher |
| PVOs: | Private Voluntary Organizations |
| SNS: | National Service of Seed |
| S0: | Strategic Objective |
| ToT: | Training of Trainers |
| UNDP: | United Nation Development Programme |
| UNHCR: | United Nation High Commissioner of Refugees |
| UNR Facagro: | National University of Rwanda, Faculty of Agriculture |
| WFP: | World Food Programme |
| CNIA: | National Center of Artificial Insemination |
| PRSP: | Poverty Reduction Strategy Paper |

I. EXECUTIVE SUMMARY

BXW has been recently identified in Rwanda's western province in the former province of Gisenyi (district of Cyanzarwe and Kanama). BXM is thought to have spread from Eastern Congo. The disease has also extended to other districts from the same province; in particular the districts of Gisenyi city and Nyamyumba. Concerning CMD, surveys carried out in 2004 by ISAR/CIAT/USAID were conducted in 88 farmers' fields in a total of 7 cassava-growing provinces and showed that CMD is prevalent in nearly all areas of Rwanda with high prevalence rates in the former provinces of Gitarama, Butare, Umutara and Kibungo. CMD incidences varied between provinces and were highest in Butare (70%) and lowest in Cyangugu (25%).

Two steering committees exist in Rwanda focused on CMD and BXW. Participants include the CPM/C3P, ISAR, MINAGRI/RADA, UNR Facagro, ISAE, FAO, INGABO, CRS, WV, PAM, Caritas, BAIR and districts officials.

In addition, ISAR and MINAGRI currently address BXW and CMD using research to find new varieties resistant to these diseases. They also collaborate with INGABO, a local NGO to multiply the resistant varieties which were distributed in rural zones. Other partners, in particular: MINAGRI, WORLD VISION, ARDA, CARITAS and CRS have distributed cuttings of new varieties given by ISAR, in various areas throughout Rwanda. Regarding BXW, there are no varieties resistant to this disease. However, MINAGRI has undertaken awareness activities targeting populations in affected districts Cyanzarwe and Kanama, for eradication of the disease.

C3P activities will also be directed through subgrants to respected and established partners who have the capacity to implement project activities. These partners will be selected by the two national steering committees which will determine their capacity in the project.

The geographical targeting was based on the following criteria: Importance of the crop, food insecurity, incidence of CMD and BXW and disease severity. Based on these 4 components, the following zones were selected: For CMD: South Province (Huye, Gisagara and Nyamagabe districts) and East Province (Kayonza and Gatsibo districts). For BXW: West Province (Cyanzarwe, Kanama, Gisenyi City and Nyamyumba districts)

C3P Rwanda will work in synergy with the other programs in the country especially with the programs financed by USAID. C3P Rwanda is carried out by CRS Rwanda and IITA.

To address CMD and BXW, CRS and the CCU for Rwanda request \$271,998 U.S. dollars for the implementation of the Rwanda C3P work plan for a period of 15 months beginning August 2006 through October 2007. The Rwanda C3P work plan will be implemented through a Country Coordinating Unit (CCU) whose responsibilities will include selecting 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 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 RWANDA C3P PROJECT FRAMEWORK

CRS RWANDA C3P PROJECT FRAMEWORK

The SOs, IRs and key outputs are summarized below. A more detailed list of activities can be found on pages 17-19.

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

Key Outputs for the CRS Rwanda work plan will include:

SO1: National stakeholders institutionalize coordinated agricultural disaster response mechanisms.

IR1.1: A national response to CMD and BXW is well coordinated

Outputs:

- *CCU is established and operational*
- *Linkages are developed among national and international partners to address crop crises*
- *Support received from District authorities for C3P interventions*

IR1.2: GIS technology links data on diseases to data on vulnerability and food insecurity.

Outputs:

- *Baseline conducted by IITA for CMD and BXW*
- *Database on food security, CMD and BXW is established by IITA*
- *GIS map on food security, risk and vulnerability is established*

IR1.3: Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters.

Outputs:

- *Collaborative framework for disaster responses to crop crises established with a network of existing institutions*
- *Component of agricultural disasters response approach identified*
- *Existing early warning system incorporates crop crises*

SO2: Farmers employ effective measures to control CMD and BXW

IR2.1: Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices.

Outputs:

- *C3P targeted areas are identified and locations, quantities of planting material of CMD resistant varieties recorded in GIS*
- *Partnerships established with local NGOs and institutions involved in multiplication and dissemination of CMD resistant planting material..*

- 92 ha of CMD resistant varieties planted for multiplication during the length of the project.
- 3,000 farmers obtain 9,200,000 resistant cassava cuttings through vouchers and/or distributions
- Training materials adapted and disseminated for improved CMD management
- Country level training: 50 extension workers and 3000 farmers trained by country training teams in CMD management
- Localized radio awareness spots on CMD are broadcast

IR2.2: Effective control of BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties.

Outputs

- Radio spots are launched to increase awareness of BXW
- Training materials adapted for BXW management training
- Country level training for 50 extensionists and XXXX farmers trained in BXW management approaches/

BXW affected areas are identified for mat destruction and crop substitution

- Infected mats are destroyed, food aid provided
- Partnership established with ISAR and local NGOs involved in managing BXW
- 100 farmers identified for crop substitution and received seeds/cuttings through SFVs
- 5,000 plantlets procured in laboratory from tissue culture
- 10 propagation sites/demonstration sites established

III. PROBLEM ANALYSIS

Country Level Coordination

Coordination efforts in Rwanda to eradicate CMD and BXW exist, but effectiveness and awareness on the severity is lacking.

