PROJECT:
DEVELOPMENT OF POTATO SEED QUALITY BASED INNOVATIONS FOR SMALL SCALE FARMERS IN THE THREE PROVINCES AROUND BUJUMBURA TOWN IN BURUNDI

Annual Report Format for the Food & Business Applied Research Fund

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WOTRO requests an annual progress report in order to keep track of the progress of each ARF project and identify in time what support may be needed. It will also be used to inform the Programme Committee and the Food & Business Knowledge Platform. Please be sure to base this annual report on the inputs from your consortium members.

**Project details:** In Burundi, potato is the most important food and income generation where it is grown. However, unavailability and limited access to improved seeds and poor methods constrain value addition of the crop. In order contributing to resolve this constraint, Burundi potato consortium (CAPAD, ISABU, ITEC and WUR) submitted the project to WOTRO; and that project called "DEVELOPMENT OF POTATO SEED QUALITY BASED INNOVATIONS FOR SMALL SCALE FARMERS IN THE THREE PROVINCES AROUND BUJUMBURA TOWN IN BURUNDI" have been approved and funded. Main approval documents of the project were made by the project itself, award letter, project notification, consortium agreement, start letter. Project objective is availability of quality seed potato for increased food security and income generation in small-scale holding families. Expected outcomes of the project are (1) develop, validate and promote gender responsive potato technologies and innovations, (2) enhanced capacity of value chain actors to produce, market and utilize quality seed, ware and processed potato, (3) enhanced adoption of policies, standards and regulations for improved quality seed potato value chain performance in Burundi. As specified in the title, the implementation of the project is conducting in the three provinces around Bujumbura town especially in Bujumbura, Bubanza and Cibitoke Provinces. In the first phase (year 1), communes concerned are Mugongomanga, Musigati and Bubanza which are in high altitude areas. However, it is expected demonstration fields at low altitude and the communes concerned are Bubanza and Isale.

**Project title:** DEVELOPMENT OF POTATO SEED QUALITY BASED INNOVATIONS FOR SMALL SCALE FARMERS IN THE THREE PROVINCES A SURROUNDING BUJUMBURA TOWN IN BURUNDI

**Project nr:** W 08.270.203
**Name of coordinator:** NAHAYO Pierre Claver
**Consortium partners:** CAPAD, ISABU, ITEC and WUR
**Project countries:** BURUNDI
**Starting date:** August, 2014
**Reporting date:** July, 2015
**Date of submission:** July, 2015

1. **Report of progress (max. 750 words)**

**Output I: Develop, validate and promote gender responsive potato technologies and innovations.**

Base line was conducted in the country and data base was analysed to describe the status. SWOT analysis was done and business support services (BSSs) identified.

Demonstration trials and potato seed plot technology and positive seed selection were conducted to disseminate innovations and technologies in rural areas. The treatments were arranged in a randomized complete block design (RCBD) with five replications. Within province, one commune was chosen and within commune, five farmers were chosen as replication. Planting was done on October
22, 2014 at Bukinanyana, October 23, 2014 at Musigati and October 24, 2014 at Mugongomanga respectively in Cibitoke, Bubanza and Bujumbura Provinces. As results;

- harvesting at early and late stage doesn’t have any influence on tubers formation,
- harvesting at early stage reduce significantly attack by bacterial wilt disease,
- but harvesting in early stage reduce yield.
- Mean results showed also that treatment with chemical decrease disease attack and increase the formation of tuber number of potato.
- If there is no chemical application there is attack of bacterial wilt disease and tubers attacked become very high, which reduce seriously the yield.
- New fertilization techniques (from ISABU) increase seriously the number of tubers when farmers practical reduce considerably the yield.
- The result indicated also that the treatments with ISABU fertilization techniques had high influence struggle bacterial wilt disease.
- According to experiment results, it was shown that ISABU’s innovations had high performance than farmer practices for all data recorded.

Technologies were up scaled and were based on the 6 technologies to demonstrate (a) how farmer of rural area can improve potato quality seed in small scale using small plot techniques, (b) effect of vegetative cycle, chemical control, fertilization techniques, introduced variety, degenerated seed on yield, farmer field school (FFS) have been organized. invited producers are members of cooperatives Dushigikirane (Bukinanyana), Turikumwe (Musigati) and Dushigikirane (Mugongo). During FFS, programs have been discussed and agreed. Within cooperative, 5 demonstration experiments was conducted around which cooperative members were trained. Some producers are now developing technologies learned in their own fields. Non-members were also involved in FFS.

