



## Burundi Agribusiness Program: PY 5 Third Quarter Report 1 April – 30 June 2012

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## Acronyms and Abbreviations

ACE	Alliance for Coffee Excellence
ADC	Agent de Développement Communautaire
AFAB	The Burundi Association of Women Entrepreneurs
AFCA	African Fine Coffee Association
ARFIC	Agence Régulateur de la Filière Café
ASBL	Association sans but Lucratif
AVEDEC	L'Association Villageoise d'Entraide et de Développement Communautaire
BAP	Burundi Agribusiness Program
BBIN	Burundi Business Incubator
BCC	Business Concept Course
BBN	Burundi Bureau of Normalization
CAPAD	The Confederation of Agricultural Producer Associations for Development
CECM	Caisse d'Epargne et Crédit Mutuelle
CERADER	Centre de Recherche Agronomique et du Développement Rurale (U Ngozi)
CNAC	Confédération National des Caféculteurs
CNTA	Centre Nationale de Technologie Agro-Alimentaire
COGS	Cost of Goods Sold
COE	Cup of Excellence
COP	Chief of Party
COTR	Contracting Officer's Technical Representative
CQI	Coffee Quality Institute
CTO	Cognizant Technical Officer
CURDES	Centre Universitaire de Recherche sur le Développement Socio-économique
CWS	Coffee Washing Station
DCA	Development Credit Authority
DCOP	Deputy Chief of Party
DG	Directeur Général (Managing Director)
DPAE	Direction Préfectorale de l'Agriculture et Elevage
EAFCFA	East African Fine Coffee Association
EAWEExN	East African Women Entrepreneurs Exchange Network
ESF	Economic Support Funds
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FBU	Francs Burundais
GAP	Good Agronomic Practices
GDP	Gross Domestic Product
GMP	Good Management Practices
GOB	Government of Burundi
HACCP	Hazard Analysis and Critical Control Point
HVC	Horticultural Value Chain
IAB	Industrie Agro-alimentaire de Buterere (dairy)
IFAD	International Fund for Agricultural Development
IGAA	Assn for le Progrès de la Femme et l'Enfant (Local NGO)
IMF	International Monetary Fund
INADES	Institut Africain du Développement Economique et Sociale

IQC	Indefinite Quantity Contract
IRAZ	Institut de la Recherche Agronomique en Zootechnie
ISABU	Institut de Recherche Agronomique du Burundi
ITAB	Institut Technique Agronomique de Burundi
IWCA	International Women's Coffee Alliance
KIST	Kigali Institute of Science and Technology
KTBH	Kenyan Top Bar Hive
LF/CV	Lead Farmer/Community Veterinarian
LOE	Level of Effort
LOL	Land O'Lakes
MCC	Milk Collection Center
MFI	Micro-Finance Institution
MINAGRIE	Ministère de l'Agriculture
MCC	Milk Collection Center
MOU	Memorandum of Understanding
MSU	Michigan State University
NGO	Non-Governmental Organization
OTF	On the Frontier
OCIBU	Office du Café de Burundi (Coffee Board)
PAGE	Projet d'Appui à la Gestion Economique
PHAST	Participatory Hygiene and Sanitation Transformation
PNIA	Plan Nationale d'Investissement Agricole
PRASAB	World Bank Funded Development Program in Burundi
PO	Producer Organization
PP/S	Participants per Session
SCAA	Specialty Coffee Association of America
SCAE	Specialty Coffee Association of Europe
SCEP	Service Conseil aux Efforts de Privatisation
SCP	Soil Conservation Practices
SIVCA	Société pour la Valorisation Industrielle du Café
SODECO	Société de déparchage du Café
SOGESTAL	Société de Gestion des Stations de Lavage
STTA	Short Term Technical Assistance
UHT	Ultra-High Temperature
USD	US Dollar
USG	US Government
VC	Value Chain
WB	World Bank

# Executive Summary

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The third quarter of this project year coincided with the peak coffee harvest period in Burundi, the 2012–B agricultural season, as well as the default period for our second round literacy activities. During this quarter, the Rutegama farmer’s cooperative “GARUKIRAMATONGO” opened their Milk Collection Center, BAP’s second. The four cooperatively owned and mini-washing stations opened their doors for business, procuring and processing cherry to parchment, generating a high level of interest among the international specialty community resulting in a number of in-bound buyers and roasters visiting their operations as well as representatives of the local banking community and the Chargé d’Affaires from the US Embassy. BAP’s COTR visited our dairy activities, and we received a mission from USAID, assessing our work treating coffee washing station effluents. The small grants approved last quarter for income generating activities initiated by our client associations and cooperatives were implemented during this quarter to varying degrees of success. Burundi’s environmental conditions proved to be less than favorable for optimizing production during this quarter due to early rainfall deficits, followed by hail, high winds and then heavy rainfall during flowering and seed set for a number of the horticultural crops. In the local economy prices continued to rise for goods and services, the Burundian franc continued its downward slide against the dollar and the banking sector appeared highly risk averse and capital constrained when it came to lending to the coffee sector. By the end of this quarter the following results, by sector, had been achieved.