The Ministry for Agriculture, specialized research institutions and both local and international NGOs have addressed certain components to fight CMD and BXW. In 2005 a national steering committee on CMD was created composed of representatives from Minagri/RADA, ISAR, UNR Facagro, ISAE and INGABO, a local NGO. On BXW, a national coordination system was installed in 2005 when the disease appeared. For example, a task force was created consisting of Minagri/RADA, ISAR, UNR Facagro and the district of Rubavu representatives. Currently, BXW is present in the Eastern province. Therefore, coordinated actions by the task force were carried out directly in the field in the affected districts. However, these efforts were not considered mechanisms at the national level to control the BXW.

The efforts to reduce the current and potential impact of these two diseases remain weak. Only a limited number of stakeholders are involved in the multiplication of healthy material and the national coordination mechanisms. In addition these efforts are not yet decentralized. The Rwanda CCU will help the government and other stakeholders to reinforce existing coordination efforts.

The steering committee on CMD will be strengthened and expanded to include additional stakeholders such as the task force on BXW and CRS. These two steering committees will have the principal role of coordinating all C3P activities at the national level.

Cassava Mosaic Disease Pandemic

Cassava plays an important role in the food security and livelihoods of millions of people in Rwanda. As a result, Rwanda is 5th in the World in consumption of root and tubers.

A 2004 survey by ISAR revealed that the severity of CMD incidence varied between provinces and was highest in Butare (70%) and lowest in Cyangugu (25%). Currently, CMD is found in most areas throughout Rwanda with a high prevalence rate in the former provinces of Gikorongo, Gitarama, Butare, Umutara and Kibungo. In short, the present major biotic constraint to cassava production in Rwanda is Cassava Mosaic Disease (CMD).

Table 1: Summary of diagnostic survey parameters, Rwanda, 2004

| Parameters | Province | | | | | | | Total |
|-------------------------------|----------|----------|-----------|----------|---------|--------------|---------|------------|
| | Butare | Cyangugu | Gikongoro | Gitarama | Kibungo | Kigali-Ngali | Umutara | |
| Mean altitude (m.a.s.l) | 1650 | 1360 | 1730 | 1670 | 1520 | 1560 | 1490 | - |
| No. of fields surveyed | 11 | 10 | 2 | 20 | 11 | 23 | 11 | 88 |
| Cutting infection (%) | 45 | 16 | 7 | 27 | 25 | 28 | 21 | 24 |
| Whitefly infection (%) | 25 | 9 | 35 | 28 | 21 | 27 | 12 | 23 |
| Total incidence (%) | 70 | 25 | 42 | 55 | 46 | 55 | 33 | 47 |
| Symptom severity | 3.6 | 2.8 | 4.5 | 3.6 | 3.6 | 3.8 | 3.5 | 3.6 |
| Bemisia tabaci (top 5 leaves) | 1.3 | 0.4 | 2.2 | 3.1 | 2.1 | 3.7 | 1.8 | 2.1 |
| CGM number | 2.7 | 2.7 | 3.4 | 2.4 | 2.7 | 2.6 | 2.4 | 2.7 |
| CGM severity | 2.5 | 2.2 | 2.6 | 2.3 | 2.7 | 2.5 | 2.6 | 2.5 |
| CM number | - | - | - | - | - | 2.0 | - | 2.0 |
| CM severity | - | - | - | - | - | 2.0 | - | 2.0 |
| CBB severity | - | 2.0 | 3.1 | - | 2.0 | 2.0 | 2.0 | 2.2 |
| T. ariipo incidence | - | - | - | - | - | - | - | - |
| Age (months) | 5.5 | 5.7 | 6.0 | 5.2 | 6.0 | 5.3 | 5.3 | 4.8 |

m.a.s.l: meters above sea level

Source: ISAR/CIAT/USAID survey, 2004

In 2005, ISAR distributed 5,445,390 cuttings of the healthy cassava varieties to combat CMD: TME 14; MM95/0063 and TMSI 92/00057. The cuttings were distributed to those who requested the varieties throughout various regions in Rwanda: Bugesera by World Vision, ADRA and Caritas and in other former provinces (except Gisenyi, Cyangugu and Byumba) by Minagri/Rada. However, according to several local farmer organizations, the distribution strategy used by MINAGRI failed to satisfy numerous requests, especially from small farmers. There is a lack of criteria for selecting the beneficiaries in need of CMD resistant varieties and this process must be coordinated more effectively and efficiently at both the government, institutional and NGO level.

ISAR currently collaborates with INGABO, a local NGO Based in Muhanga district (Gitarama), to test new CMD resistant varieties through trials and multiplication. Tested varieties were distributed in select rural areas affected by CMD (710, ha in Gitarama). These varieties, now being multiplied in several fields, are at level 3 (distribution to experienced farmers). These are

the same varieties that C3P Rwanda will provide to farmers. Thus, C3P will have access to tested varieties from ISAR enabling access to proven quality cuttings for rapid distribution.