To initiate an economic analysis vision in potato production, exchanges led during FFS included thematics regarding analysis of production costs and the determining of selling prices. Indeed, selling price must consider the analysis of the market itself depending on calendar cultural.

To make seed business development sustainable, plan based on SWOT analysis was developed. It is targeting the types and size of investment needed to close the gap. In order to Improve seed quality control production and seed and ware potato distribution different innovative seed and variety diffusion strategies was explored to diffuse clean seed to small private multipliers and ware potato growers. Linkages of existing informal distribution channels currently selling seed and ware potato of unknown sources and qualities with formal system are being implemented. Public and private plant health inspector services was enhanced through advocacy and piloting of farmer/community-based quality standards, practicing self- certification and labeling, with limited regulatory oversight, training of community-based or grower association-based inspectors, and improved and easy-to-use low-cost disease detection methods. In addition, private seed potato producers was identified and trained for decentralized multiplication.

**Output II: Enhanced capacity of value chain actors to produce, market and utilize quality seed, ware and processed potato.**

Mapped actors and other stakeholders was trained. Training manuals was developed and used to train actors. Some actors was trained as facilitators through training-of-trainers (TOT) sessions. Practical training on procedures and testing methods applied in production and certification was conducted for seed growers, extensionists, certification agents and basic seed producers.

Seed potato multiplication technologies at farm level were tested. Existing farmer-training networks was strengthened to enhance farmers’ capacity to extend the quality of their seed.

In order to enhance human and institutional capacity to manage and profit from potato enterprises, training was provided to farmers, service providers, traders and processors disaggregated by gender in the development and utilization of technologies and innovations.

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Output III: Enhanced adoption of policies, standards and regulations for improved quality seed potato value chain performance in Burundi.

In order to support actors for conformity to standards and practices in marketing products, lucrative markets analysis for potato at domestic, regional and international level was done. Protocols and regulations for improved quality seed potato value chain performance in Burundi was developed.

2. Changes and unexpected results in the project (max 400 words)

By season A 2015, planting was done late on october 22–24, 2014; this influenced significantly yield components. Normally, we might plant the season B 2015 using seeds from trials of season A 2015, but at that time, potatoes were not sprout and the result was not good according to many reasons:

1. Some farmers planted using infected manure and some of plots were infected by bacterial wilt.
2. Trials were planted very late regarding the beginning of the season A.
3. The short dry season (from December to January) began before maturity. Indeed, climatic conditions have compromised the results of experiments.

According to the reasons above, we decided to reply the same experiments in season B 2015. The objective is to have seeds to be used in september 2016 (season A 2016) to test or sumarize first results obtained in order to confirm results of 1st season. Burundi is currently in a security crisis. This crisis is much more pronounced in the Bujumbura city center compared to the situation on ground. Project implementation teams are on ground; this facilitates monitoring trials and the organization of training. All trials and planned trainings were conducted.

3. Consortium (max 300 words)

The partnership between the consortium members is rooted in activities other than those of ARF project. The project helped to strengthen existing relationships. The clarity of missions of the actors as well as the consortium agreement is an important factor which contributed to enhance the existing relationship. The consortium members are CAPAD which roles are to coordinate, facilitate mass production of quality seed, facilitate input, link small scale farmers to market, up scaling innovations and technologies and organize Finance fairs; ITEC which roles are to facilitate of quality declared seed production, document innovation adoption strategies, train farmers on economic tools, and develop the promotional tools/material for quality seed production; ISABU which roles are to develop innovations, facilitate access to improved varieties, facilitate access to starter planting material; and Wangeningen University which roles are to advise techniques on in vitro and basic seed production, to make scietific support to on farm research and assist in creating business models for private potato growers specializing in seed production. In operational terms, all planning is shared between actors and everyone knows who does what and where. This also facilitates the evaluation of the achieved activities because, every month, we assessed together the progress of the all activities. This collaboration between the consortium members allows for quality work.

4. Uptake and knowledge sharing (overview)

At the begining, the project team identified local and national partners. These partners showed what could be their contributions to the success of the project. They have subsequently been invited to an official launch workshop and operational planning of activities. These partners were our privileged interlocutors in collecting baseline data. In addition, they participated in restitution workshop. Our partners are: technical services of the Ministry of Agriculture and Livestock, private partners such as NGOs, projects and programs on the potato and the local administration.