In **Coffee**, production is expected to be 122% better than 2011, however the percentage of washed coffee is expected to remain higher than initially anticipated because of the agility of coffee collectors who proved able to pay competitive prices with cash on the barrelhead while operators in the fully washed sector were constrained in finding financing until late in the month of June for reasons cited above. The transfer of ownership for washing stations and the dry mill tendered during the previous reporting period resulted in a period of uncertainty with new actors in play and the banking sector unable or unwilling to interpret the horizon. A number of the traditional actors still had unpaid debts from last season and the new actors were perceived to be unknown entities without a track record. Lead farmers implementing demonstration plots of best practices for coffee achieved mean year on year production increases, normalized for cyclicity of up to 38% on plots where organic compost and mineral fertilizer were both applied. Organic compost alone increased productivity an average of 8.5% versus traditional controls. A case study on the comparative value of certification showed that farmers earn more, productivity is higher, adoption rates of best practices was higher and more attention was paid to protection of the environment by certified farmers than those who were not. Fifty three training sessions were offered for 1354 lead farmers by ADC. These lead farmers in turn organized 251 sessions for 5514 farmers on their respective hillsides 44% of whom were women. Promotion activities this quarter included participation at SCAA including sponsoring the participation of new private sector actors and the organization of a “buyer’s tour” in mid June.

In **Dairy** our efforts focused on providing support to the newly established milk collection centers, on training an additional class of lead farmer community veterinarians to provide preventive diagnostics

and primary care to cattle in the MCC draw zones; on reinforcing the capacity of artisanal dairies to produce high quality cheese and other milk value added byproducts under hygienic conditions and to diversify their offerings to the consumer market. Finally a great amount of effort was expended collecting data on the impact of improved forage multiplication and dissemination as well as the initial efforts to reintroduce artificial insemination in order to improve herd configuration and productivity.

In **Horticulture** BAP finalized collection of 2012 A demonstration plot data. We found that over 12.2 mT of vegetables were harvested from these plots generating a revenue of 1.9 million FBU for cooperating farmers from these eight plots. Data analysis shows that adoption of best horticultural practices improved yields an average of 183% for tomatoes and 27.6% for cabbage. Cost/Benefit analyses show that market timing and placement are as important as productivity in making money from horticulture. Post harvest loss can be minimized with improved conditioning but true value addition comes from processing (drying, canning, production of relishes, chutneys, salsas, etc). There is a need for improved village scale drying and processing technologies that are affordable to the farmers. Results from the 2012 B season demonstration plots and horticulture grant activities was just becoming available at the end of the reporting period and will be fully reported upon next quarter. Forty-four of 57 clients, benefiting from grants for horticulturally related income generating activities had begun harvest. Twelve groups achieved their production goals, but only three groups achieved their revenue targets. Adoption of small scale irrigation technology has proven key to assisting associations to produce in all three agricultural seasons. We note, with pleasure that a number of associations and individuals are transitioning from a subsistence type horticultural production to a more enterprise based commercial type production and are beginning to reinvest in their enterprises purchasing land and equipment as well as small ruminants to assist in production of manure and organic compost. Farmer field days have resulted in organic replication of improved technologies, particularly the adoption of trellising for tomatoes and raised bed plantings, principally in a radius of 1-5 km from the demonstration sites but, in some instances, stretching out as far as 6-10 km. Promotion of cageots (wooden boxes) for market disaggregation and improved transport of product to market without crushing continued as did prototype modeling of new market displays for horticultural products. BAP produced and disseminated 3600 sets of horticultural extension materials in local language this quarter-principally to farmer association members, lead farmers, and hillside agricultural monitors. Finally, in collaboration with CNTA, BAP finished the post harvest technology training for village association members in four provinces during this reporting period.

In **gender and micro-enterprise development** , this reporting period saw the kick off of second phase literacy activities with 137 centers opened in 11 provinces serving over 2.720 association members. Twenty women's associations implemented income generating activities in horticulture, beekeeping and soap making/marketing. The association producing soap from palm oil produced and sold over 50,000 bars in a two month period generating 5.4 million fbu in revenue. ADC continued capacity reinforcement for associations focusing this quarter on governance, management and bookkeeping skills . A total of 521 members of 75 different associations of whom 65% were women attended these sessions

In **Small Grants and Financial Intermediation**, seven grants were approved during this reporting period, four to coffee associations, two for improved beekeeping and one for the development of a veterinary

supplies boutique. Two grants were rejected (one in horticulture/food processing and the other for improvements in effluent control at a washing station) and two others are in process (one for a coffee quality center and the other to improve cheese making operations) both in Ngozi. BAP facilitated submission of dossiers for coffee campaign financing for cooperatives in the amount of over 150 million fbu under the umbrella of the Development Credit Authority. At a time when other actors were constrained by financing, cooperative clients of BAP with good track records received credit for both operations and cherry purchase.

Under the component **Clean and Productive Environment** activities during this reporting period focused on completion of nine new coffee washing station effluent control systems, monitoring progress on the Kigoganya Community water system, documenting management of the Kinyovu community water system and the sampling and analysis of mid-season water samples at 18 washing stations with effluent control systems and five stations without. Major improvements in pH, odor control, nitrogen by product production and re-oxygenation were found at stations with solid separation and grey water effluent treatment vs stations where no treatment of pulp or grey water occurs. It is evident however that system upkeep and maintenance as well as regular continuous management is necessary if these effluent control systems are to provide their maximum positive benefit. Issues remain regarding the amount of lime to be added to the system, the timing of lime renewal, and in managing timing of water throughput in years of high production.

At the **Burundi Business Incubator** the second round of the Shika Business Plan competition kicked off, pre-incubation services were offered to two new enterprises and pre-incubation was, for the first time offered to students with entrepreneurial ideas choosing to develop business plans while continuing their studies. A meeting/training session was held for 8 business mentors and coaching of clients began soon thereafter. A meeting of the incubator selection committee resulted in five enterprises being accepted for incubation, three of whom will be residents and two of whom have selected an affiliate status. Banks were approached regarding their interest in financing BBIN clients, a number of seminars related to leveraging financing were facilitated and finally, outreach began toward clients in the rural areas.