The distribution of these varieties was accomplished by using a system different to what is proposed in C3P (on farm voucher - OFV). ISAR produced the cuttings and distribution method was based on who could pay for the cuttings up front (5-10 RwF per cutting). This was done to recuperate some of the costs for multiplication. However, this system proved problematic as the poorest households lacked immediate access to credit and/or the financial means necessary to purchase the cuttings.

One challenge, during a recent steering committee meeting, consisted of conflicting areas to intervene regarding CMD. Members stated the importance of including Cyangugu in C3P as a replacement of the original site of Gitarama. ISAR provided 2006 statistics indicating the increased CMD prevalence, but important information was lacking from the report in support of the survey. In addition, a WFP 2006 This report states that Cyangugu is not considered a food insecure region in Rwanda. Thus, the steering committee agreed to target the original areas indicated above.

Banana Xanthomonas Wilt Pandemic

Banana production has been reduced due to BXW. The disease was identified for the first time in Gisenyi in 2005 and has spread to the Western Province of Rwanda, in former districts of Cyanzwe and Kanama. The incidence of this disease is currently between 60 and 70% in affected districts.

There are three phases of the spread of the BXW epidemic: The pre-epidemic, epidemic and post-epidemic. Rwandan mechanisms for controlling BXW currently in place are similar to the regional mechanisms proposed under C3P. These include awareness raising in BXW affected districts (Cyanzarwe and Kanama) where BXW is in an epidemic phase, and improving farmer practices for controlling the spread of the disease in other major banana growing districts as part of a wider pre-epidemic intervention. However, these efforts currently remain insufficient and have yet to receive national attention because the disease is considered to be located in a small frontier zone with the DRC.

As part of the pre-epidemic phase, ISAR between May-June 2005, a campaign was carried out to sensitize farmers about the symptoms of the disease and its management. As a result, numerous infected banana fields were uprooted from July to September 2005. However, a recent visit in June 2006 in Cyanzarwe and Kanama districts revealed that, the uprooting was not fully completed and farms were left with diseased plants from which the disease continues to spread. This result was because several farmers were not properly sensitized to BXW, especially on the sanitization of their tools for handling planting materials, which also spread the disease. Moreover, in August, 2005 a third district, Gisenyi Ville was found to contain the disease. There are no quarantine or phytosanitary measures in place.

In reaction to the epidemic, a large area affected with BXW was recently destroyed in Rwanda by local farmers through coordination with MINAGRI. In turn the farmers received bean and corn seeds as a substitution in the BXW destroyed areas. This post-epidemic action did not contribute to improved food security for farmers due to the waiting period of three to four

months before beans and corn were harvested. Moreover, these substitute crops failed to replace the significant monetary gains that yielded from banana beer.

To help address the potential BXW epidemic, ISAR has a mandate to conduct research on a number of agricultural commodities, including banana. Research has been focused on germplasm conservation through rejuvenation of old germplasm collections and enrichment with new cultivars. Currently, 102 local and exotic banana and plantain cultivars are conserved at Rubona germplasm collection where the best local germplasm of cooking banana was selected for dissemination. ISAR has also discovered wilt escaping varieties in Kibungo which are considered cooking varieties and they discovered two varieties of bananas that yield quality banana beer.

COMESA is not assisting Rwanda yet because the problem is not considered to be at a national level as the disease currently is located in only the Western Province.

IV. TARGET AREA AND PARTNER CRITERIA

A. Target Area

Target locations were selected taking into consideration 2004 data by ISAR and USAID, food insecure areas in Rwanda taken from a WFP April 2006 report and recommendations by the Rwanda Steering Committee.

CMD Target Areas

In Rwanda's south province (Butare zone: Gisagara, Huye districts), the total CMD prevalence rate is 70%; coupled with a high risk of food insecurity; in Gikongoro zone (Nyamagabe districts), the total CMD prevalence rate is 42%, with a moderate food insecurity risk). Gitarama located in the centre has a total CMD incidence of 55%, but it has received much attention compared to other sites.

In Rwanda's east province (Umutara zone: Gatsibo district), the total CMD prevalence rate is 33% and food insecurity is moderate; in Kibungo zone (Kayonza district) the total CMD prevalence rate is 46% and food insecurity is high.

These aforementioned sites were selected based on survey results conducted by ISAR in 2005. In fact, these are the sites with a high prevalence rate of the disease, which have failed to receive any substantial intervention. The members of the steering committee on CMD confirmed that these sites remain with a high incidence of CMD. In addition, these are sites with a high risk of food insecurity, according to data provided by WFP in April 2006.

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* |
|----------------------------|---|---|--|---|
| South Province-Butare zone | Gisagara district | 725,914 | 306,253 | 6000 |
| | Huye district | | 190,930 | 3500 |
| Gikongoro zone | Nyamagabe district | 489729 | 282133 | 5500 |
| | Gatsibo district | | 65,307 | 1300 |
| Kibungo zone | Kayonza district | 702,248 | 66,689 | 1300 |

*Goods or services received during the duration of the C3P project such as trainings, awareness raising, and planting material.

BXW Target Areas

Concerning BXW, the west province (Gisenyi zone: Kanama and Cyanzarwe districts) as well as neighboring districts: Gisenyi Ville and Nyamyumba districts are currently affected by the disease. One particular activity under the project, raising farmer awareness, would be nationwide in its scope.