Regarding collaboration with Food & Business Platform knowledge, it is planned a regional meeting to share project progress. The meeting will be held in Uganda in October 2015 and our consortium will be represented by two participants. We participated in the workshop organized by PAEPARD in Entebbe (Uganda). There was a Seminar-Workshop about Reflection and Learning on Users Led Process.
The workshop was an opportunity for PAEPARD to learn about the achievements of the partners of the program, breakthroughs (advantages) and setbacks (constraints) of consortia, ULP or WP. Timeline regarding this aspects is produced.
Tools to facilitate the diffusion of technological innovations have been produced; these documents concern the baseline study report on the potato value chain, an operational planning document of the project, a training guide on FFS. At these FFS, the factors to highlight are: (a) how farmer of rural area can improve potato quality seed in small scale using small plot techniques, (b) effect of vegetative cycle, chemical control, fertilization techniques, introduced variety, degenerated seed. invited producers are members of cooperatives Dushigikirane (Bunikanyana), Turikumwe (Musigati) and Dushigikirane (Mugongo). During FFS, programs have been discussed and agreed. Within cooperative, 5 demonstration experiments was conducted around which cooperative members were trained. Actually, some producers (members and non members of cooperatives) are developing technologies learned in their own fields.

5. Impact Pathway (max 1 page)

Changes occurred doesn't need an adjusted impact pathway.
Annex to 4. Overview reporting on uptake and knowledge sharing, including the activities of the F&B Knowledge Platform (F&BKP). Please add rows if necessary. Specify main stakeholders and explain the related category if necessary (such as network, NGO, business, policy etc.). Maximum 2 pages.

<table>
<thead>
<tr>
<th>I. National and international stakeholders (e.g. local communities and networks, NGOs, institutions, platforms and networks from research, society, government, and/or private sector)</th>
<th>Activities (including capacity building and communication) per stakeholder</th>
<th>Objectives (initial, adjusted or new)</th>
<th>Progress and / or constraints to realise objectives</th>
<th>Lessons learned to improve output, outcome and impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wageningen University</td>
<td>Advising consortium members</td>
<td>Sharing experience</td>
<td>On going</td>
<td>Key person (from Wageningen university) experienced</td>
</tr>
<tr>
<td>• ISABU</td>
<td>Conducting of trials on farmers field, farmer field school training</td>
<td>To increase production</td>
<td>Data analysis finished. Second experiments on going.</td>
<td>Farmers conducted themselves trials in collaborating with researchers</td>
</tr>
<tr>
<td>• Producers</td>
<td>Conducting of trials on farmers field, farmer field school training</td>
<td>To produce quality and quantity seed</td>
<td>Data analysis on going for 1st trials. Second experiments on going.</td>
<td>Producers are conducting themselves experiments in collaborating with researchers</td>
</tr>
<tr>
<td>• CAPAD</td>
<td>FFS Experience exchange</td>
<td>Up scaling innovations from ISABU</td>
<td>Some adoptions, other adoptions on going</td>
<td>Farmers interested</td>
</tr>
<tr>
<td>• ITEC</td>
<td>Capacity building on economic thematics</td>
<td>Production market oriented</td>
<td>On going</td>
<td>Thematic required alphabetized farmers</td>
</tr>
</tbody>
</table>

II. Collaboration with the Food & Business Knowledge Platform and its networks, platforms, activities

<table>
<thead>
<tr>
<th>Activities (including capacity building and communication) for each collaboration</th>
<th>Objectives (initial, adjusted or new)</th>
<th>Progress and / or constraints to realise objectives</th>
<th>Lessons learned to improve output, outcome and impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. Output dissemination, Specify target group(s) per</td>
<td>Objectives (initial, adjusted or new)</td>
<td>Progress and / or constraints</td>
<td>Lessons learned to improve output, outcome and impact</td>
</tr>
</tbody>
</table>
including communication with policymakers, practitioners and wider circle of professionals and public.

<table>
<thead>
<tr>
<th>Establishment of pilot sites for technologies and innovations development, validation and promotion</th>
<th>Farmers and Producers</th>
<th>To produce quality seed, to increase production</th>
<th>On going</th>
<th>Producers and farmers are lacky of knowledge on how to produce seed and how to increase production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FFS training manual</strong></td>
<td>Farmers</td>
<td>To facilitate dissemination</td>
<td>On going</td>
<td>Adoption on going</td>
</tr>
</tbody>
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