# Value Chains

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## Coffee

### Introduction

This reporting period falls at the heart of Burundi's coffee harvest. As such it is characterized by a diversity of activities linked to harvest, processing, milling, and buyer relations. Also during this period the 2<sup>nd</sup> year's data from the demonstration plots became available and operations of the four BAP mini-washing stations began in earnest. Further, in terms of marketing and promotion, BAP participated in the Specialty Coffee Association of America Trade show in Portland Oregon and hosted an incoming coffee buyer's tour. Preparations for Burundi's first "Cup of Excellence" competition also picked up speed during this quarter.

In general, coffee production during 2012 surpasses that of 2011 by approximately 122%. The percentage of fully washed coffee this season is anticipated to be 56,6%. Productivity on BAP coffee demonstration sites increased when averaged across all treatments. Our control plots averaged a 73% year on year increase from 1.56 kg/cherry per tree to 2.7 kg/cherry per tree due to the fact that this is an up year for production rather than a down year in the fruiting cycle. When data are normalized for year on year cyclicity we found the following results across provinces. The treatments with organic compost experienced production increases of 8.5% over the previous year; those receiving chemical fertilizer increased 34.2%; while those treatments receiving a mixture of chemical fertilizer and compost increased production, on average, 38.2% over 2011.

A case study on the impacts of coffee certification performed in collaboration with the University of Ngozi with farmers in the Kagombé draw zone in Muyinga province was completed during this reporting period. It shows that in comparison to stations where certification was not present, certification benefitted both the farmers and the SOGESTAL because a) certification led to farmers receiving better extension services (more frequent visits/targeted training) which in turn led to a higher rate of adoption of best agronomic practices for coffee by farmers in the draw zone; b) adoption of best production practices increased overall productivity, reduced the amplitude of year on year cyclicity, and led to an increase in the number of farmers producing coffee; and c) because of certification, farmer revenues increased, greater attention was paid to improving and protecting the environment and there is better traceability for coffees at the washing station.

BAP continued its efforts to assist the three cooperatives managing mini-washing stations equipped with Penagos Ecopulpers to receive FAIR Trade certification. To this end: a) training was provided to farmers of the different cooperatives; b) applications submitted to FLO were accepted by the organization and c) with audit fees now paid, FLO is preparing to travel to Burundi to perform its initial inspection visit with each cooperative.

During this reporting period BAP field agents offered 53 training sessions to a total of 1354 lead farmers of whom 32% were women. Principal themes developed this quarter were: agronomic maintenance of coffee plantations, Fair Trade Certification, fertilization of coffee, improving coffee quality, this year's coffee market and pest management for coffee plantations. The lead farmers in turn offered a total of 231 training sessions on their respective hillsides reaching 5514 participants of whom 44% were women.

BAP's coffee team reinforced the training sessions offered during the previous quarter to washing station managers for the production and processing of coffee for the specialty market with a number of site visits to washing stations in our zone to work with the managers and their teams on specific issues.

Following the installation of 4 mini-washing stations with client cooperatives last quarter, BAP continued to provide technical assistance and close monitoring of operations through this reporting period to assist in calibrating and troubleshooting. Further, with BAPs assistance these cooperatives were able to leverage working capital from InterBank under the aegis of the Development Credit Authority.

Promotion and marketing activities this quarter centered on three areas: a) preparation for the 2012 Cup of Excellence competition with the continued facilitation of the national organizing committee, recruitment and training of contractual auditors, development of a database program to manage samples through the competition and the reception of 228 lots submitted for competition from 69 different washing stations owned by 28 different enterprises; b) participation at the Specialty Coffee Association of America Trade Show in Portland Oregon in support of Burundi's coffee sector; and c) facilitation of buyers visits and tours for 11 organizations including green coffee buyers, importers and roasters from Europe, Australia, Canada and the United States.

Finally, in collaboration with Radio Isanganiro, BAP facilitated a panel discussion between actors interested in coffee on the theme "Managing the Coffee Campaign under a liberalized system in process of being privatized". More than 40 people participated in the panel from 5 different categories- the government, the coffee farmers, the coffee sector actors (InterCafe, washing station managers and owners, dry millers, the coffee reform committee, etc..), banks, projects and non-governmental organizations.