ISAR also conducted surveys in 2005 regarding BXW which detailed a prevalence rate in the Eastern Province. In addition, the C3P PM, the COP and an ISAR phytopathologist visited the affected province. They confirmed that BXW remains prevalent in this area. Lastly, the Steering Committee members also confirmed this assessment.

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* |
|------------------------|---|--|--|---|
| West Province | Kanama district | 864,377 | 77,326 | 1500 |
| | Cyanzarwe district | | 71,244 | 1400 |
| | Gisenyi ville district | | 67,766 | 1300 |
| | Nyamyumba district | | 61,520 | 1200 |
| Eastern Province | Ngoma | | | 1200 |

| | | | | |
|--|---------|--|--|------|
| | Kirehe | | | 1200 |
| | Kayonza | | | 1200 |

*Goods or services received during the duration of the C3P project such as trainings, awareness raising and planting material.

B. Partner Criteria

C3P Rwanda partners will be selected based on the following criteria:

- Quality of the proposal vis a vis the format
- Cost
- Experience in the promotion of agricultural production, preferably but not exclusively for Cassava and/or banana production;
- Experience in seed multiplication and diffusion especially cassava cuttings resistant to CMD;
- Capacity to transfer agricultural technologies, to farmers in targeted districts;
- Recognized by local government to operate in Rwanda
- Qualified personnel
- Willingness to share experiences

Based on the partner's experience and capacity, it is conceivable that one or several partners may also be a member of the current steering committees on CMD and BXW. Potential partners will be invited to submit Sub-Award proposals and to demonstrate their agricultural experience and key staff involved in cassava and/or banana sectors. V. PROGRAM DESIGN and STRATEGY

C3P Rwanda proposes to build a sustainable community capacity to combat CMD and BXW. CRS and partners will target the South, East and West Provinces of Rwanda, which are affected by CMD and the west province for BXW.

Though some effort has been undertaken, a need exists to increase community capacity to combat the two diseases and reduce their prevalence rate. This project will bring small farmers together to increase their food security through improving production of both Cassava and Banana crops.

Two strategies emerge from the problem analysis such us:

- The farmer's participation in the identification and reduction of the CMD and
- The availability of acceptable substitutes for BXW infected plants and the emergence of healthy BXW escaping material for future planting.

How the farmers will be able to participate in an effective way in the identification and reduction of CMD and BXW ? This question will find its answer in the C3P project.

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

C3P Rwanda intends to contribute to limiting the spread of CMD and BXW through partnerships that will increase awareness among farmers of these diseases, increase their knowledge on how to manage them, increase the availability of healthy planting material and

improve learning and knowledge sharing among the various strategic actors in the agricultural and research sectors and the C3P network.

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

In order for this to be effective in C3P Rwanda, it will be necessary to integrate the various stakeholders in coordination mechanisms to control agricultural disasters. This coordination must be seen under 2 aspects:

- The participation of partner [agencies with a share vision] to analyze the stakes related to C3P implementation and to give coherent proposals for an improvement;
- The capacities of partners to implement the planned activities

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IR 1.1: Country response to CMD and BXW is well coordinated.

The following **activities** will support this IR:

- The C3P PM for CRS Rwanda will coordinate quarterly meetings with the steering committees to share the quarterly reports, C3P achievements and receive feedback from steering committee experiences.
- At least two regional workshops and seminars for C3P will be held during the project. The CRS Rwanda C3P PM will attend those regional workshops and seminars. The steering committee can also propose candidates to attend the workshops or seminars if warranted.
- The C3P PM will hold at least 3 meetings with MINAGRI for the quarantine of BXW infected areas
- The C3P PM will meet with all pertinent district authorities to ensure local approval of C3P activities

The key **outputs** include:

- CCU members have increased understanding and improved coordination of response to CMD and BXW
- C3P Project Manager increases knowledge of and regional coordination of C3P responses.
- GOR implements a quarantine in BXW affected areas to limit spread of the disease.
- District authorities provide letters of support indicating that C3P is consistent with district plans.

IR 1.2: GIS technology links data on diseases to data on vulnerability and food insecurity.

The following **activities** will support this IR:

- Latest agricultural production and demographic data (inventory) are provisioned to the C3P GIS specialist for inclusion in a GIS database
- The information generated from database will be shared among stakeholders

The key **outputs** include:

- Baseline study completed by IITA.

- Stakeholders received GIS documents from IITA.

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

The following **activities** will support this IR:

- C3P participation in the Rwanda Disaster Management Task Force (DMTF). The DMTF was set up for drought response. CRS currently participates on this Task Force. The participants in this Disaster Management Task Force are: UNDP, UNHCR, WFP, FHI, FEWSNET, CRS, USAID, ICRC, MINALOC and MINISANTE. CRS will continue to participate in the Task Force to share information from C3P GIS data.
- Crop crises data from the GIS data base is incorporated into FEWSNet reports

The key **outputs** include:

- DMTF includes disaster crop crisis among disaster management topics.
- FEWSnet incorporates crop crises information into their reports.

Strategic Objective 2: Farmers employ effective measures to control CMD and BXW.

The implementation of C3P is centered around a mutual learning approach that will improve the capacity of farmers to manage the diseases. The overall approaches to be taken will include the following:

- The reinforcement of partnerships with various public and private actors: This will support, on the one hand, the integration of partners in the mechanisms of implementing and monitoring of C3P project at all levels (district, province and national), and on the other, experience sharing with other stakeholders at the national and regional levels;
- The development of capacities for raising awareness among farmers: At this level, farmers will be able to utilize knowledge and information given by C3P, to help farmers analyze their problems and take constructive actions to address them. The consequent changes will be able to go in the direction to support the evolution towards a more professional agriculture.

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

The following **activities** will support this IR:

- The CMD steering committee has already developed a joint plan for the implementation of CMD-resistant variety multiplication and distribution efforts. Key activities will be to identify the varieties to be promoted, determine the overall structure of the program and approach to be used, identify all of the contributing partners at the various levels. The C3P PM will draft calls for bids for review and approval by the CCU, and develop a sound monitoring and evaluation system to assess progress against agreed targets.
- Farmers often exchange cuttings, but larger distributions will require more systematic approaches. In order to effectively distribute the cuttings, a voucher system will be used

based on an agreed upon selection criteria of suppliers and beneficiaries. Some criteria will be fixed to select beneficiaries in affected zones who will have vouchers (OFV system) to be presented in order to get CMD-resistant planting materials. The C3P PM will be responsible for conducting workshops for organizations involved in the propagation and dissemination of CMD resistant cuttings.

- CRS will publish the Calls for Bids and the steering committee will delegate members to review offers for subgrants and proposals from ISAR. The committee will select the NGOs who will implement the activities based on agreed weighted criteria.
- Control and certification of the healthy cassava planting material (phytosanitation). This will be accomplished through joint field visits by MINAGRI.
- Through a survey carried out by ISAR, the number of beneficiaries receiving cuttings will be determined. The steering committee on CMD will analyze the potential demand and determine the number of beneficiaries in each targeted zone.
- A CMD TOT guide will be developed from existing materials from Uganda, relating to different actions needed to combat the disease. The guide will include information on how to detect the mosaic disease, how to uproot diseased plants, what may be substituted in its place, and where to plant non-diseased varieties. These materials will be reviewed and approved by the Technical Steering Committee.
- Extension agents and farmers will be trained by ISAR and select NGOs. The themes will be identified by the steering committee.
- ISAR or other entity will develop materials using media mechanisms to increase awareness among farmers about CMD.
- Other activities will include the development of the M&E system, project reporting and participation in DMTF meetings, TSC meetings and MINAGRI meetings.

The key **outputs** include:

- 92 hectares of Cassava resistant varieties are planted with CMD resistant varieties
- A ToT guide on CMD management is developed from existing materials
- Training of at least 50 extension agents and 3000 farmers completed for improved practices, including use of vouchers
- 25 demonstration plots of new cassava varieties are identified
- Public awareness raising messages coordinated with trainings are developed and broadcast
- 5 farmer field days on cassava conducted
- Training on Seed Fairs/Vouchers conducted for sub-grantee organizations.
- 920,000 vouchers with an estimated value of 10 RwFr will be utilized to access CMD resistant sticks.
- Branded signs are posted at project sites

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

The following **activities** will support this IR:

- Training in improved practices to control the spread of BXW will be the primary activity for this IR. ISAR as the primary organization involved in the management of this disease will be selected to develop the training and publicity materials for trainings extensionists in the three primary banana regions of the country. ISAR will be responsible for undertaking the workshops and coordinating the publicity campaign with the training efforts.
- In particular, recognition of the disease and management practices to avoid infection, e.g. male bud removal, disinfection of tools, managing residue and debris from infected stools, planting techniques to avoid infection of suckers by soil-borne bacteria, appropriate weeding methods, appropriate leaf harvesting and fiber removal methods, and fallowing and rotation will be emphasized. The main effort of CRS for BXW will focus on behavior changes related to the prevention of the spread of the disease.
- Extension agents will be trained to implement training programs for extension workers and leaders of farmer groups in Rwanda.
- The steering committee will review bid offers for subgrants of which local NGOs will implement.
- The amount of alternative planting materials of BXW escaping varieties is extremely limited, and it will not be possible to undertake macro-propagation In Rwanda, the C3P will establish fund ISAR to produced 5,000 plantlets in-vitro and to begin the multiplication of 5,000 plantlets of these varieties in 10 nurseries in strategically located sites.
- The zones affected by BXW in Rwanda will be identified by ISAR, IITA and CRS. To date Kanama and Cyanzarwe districts have been identified with having BXW affected mats that should be destroyed, and this activity will be coordinated by the districts with input from MINAGRI. CRS can facilitate the discussions around a government action plan to eliminate the affected bananas.
- CRS will coordinate with MINAGRI the establishment of a quarantine in the affected zones to limit the possibility of further spread of the disease.
- CRS will collaborate with WFP to determine the possibility of providing food rations to the 100 affected farmers in the two districts where BXW has been identified to 1) accelerate the destruction of the mats and 2) provide food aid until substitute crops are harvested.
- Bean, maize and sorghum seeds will be provided through seed fairs/vouchers to provide substitute crops. Since their banana trees are no longer productive, farmers will benefit from improved household food security. At the same time, food will be distributed according to the number of family members.
- Other activities will include establishing an M&E system to collect project data and produce reports for the CCU and other stakeholders.