## Coffee Deliverables Matrix

Indicators	Results accomplished Q3 PY 5	Cumulative
<b>Initiate a demonstration plot-based extension program to diffuse knowledge of improved production practices</b>		
120 demonstration plots established with BAP Lead Farmers from years 1-3 with a minimum of two techniques implemented in each demonstration plot.		139 demonstration plots established
10 InterCafé agronomic technicians trained		552 agronomics technicians trained (546 from DPAE and 6 from federations)
6 training workshops organized with InterCafé for DPAE personnel and Communal Agronomists in Best agronomic practices for Coffee		12 workshops organized +14 communal level workshops on Best agronomic Practices for Coffee
At least 4 Fiches in Kirundi and French produced for use by BAP and InterCafé on each of following techniques: organic fertilizer application; mixing organic and chemical fertilizer use; composting; water management & harvesting; sequencing the renewal of old trees on a plantation are conceived, published and distributed to farmers at pilot washing stations and extension personnel.		3 fiches produced on organic fertilizer application, on composting and on coffee deases
<b>Initiate an applied research program to capture demonstration plot results to identify most effective measures for reducing cyclicity</b>		
Research Program study protocol and filed instruments produced		The procol produced
Data collected from BAP demonstration plots and U. Ngozi/ISABU research plots		Data collected
Preliminary results report for 2011 season		The report produced
Final report for 2012 season	Final report done and available	Final report done and available
<b>Conduct a demand-driven training program for new CWSs not yet practicing improved processing techniques introduced by BAP in prior years</b>		
30-40 representatives from new Pilot CWSs trained in quality enhancing techniques		97
At least 5 training workshops held in new pilot washing stations prior to the 2012 season	One training workshop held for miniwashing station presidents and factory manager from CNAC on coffee productivity and quality	2 workshops held
InterCafé staff trained on improved processing techniques		371
<b>Work with InterCafé to set up and equip a Coffee Quality Center (CQC)</b>		
MOU signed with InterCafé to launch CQC	A MOU signed with SIVCA	A MOU signed with SIVCA
CQC Business Plan developed	A CQC Business plan development ongoing	A CQC Business plan development ongoing
CQC equipped with cupping equipment and furnishings	CQC equipement procurement in process	CQC equipement procurement in process
<b>Expand the corps of professional cuppers</b>		
Training sessions are held to identify a new group of highlyleveled cuppers, integrating younger university and Technical school graduates	One training session is held for COE organization	2 training sessions
At least 5 new lead coffee cuppers are selected		5
Newly trained Burundian Cuppers undertake exchange visits and are invited to cup at regional coffee events in East Africa		Not yet
At least 2 Burundian cuppers receive internships with International Roasters to improve their capacities	Contact in process	In process Roasters at Counterculture Coffee and Peets coffee are interested in receiving interns
A Cup of excellence completion is held to identify the highest quality lots in Burundi	Coffee pre selection competition finished	Preselection finished; Competition lots for Ntl Jury have been defined; Samples have been taken for all competition lots
A Cup of Excellence is held in Burundi		Scheduled for August 2012
<b>Put in place systems for controlling coffee washing station effluent run-off</b>		
Pre-season, mid season and post season water analyses are completed and analyzed at 9 CWS with effluent control and 9 without effluent control systems		Done on 17 CWS with effluent control and on 8 without effluent control systems
6 new CWS are equipped with effluent control systems		17 CWS are now equipped with effluent control systems
3 influent treatment systems are piloted at CWS equipped with effluent control systems and at least 1 water recycling system is implemented with industry support		2 CWS
<b>Support InterCafé to develop its capacity to promote and market Burundian coffee</b>		
InterCafé participates with BAP training support to deliver presentations for one overseas trade mission, two international trade shows and at least one inward buyer mission.	One International coffee conference and exhibition is held in Portland, Oregon USA	One mission organized in Korea; one trade show at EAFCA in Addis Abiba; participation at SCAA in Portland Oregon USA
InterCafé procedures manual developed for sending of overseas samples with attributed responsibilities		Not yet
Data base of Burundian buyers created and used at InterCafé	Database updated for 2012	Database exists- updated for 2010-2011, needs updating for 2012. Use by InterCafe not yet effective
<b>Expand the core of CWS certified by the UTZ Kappeh program</b>		
MOUs with FLO and/or UTZ, InterCafé and relevant farmer Cooperative Federations to develop certification	MOUs with FLO is developed with three coop	MOUs with FLO is developed with three coop
At least 2 new CWS receive some form of certification		3 CWS in process for FLO (Fair Trade) Certification
InterCafé begins to promote certification		Not yet
<b>Develop a coffee quality data base</b>		
Data base created and provided to InterCafé		Exists
Sensory data classification scheme devised and systems set up for inputting cupping data		Not yet
Internet accessibility initiated		Done, a internet site functioning
Initial maps of taste profiles developed		Not yet
<b>Construct 3 new Mini Washing Stations and build capacity of farmer cooperatives to run them with production trials in 2012 season</b>		
3 Mini Washing Stations are built with support from BAP		4 Mini washing stations built: dusangirijambo of Bwayi, Mboneramiryangoof Korane, Dusangirijambo of Karinzi, Kanovera of Ntamba
3 Farmer Cooperatives are strengthened with institutional, managerial and technical training. All will produce Business plan.	Cooperative staff are trained on the ground for coffee quality processing and cooperative management	4 Business Plans developed for 4 mini-CWS; 8 cooperatively owned CWS receive management training
<b>Help coffee producer associations implement income generating and agricultural diversification projects</b>		
20 BAP activity grants given to coffee cooperatives to support income generating projects		10 coffee associations received grants in horticulture sector
At least 200 households benefit		334 households benefited
<b>Contribute to the on-going policy dialogue on the evolution of coffee sector regulation and disseminate information about reforms</b>		
26 new radio broadcasts per year on coffee reforms		13 new radio broadcasts produced
2 coffee reform panel discussions	One coffee panel organized	1 Panel organized
5 Workshops organized with Provincial Governments on coffee reforms		6 workshops organized in Kayanza, Ngozi, Muyinga, Gitega, Kirundo and Bubanza
1 radio publicity announcement per month	One newspaper publicity announcement published in IWACU magazine	1 for the Cup of Excellence was produced during February; one advertisement for COE published in IWACU magazine
At least 1 white paper on coffee sector reforms		Not yet

## Activities undertaken during this reporting period

### 1) Research and Development actions designed to increase productivity

#### a) Fertilization Demonstrations with Lead Farmers

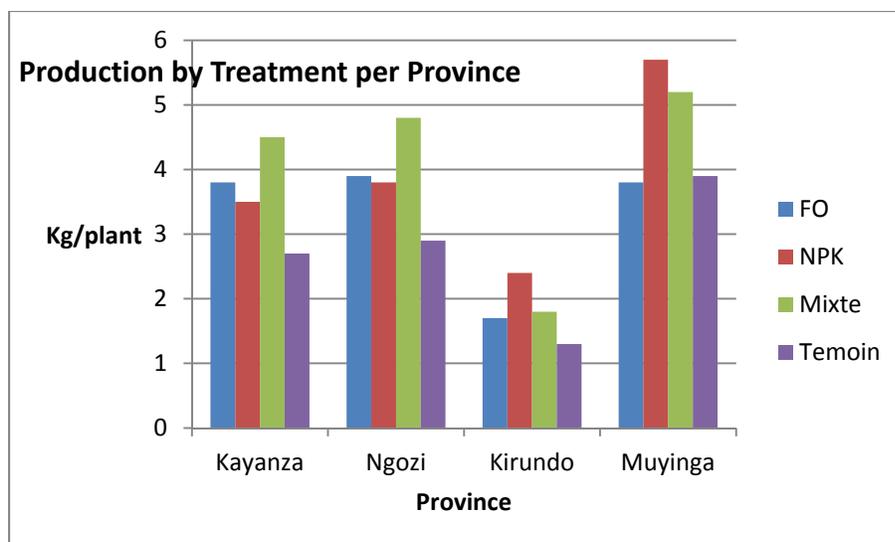
This initiative was begun during the fall of 2010 with the recruitment and training of three coffee agronomists and the identification of lead farmers willing to host demonstration sites. Collaboration with InterCafe allowed us to leverage fertilizer and other inputs, while ISABU provided technical backstopping on the implementation of protocols. Initially 84 lead farmers participated and results from the 2011 coffee campaign showed that any fertility treatment resulted in a productivity increase of at least 27% while a mixture of organic compost and mineral fertilizer increased productivity by 36% when compared with traditional controls. Further a case study of 15 farmers showed that improved soil fertility improved the quality of the cherry as well as the productivity of the tree, reducing the rejection rate of cherry at the washing station due to floaters from 23% to less than 12%.

For 2012, an up year in terms of production cyclicity, BAP assisted 139 lead farmers with demonstration plots in four different provinces: Kayanza, Kirundo, Muyinga and Ngozi. We note however that the 2012 season was characterized by a number of climactic challenges including no rainfall during the months of January and February necessitating a realignment of the second fertilization schedule for many plots and hail which fell on certain high altitude plots resulting in the partial or total loss of production from these plots which then needed to be eliminated from analysis. In Kirundo, the delayed rainfall resulted in a dynamic where, when the rain recommenced in early March, the cherry were already reaching maturity and a second fertilizer application was not indicated as it would have had little to no agronomic effect on productivity or plant health for the cost investment.

As can be seen in the following table, a combination of chemical fertilizer with organic compost resulted in the highest mean productivity of any treatment followed by chemical fertilizer alone and organic matter. However, even the organic matter treatment yielded 22% more than traditional controls this season, while the mixed treatment of chemical fertilizer and organic matter out yielded the control by over 51%. Coffee in Muyinga province had the highest per tree yields for every treatment but organic matter. Both Muyinga and Kirundo provinces responded best to treatments of chemical fertilizer alone, while in Ngozi and particularly Kayanza best response was exhibited on treatments combining organic compost with chemical fertilizer, followed by the organic compost treatments, suggesting these soils are particularly starved for organic matter and that agronomic response is as much due to improved soil organic matter and improved soil structure as it is to the addition of chemical fertilizer.

Mean Productivity in kg cherry/tree by treatment and province for 2012

Treatment	Kayanza n=49	Ngozi n=50	Kirundo n=15	Muyinga n=25	Moyenne n=139
OM	3.8	3.9	1.7	3.8	3.3
NPK	3.5	3.8	2.4	5.7	3.85
Mixte (NPK +OM)	4.5	4.8	1.8	5.2	4.075
Control	2.7	2.9	1.3	3.9	2.7



The following table shows the one year (2012) increase in productivity due by soil fertility treatment when compared to traditional controls in each province. According to this the best agronomic response was achieved in Kirundo province when applying 100 gr NPK chemical fertilizer per tree in a single dose in November. The second highest responses were achieved in Kayanza and Ngozi provinces where a mixed application of 10 kg of organic compost and 100 gr of NPK fertilizer applied in a split dose in November and February per tree increased productivity by 66.7% and 65.5% respectively.

Treatment	Kayanza	Ngozi	Kirundo	Muyinga
OM	41%	34.5%	30.8%	-2.6%
NPK	29,6%	31%	84.5%	46.2%
Mixte	66.7%	65.5%	38.5%	33.3%

In the following table we compare the average gross productivity by treatment over the two campaigns (2011 and 2012) by treatment to evaluate productivity increases over time as related to different soil fertility amendments. Then using the traditional control data as our base for determining how much of this increased productivity could be linked to the fact that 2012 was an up cycle production year we redacted out this difference due to cyclicity from our gross productivity to give us normalized data by which to judge the impact of each soil fertility treatment on productivity over two seasons. In this way we are able to determine that true year on year productivity related to soil amendments are: 8.54% for organic compost alone; 34.16% for chemical fertilizer alone and 38.21% for a mixture of organic compost and chemical fertilizer.

Mean productivity expressed as kg cherry/tree by treatment across provinces over two successive campaigns

Treatment	2011	2012	Mean overall increase between seasons	Mean increase due to treatment, normalized for year on year cyclicity	Normalized % increase due to treatment once data has been normalized to remove cyclicity as a variable
OM	1.99	3.3	1.31	0.17	8.54%
NPK	2.02	3.85	1.83	0.69	34.16%
Mixte (NPK +OM)	2.12	4.075	1.955	0.81	38.21%
Control	1.56	2.7	1.14		