The key output includes:

- The 100 persons affected by BXW would uproot and destroy all their infected materials
- Seed fairs/vouchers will be used to distribute seeds for substitute crops.
- The 100 affected farmers would then plant substitution crops and receive food aid for 6 months until harvest.
- MINAGRI will establish a protocol for creating a quarantine in the affected areas.
- ISAR will develop plans for training extensionists and farmers in BXW control, and adopt a TOT guide for training extensionists.
- ISAR would then train the extensionists, who would then support a broader trainings for lead farmers and associations in the key banana growing regions.
- 3 farmer field day exchange visits will be conducted
- ISAR or a publicity firm will develop brochures, posters and radio spots with key messages for low literacy population.
- The brochures and posters are distributed by CRS and ISAR; publicity firm or ISAR ensures key radio messages are diffused.
- ISAR will also produce 5,000 in-vitro plantlets procured from tissue culture laboratory and locate 10 propagation sites/demonstration sites
- Reports are produced
- Branded signs are posted at project sites

Key Assumptions and Risks

The C3P Rwanda activities are expected to have positive effects, socially and environmentally, as the capacity building program will help beneficiaries better manage and be more involved in fighting CMD and BXW, particularly in the affected zones. The increased capacity of the C3P beneficiaries will also improve household food security.

However, it is important to consider that the demand subsidies for distributing resistant material by C3P Rwanda to support the poor farmers could have a negative impact; this action could reduce their future initiative. The short duration of the project could also generate a risk because there may not be sufficient time to build the capacity of poor farmers regarding future actions to combat CMD and BXW.

The success of this effort will depend on the level of engagement by the partners involved and the farmers themselves.

It has not been possible to confirm that BXW exists only in Cyanzarwe and Kanama districts because certain traces of this disease were also recorded in Ruhengeri, near the tarred road. The short duration of the Project may not allow an effective control of the BXW if other zones are affected.

Given these possible situations, C3P Rwanda will collaborate with the stakeholders to find appropriate solutions in order to avoid, or at least to minimize, such negative effects.

VI. IMPLEMENTATION CALENDAR

(See attached Excel Worksheet)

VII. MONITORING AND EVALUATION

The present project will put in place an M&E system to be regularly followed.

The available data, collected, will be updated through two surveys on CMD and BXW carried out in affected zones, in the period between June-July 2006.

The M&E system will also take into consideration the directives of USAID.

The needed information for the M&E process will be collected and analyzed as regularly as possible in straight collaboration with the project partners, and will be put together on quarterly basis. 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.

C3P Rwanda and the project partners will use the collected information to ensure that project objectives are achieved. The information will also help to make appropriate adjustments and decisions for improved project implementation.

The M&E plan is presented in the following table:

| Intermediate Result | Key Indicators | Frequency of collection | Responsible for collection |
|--|--|--------------------------------|--|
| I.R. 1.1 National response to CMD and BXW is well coordinated | # of meetings and reports regarding coordination efforts. # of District support letters | Quarterly Once | ISAR+MINAGRI, Rwanda C3P Manager |
| I.R.1.2. GIS technology links data on disease to data on vulnerability and food insecurity | # of reports indicating links between food security and disease prevalence | Quarterly | IITA GIS specialist + Rwanda C3P Manager |
| I.R. 1.3. Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters | # of meetings with DMTF in which crop crises is discussed. # of FEWSNet reports including crop crises data. | Quarterly | MINAGRI+ Rwanda C3P Manager |

| | | | |
|---|--|------------------|--|
| <p>I.R. 2.1. Effective control of CMD is achieved through multiplication and distribution of CMD resistant varieties and promotion of improved management practices</p> | <ul style="list-style-type: none"> ▪ # of hectares of CMD resistant varieties planted for propagation ▪ # of women and men participants receiving cuttings through vouchers ▪ # of new hectares planted with resistant varieties ▪ # of people trained on improved CMD management techniques. ▪ # of farmers receiving materials for demonstrating good practices to avoid CMD ▪ # of radio spots on CMD | <p>Quarterly</p> | <p>ISAR+MINAGRRI+,Rwanda C3P Manager</p> |
| <p>I.R. 2.2. Effective control for BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties</p> | <ul style="list-style-type: none"> ▪ # of BXW escaping plants developed ▪ # of multiplication sites ▪ # of people trained on improved BXW management techniques. ▪ # of farmers receiving materials on BXW management practices ▪ # of radio spots broadcast per region | <p>Quarterly</p> | <p>ISAR+MINAGR+Rwanda C3P Manager</p> |

C3P Rwanda will be expected to contribute four progress reports during the life of the C3P project. On average, every 6 weeks a report will be shared among C3P partners and other interested parties to the CMD and BXW pandemics. The reports can be on any subject related to C3P such as:

- Success stories of farmers who have put into practice improved BXW and CMD controlling techniques.
- The involvement of different partners in the activities of CMD and BXW in Rwanda.

- Reduction of incidence of CMD and BXW in Rwanda during the life of C3P Project.
- Effect of the C3P on food security in Rwanda
- C3P Rwanda and projects fighting against human diseases. A comparison using integral human development.
- Reinforcement of the country initiatives to fight against the crop diseases, case of C3P Rwanda.

The purpose of the reports is to inform and educate partners and the larger CMD/BXW community about C3P activity in Rwanda.