The following table analyses prefectoral performance of soil amendments over two campaigns (2011 and 2012) as normalized for year on year cyclicity. The first thing to notice is that cyclicity is most accentuated in Muyinga province followed by Ngozi and to a limited extent Kayanza province. Between a poor production cycle and a good one, the traditional controls improved their productivity 2.7 kg/tree; 1.7kg/tree and 0.5 kg/tree respectively. The Kirundo province shows no year on year difference due to cyclicity (only 0.1 kg/tree difference between up and down years) with relatively low production in each year of this study. It is also interesting to note that organic compost as a treatment had a significant positive impact on per tree productivity in Ngozi and Kayanza provinces, but negatively influenced productivity between years in Muyinga and Kirundo provinces. Taking the extremes, in Ngozi province, the treatment with organic compost alone, increased year on year production normalized for cyclicity, by 37.5% while in Muyinga province, the same treatment exhibited a true decrease in productivity of 35.3%. Interestingly, the mixed treatment improved normalized yields by over 40% in all provinces except Kirundo where there was no increased production noted for this treatment over the two campaigns under review. The province with the greatest normalized productivity increase using the mixed treatment was Ngozi (82.4%) followed by Muyinga with 47%. The chemical fertilizer application using NPK showed the best results in Muyinga, increasing year on year normalized productivity by 50%. Ngozi province followed with a 40% increase under NPK application followed by Kayanza with a 20% increase. Though chemical fertilizer yielded the best results of all treatments in Kirundo, year on year normalized productivity increase only resulted in a 15% increase, the worst of all provinces in the study.

Trmt	Kayanza				Ngozi				Kirundo				Muyinga			
	011	012	X incr, norm. for cyc	% norm. incr	011	012	X incr, norm. for cyc	% norm. inc	011	012	X incr, norm. for cyc	% norm. . incr	011	012	X incr, norm. for cyc	% norm. inc
OM	2.6	3.8	0.7	26.9	1.6	3.9	0.6	37.5	1.7	1.7	-0.1	-5.9	1.7	3.8	-0.6	-35.3
NPK	2.5	3.5	0.5	20	1.5	3.8	0.6	40	2	2.4	0.3	15	2	5.7	1	50%
Mixte	2.8	4.5	1.2	42.9	1.7	4.8	1.4	82.4	1.7	1.8	0	0	1.7	5.2	0.8	47.1
Control	2.2	2.7			1.2	2.9			1.2	1.3			1.2	3.9		

We note that farmers in Kirundo have been more reticent than those in other provinces to produce organic compost because there is a dearth of manure available in proximity to their plantations and the pulp from the washing stations was insufficient to meet the needs of cooperating farmers and these farmers did not seek to replace the pulp with alternative organic substrates like banana leaves. Given this, it is highly likely that farmers in Kirundo either did not apply organic matter to their plots or applied organic matter at rates that were less than those recommended by ISABU thus negating the effect this compost could have. Also because Kirundo is drier than any of the other provinces and is regularly subjected to periods of erratic rainfall and drought, it is possible that the compost applied, did not break down as quickly as in other provinces and that instead of releasing nutrients to the plants, the organic matter actually resulted in less availability of nutrients because the nitrogen volatilized and the P and K were absorbed by free anionic (negatively charged) particles in the soil- aluminum for phosphorus and chlorides for potassium.

Further, soil analyses performed in partnership with the University of Ngozi revealed that 37.5% of coffee households interviewed in Ngozi and 20.8% of those in Kayanza had soil pH lower than 5.3, while in Kirundo only 16.7% had soils this acid. Because coffee compost has a basic pH (between 8.5 and 9, according to analyses performed by BAP in 2011), the addition of compost to highly acidic soils is likely to have a dual effect of sweetening the soil allowing for greater nutrient uptake and creating soils with better structure and soil water retention characteristics. It is for this reason that perhaps the application of organic compost yields bigger productivity increases in Ngozi and Kayanza and is less effective in Kirundo and, to a lesser extent, Muyinga.

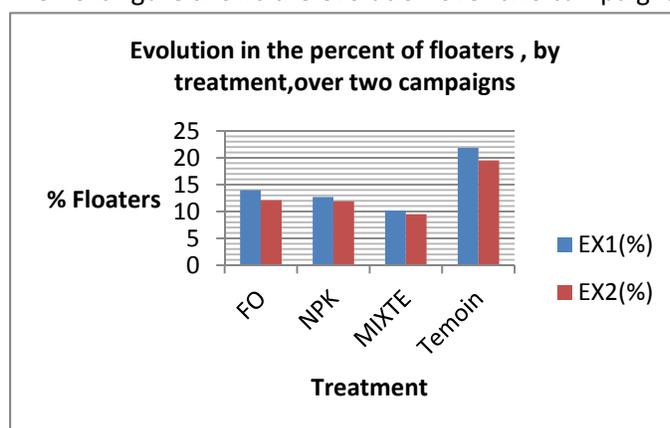
These data suggest that the best treatment for farmers who can afford it is a mixed dose of organic compost coupled with a split dose of NPK fertilizer. If however, household income is a constraint, then in Kayanza and Ngozi farmers should focus on producing and applying organic compost, while in Muyinga and Kirundo farmers should invest first in chemical fertilization before investing in organic compost if they are looking to improve productivity on their plantations over the short to medium term. More data is needed before a determination can be made as to which treatment in which province will result in a dampening effect to year on year cyclicity. It is suggested that InterCafe along with ISABU continue collecting and analyzing data from these lead farmers for the next two to five campaigns. If the differences in treatment response continue to exist between provinces then we must look to environmental, agronomic and perhaps demographic differences to explain the data.

Turning now to quality of production, as measured by the percent of cherry brought to a washing station by treatment, that floats, we obtained the following results for the 2012 campaign, by province.

Treatment	Kayanza	Ngozi	Kirundo	Muyinga
Organic Compost	12.1	11.3	29.5	14.7
NPK	11.9	10.9	18.7	11
Mixed Applic.	9.5	10.1	25.6	11.5
Control	19.5	12.7	25.8	15.6

In Kayanza, the control averaged a 19.5% rejection rate at the washing station. Any soil amendment decreased this rejection rate by at least 7 percentage points, while a coffee from the mixed treatment exhibited a less than 10% rejection rate. Farmers in Muyinga were able to decrease rejection due to flotation at the washing station by up to 4% under chemical fertilization and under mixed applications of chemical and organics, while those in Ngozi reduced rejection by only 2% with the best results being obtained under the mixed amendment treatments. In Kirundo, rejection rate decreased by 7% for the NPK fertilizer treatment. We note that Kirundo had the worst rejection rate due to flotation of any province, with fully  $\frac{1}{4}$  of all cherry brought to the washing station rejected as being sub standard.

The next figure shows the evolution over two campaigns of quality in Kayanza province.



As can be seen the percentage of floaters declined in all cases from 2011 to 2012, even among the traditional control which saw a 2.4% drop in rejection from almost 22% of cherry to 19.5%. What is interesting is that any effort to improve soil fertility improved cherry quality by at least 7% which translates to at least a 64% improvement to the farmer's bottom line. The mixed treatment yielded cherry of the highest quality in both years, while chemical fertilization outperformed organic compost in both seasons. While results related to improved quality are not significant year on year when normalized for cyclicity, it does appear that continued application of organic compost in successive campaigns progressively reduces the percent of floaters, most probably due to the mitigating effect of the compost on soil acidity and the time delay in the release of nutrients through organic matter breakdown.

#### **b) Impact of Certification, the case study of UTZ certification for farmers at the Kagombé Washing Station in Muyinga Province**

In collaboration with the University of Ngozi, BAP conducted a case study to document the impact of certification on farmers serving the Kagombé washing station. The objective of the study was to determine if certification contributes positively to the reduction of year on year cyclicity and an improvement in overall productivity. The study was also designed to estimate the impact of certification on farmer revenues and family livelihood and to assess their attitudes toward a wide range of factors including: their socio-economic well being, capacity and willingness to reinvest, their view on agronomic risk and their confidence that certification has been the key factor in improving their lives.

In order to better assess results obtained at Kagombé a reference washing station (Rugerero) was chosen as the control. Both stations are in the province of Muyinga in the natural zone of Bweru in communes that are similar in size. Rugerero was chosen as a control with assistance from the SOGESTAL Kirundo-Muyinga who identified it as one of their five stations, other than Kagombé, with elevated production over the past four campaigns. A total of 153 farmers were interviewed 90 at Kagombé and 63 at Rugerero. A full copy of the report is presented in Annex 1.

### *Principal Findings*

A comparison between Rugerero and Kagombé washing stations and the farmers in their draw zones shows that coffee production was higher at Kagombé than at Rugerero; that the amplitude of year on year cyclicity was reduced at Kagombé; further a greater percentage of farmers in the Kagombé draw zone adopted best production practices for coffee and that these dynamics post date the beginning of UTZ certification activities; finally, farmers in the Kagombé draw zone increased their revenues due to certification over four successive seasons while the farmers of Rugerero did not.

### *Evolution of the Production*

The following table presents mean production data in kilograms of cherry, averaged over four years, for farmers serving the washing stations of Kagombé and Rugerero. This shows that average production was 70% higher among farmers in Kagombé's draw zone than for those in Rugerero's. There is also greater variability in farmer production at Rugerero.

Station	# years	Minimum	Maximum	Mean production (kg/cherry/farmer)	Standard Deviation
Kagombe	4	267,36	430,49	345,74	85,15
Rugerero	4	55,24	367,05	202,89	150,89

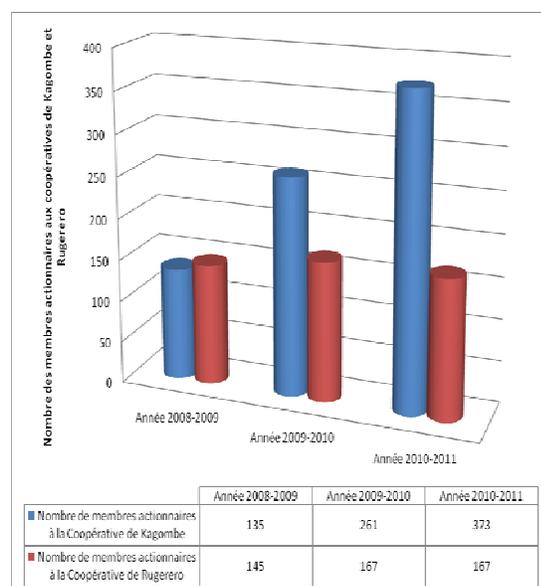
### *Price Premiums to Farmers*

In every year since UTZ certification, farmers in Kagombé have received a premium payment of at least 20 FBU/kg of cherry brought to the station over the base purchase price paid to farmers for their cherry in any given campaign. Farmers at Rugerero received only one quality premium payment in 201- when several of their day lots were purchased through direct sales agreement by Intelligentsia Coffee.

Year	Kagombé	Rugerero
2008	+20 FBU	
2009	+20 FBU	
2010	+23 FBU	+25
2011	+20 FBU	

### Evolution in the number of members in the coffee cooperatives

Since 2008, the number of members in the Kagombé coffee cooperative has increased by 176%. In Rugerero the membership increase was only 15% over this same period. At the time of certification there were actually fewer members in the Kagombé cooperative than in that of Rugerero. However, since certification the members of the Kagombé cooperative have actively been recruiting new members and assisting them in organizing themselves in production blocks. Division into blocks with leadership devolving to locally selected leaders has resulted in better information available as to the number of farmers, land area under coffee production and the average number of trees per farmer.