VIII. BUDGET

The present C3P Rwanda illustrative budget details how the funds will be allocated per CMD (70%) and BXW (30%). The present illustrative budget reveals allocation of the illustrative budget per IR and main activity areas. Lastly the budget shows when funds will be spent during the life of the project.

| Nr of activity | Activity | Period | Total budget (\$) | Financing |
|--|---|-----------------------------|-------------------|----------------------------|
| | | | | |
| STRATEGIC OBJECTIVE 1: Regional actors institutionalize coordinated agricultural disaster response mechanisms | | | | |
| I.R. 1.1 National response to CMD and BXW is well coordinated | | | | |
| 1.1.1 | Hold regular quarterly coordination meetings with the Steering Technical Working Group for CMD | Q3, Q4 FY6 Q1,Q2,Q3 FY07 | 500 | Rwanda C3P Budget |
| 1.1.2 | Hold regular quarterly coordination meetings with the Steering Technical Working Group for BXW | Q3, Q4 FY6 Q1,Q2,Q3 FY07 | 500 | Rwanda C3P Budget |
| 1.1.3 | Attend regional 2 workshops and seminars for C3P | Q1, Q3 FY 07 | salary | C3P regional budget |
| 1.1.4 | C3P project manager supports MINAGRI to create strategy and standards for quarantine of BXW affected areas in Rubavu. | Q4 FY6 Q1,Q2 FF7 | 200 | Rwanda C3P Budget |
| 1.1.5 | C3P project manager meets with 12 district authorities to coordinate efforts and receive approval for activities. | Q4 FY6 | 250 | Rwanda C3P Budget |
| Subtotal I.R.1.1 | | | \$1,450 | |
| R.1.2. GIS technology links data on disease to data on vulnerability and food insecurity | | | | |
| 1.2.1 | Collect baseline information about Food Insecurity, BXW and CMD X 2 days | Q3 FY06 | 70 | IITA C3P Budget |
| 1.2.2 | Disseminate the information collected regionally by the GIS system | Q4 FY06 | salary | IITA C3P Budget |
| Subtotal I.R.1.2 | | | 70 | |
| I.R. 1.3. Existing institutions carry forward proven methods for coordination and knowledge sharing regarding agricultural disasters | | | | |
| 1.3.1. | Participate regularly in Disaster management Task Force in Rwanda | Q3, Q4 FY6 Q1,Q2,Q3 FY07 | 60 | Rwanda C3P Budget |
| 1.3.2 | C3P project manager with C3P COP facilitates incorporation of crop crises data into FEWSNet reports. | Q4 FY6 Q1,Q2,Q3 FY07 | salary | Regional and Rw C3P |

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| Nr of activity | Activity | Period | Total budget (\$) | Financing |
|----------------|---|---------------------------------|-------------------|--------------------------|
| | | | | |
| | | | | Budget |
| | Subtotal I.R.1.3 | | \$60.00 | |
| | Total SO1 | | \$1,580 | |
| | 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 | | | |
| 2.1.1. | C3P project manager identifies with MINAGRI the locations and varieties of cassava that are resistant. - 3 days | Q2 FY 06 | 120 | Rwanda C3P Budget |
| 2.1.2 | C3P project manager with MINAGRI certify the quality of (phytosanitary) resistant varieties | Q3 FY06 | same as 2.1.1 | Rwanda C3P Budget |
| 2.1.3 | C3P project manager develops the call for bid documents for subgrants for CMD resistant cassava propagation and dissemination as well as for publicity campaign, for review by CCU. | Q3 FY 06 | 376 | Rwanda C3P Budget |
| 2.1.4 | C3P project manager makes Call for bid and proposal guidance documents available to PVOs and organizations interested in conducting publicity campaign. | Q3 FY 06 | 10 | Rwanda C3P Budget |
| 2.1.5 | CCU selects eligible partner PVOs and RVOs to implement subgrants based on agreed upon criteria. | Q3 FY 06 | 200 | Rwanda C3P Budget |
| 2.1.6 | Participating PVOs analyze the potential demand for cassava cuttings. | Q3, Q4 FY6 Q1,Q2,Q3, Q4 FY07 | In proposals | Regional C3P Subcontract |
| 2.1.7 | Multiplication of 92 ha of CMD-resistant varieties by partner organizations in targeted areas and diffusion of cuttings to the beneficiaries identified by the project. | Q3, Q4 FY6 Q1,Q2,Q3, Q4 FY07 | 25,000 | Regional C3P Subcontract |

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| Nr of activity | Activity | Period | Total budget (\$) | Financing |
|------------------------|--|---------------------------------|-------------------|--------------------------|
| | | | | |
| 2.1.8 | C3P project manager organizes seed fair/voucher training for selected PVOs. | Q3, Q4 FY6 Q1,Q2,Q3, Q4 FY07 | 2000 | Regional C3P Subcontract |
| 2.1.9 | C3P project manager develops M&E system and monitors the execution of the project. | Q4 FY 06 | salary | Rwanda C3P Budget |
| 2.1.10 | C3P project manager submits quarterly reports to the National Steering Committee for CMD C48. | Q3, Q4 FY6 Q1,Q2,Q3, Q4 FY07 | 5 | Rwanda C3P Budget |
| 2.1.11 | C3P project manager adapts Training of Trainers (ToT) guide for CMD control.(reprints) | Q3, Q4 FY6 Q1,Q2,Q3, Q4 FY07 | 5,000 | Regional C3P Subcontract |
| 2.1.12 | C3P project manager trains 50 Extension Agents | Q4 FY 06 | 1,500 | |
| 2.1.13 | Trained Extension Agents train 3000 farmers in CMD regions using adopted materials | Q4 FY06 | In Subgrants | Regional C3P Subcontract |
| 2.1.14 | C3P project manager with publicity firm develop key messages for radio spots, pamphlets, and posters for low literacy population. | Q1 FY7 | 25,000 | Regional C3P Subcontract |
| 2.1.15 | Publicity firm produces brochures and arranges for radio spots. | Q1 FY7 | In Subgrants | Regional C3P Subcontract |
| 2.1.16 | Branding signs are posted at 5 project sites | Q1 Q2 FY 07 | 300 | Regional C3P |
| Subtotal IR.2.1 | | | 59,511 | |
| | IR.2.2. Effective control for BXW is achieved through promotion of improved disease management techniques and through multiplication and distribution of wilt-escaping varieties | | | |

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| Nr of activity | Activity | Period | Total budget (\$) | Financing |
|----------------|---|------------------------------------|-------------------|---|
| | | | | |
| 2.2.1 | C3P project manager with IITA and ISAR identify BXW affected zones. | Q3 FY 06 | 0 | ITA C3P Budget |
| 2.2.2 | C3P project manager coordinates with MINAGRI, District of Rubavu, and WFP, the uprooting and destruction of infected banana plants. | Q3 FY 06 | 50 | Regional C3P Subcontract or Rwanda C3P Budget |
| 2.2.3 | C3P project manager with regional team analyzes potential inputs/substitution for infected fields. | Q3 FY 06 | 250 | Rwanda C3P Budget |
| 2.2.4 | C3P project manager arranges for seed fairs vouchers for 100 or more affected farmers in Rubavu District. | Q3 FY 06 | 2,000 | Rwanda C3P Budget |
| 2.2.5 | C3P project manager arranges for WFP intervention to provide 6 months of food for 100 or more affected households. | Q3 FY 06 | salary | WFP |
| 2.2.6 | C3P project manager distributes guidance to ISAR. | Q3, Q4 FY6 Q1, Q2, Q3, Q4 FY 07 | salary | Regional C3P Subcontract |
| 2.2.7 | ISAR begins in-vitro production of 5,000 plantlets of BXW escaping varieties | Q3, Q4 FY 06 | 5000 | Regional C3P Subcontract |
| 2.2.8 | ISAR identifies and acquires 10 macropropation sites | Q3, Q4 FY6 Q1, Q2, Q3, Q4 FY 07 | 0 | Regional C3P Subcontract |
| 2.2.9 | ISAR adapts Training of Trainers (ToT) guide for Banana produced by IITA/INIBAP. | Q1, Q2, Q3, Q4 FY 07 | 5000 | Regional C3P Subcontract |
| 2.2.10 | ISAR trains 30 Extension Agents | Q3 FY 06 | 2000 | Regional C3P Subcontract |
| 2.2.11 | Extension agents training ### farmers | Q3, Q4 FY 06 | 10,000 | Regional C3P Subcontract |
| 2.2.12 | C3P project manager develops M&E system and monitor the execution of the project. | Q3, Q4 FY6 | salary | Regional C3P |

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| Nr of activity | Activity | Period | Total budget (\$) | Financing |
|----------------|---|------------------------------------|-------------------|--------------------------|
| | | | | |
| | | Q1, Q2, Q3, Q4 FY 07 | | Subcontract |
| 2.2.13 | C3P project manager prepares and submits quarterly reports on BXW to the Steering Committee, CoP & M&E Coordinator. | Q3, Q4 FY6 Q1, Q2, Q3, Q4 FY 07 | salary | Rwanda C3P Budget |
| 2.2.14 | C3P project manager with publicity firm or ISAR develop key messages for radio spots, pamphlets, and posters for low literacy population. | Q4 FY6 Q1, Q2 FY 7 | 20,000 | Regional C3P Subcontract |
| 2.2.15 | Publicity firm or ISAR produces brochures and arranges for radio spots. | Q4 FY6 Q1, Q2 FY 7 | See 2.2.14 | Regional C3P Subcontract |
| <u>2.2.16</u> | <u>Branding signs posted at 10 propagation sites</u> | <u>Q1 Q2 FY 07</u> | <u>600</u> | <u>Regional C3P</u> |
| | Subtotal IR2.2. | | 44,900 | |
| | TOTAL SO2 | | | |
| | TOTALGENERAL SO1 AND SO2 | | | |
| | Sub-award amount | | | |
| | Cassava Sub-award grants+contracts | | 190,399 | |
| | Banana Sub-award contracts | | 81,599 | |
| | Total Cassava+Banana Sub-award amount | | 271,998 | |
| | Total Cassava activities | | | |
| | Cassava Administrative cost | | | |
| | Total C3P Fund Cassava | | | |
| | Total Banana activities | | | |
| | Banana Administrative cost | | | |
| | Total C3P Fund Banana | | | |
| | TOTAL GENERAL C3P Cassava+Banana | | | |

Total Costs include direct costs only, not the corresponding salary charges.