### Financial Impact of Certification

Analysis of benefits accruing to farmers, the Sogestal and the dry mill indicate that for each 1000 FBU invested there is a return of 1.170 FBU. Since certification began \$114,566 USD has been remitted to farmers as their “certification” premium; the SOGESTAL has received \$48,163 USD (appx. \$12,000 USD/yr) in additional revenue; and the dry mill has received a total of \$27,524 USD (or appx. \$6881 USD/yr) because of their affiliation with UTZ.

### Capacity Reinforcement for BAP clients and partners

#### Training by ADC for lead farmers

During this reporting period ADC’s facilitated 53 training sessions for lead coffee farmers. Mean participation was 25.5 pp/s of whom 32% were women. Modules receiving the greatest playing time during this quarter were agronomic maintenance of coffee plantations followed by improved coffee processing.

Modules	M	W	%W	Total	#s	#pp/s
Production of certified coffee	170	94	35,6	264	7	37,7
Agronomic maintenance of coffee plantations	404	207	33,9	611	24	25,5
Improved coffee processing techniques	243	92	27,5	335	12	27,9

Coffee productivity	21	14	40,0	35	1	35,0
Fertilization	54	24	30,8	78	8	9,8
Coffee Pricing by kg	28	3	9,7	31	1	31,0
Total	920	434	32,1	1354	53	25,5

Two new modules were added- production of certified coffee and pricing of coffee.

### Training sessions facilitated by Lead Farmers on their Hillside

During this reporting period a total of 231 sessions were facilitated by lead farmers on their hillside in four provinces –Kayanza, Kirundo, Muyinga and Ngozi. A total of six different modules were developed.

Module	M	W	% W	Total pp	#s	#pp/s	#Sub Hillside
Agronomic maintenance of coffee plantations	961	695	42,0	1656	65	25,5	52
Producing certified coffee	1110	886	44,4	1996	93	21,5	68
Fertilization	207	161	43,8	368	20	18,4	16
Improved Coffee processing	599	541	47,5	1140	45	25,3	31
Coffee pricing	166	110	39,9	276	5	55,2	5
Pest Management	38	40	51,3	78	3	26,0	1
Total	3081	2433	44,1	5514	231	23,9	173

Total participation was 5514. Average participation was 23.9 pp/session of whom 44.1% were women. Effective participation ( $X \text{ pp/s} \times \text{\#SC}$ ) was 4.135. The module that garnered the most interest during this reporting period was [producing certified coffee (93 sessions on 68 different hillside with an average participation of 21.5). This was followed by agronomic maintenance of coffee plantations (65 sessions on 52 hillside with an average participation of 25.5 /session). The session that had the highest participation was Coffee pricing (55.2 pp/s). The module that was of greatest interest to women appears to be “pest management”, followed by the module “producing certified coffee”.

### Assistance to the Private Sector

#### *Monitoring the adoption and application of new processing methods at the coffee washing stations*

Members of BAP’s coffee team were busy during this reporting period visiting washing stations in the project zone in order to assist their managers in applying improved processing techniques of interest to the specialty market. At the same time the team provided information to farmers, depulpers and dry millers about the Cup of Excellence competition planned for August in Bujumbura.

Particular attention was paid to the new cooperatively managed mini-washing stations. Farmers and cooperative leaders at these stations have worked hard to ensure adoption and proper application of the different technologies proposed by BAP to produce the highest quality coffee including selection by flotation, hygiene, use of good water, shaded pre-drying, post processing conditioning to remove the defective coffee, adoption of pyramidal drying and clean, hygienic storage of dried parchment. In

addition all mini-washing stations have systems in place to separate the coffee pulp from the grey water and are actively promoting the production and use of organic compost by their farmers.

BAP notes that there is great competition occurring between the washing stations who seek to produce fully washed coffee and the coffee collectors of washed coffee. A number of the washed coffee collectors have purchased and placed on the hillsides a number of manual depulpers. This campaign where banks were nervous about financing the fully washed sector and payment for cherry was delayed almost 4 months while negotiations continued, actors in the washed sector with deep pockets and access to financing were paying cash on the barrel head, and attracting farmers in need of money away from the washing stations.

With the advent of new coffee processing companies (depulpers) and the changing ownership of SODECO Songa from GOB hands to the private sector as well as the inauguration of WebCor's dry mill at the provincial limits between Kayanza and Ngozi, there is increased demand for the limited supply of cherry. Each enterprise needs a minimum volume of cherry or parchment to cover its operating costs and this dynamic could very well lead to a greater production of washed coffee than fully washed for a second season which will serve to reduce the overall quality of Burundi's coffee and could possibly tarnish its reputation with the specialty market.

#### *Entrepreneurship and the Coffee Cooperatives (owners/operators of washing stations)*

The period from April to June was one of intense activity for the cooperative owner/operators of washing stations who are clients/partners with BAP. All the cooperatives were preoccupied with the coffee harvest, the purchase and processing of cherry while, at the same time, seeking campaign financing from the commercial banking sector.

Our client/partner cooperatives purchased 1.371.451 kg of cherry.

Cooperative	Kg of Cherry purchased
Kazoza n'ikawa (Mpemba)	142.246
Mboneramiriyango (Kaguhu)	306.479
Dusangirijambo (Karinzi)	308.595
Ubiza Bw'lkawa (Rohororo)	599.131
Kanovera (Ntamba)	15.000
Total	1.371.451

With the exception of Ubiza Bw'lkawa who is in their 3<sup>rd</sup> year of operations, the other mini-washing stations are quite young, having begun operations only as of February 2012. In spite of their youth, these cooperatives have proven themselves good organizers and have produced coffees of specialty quality that have been appreciated by numerous international specialty buyers and roasters including Nordic Approach, Counter Culture Coffee, Coffee Shrub Roasters, Schluter, and Malongo coffee. A

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*The mini-washing station at Mpemba, managed by the Kazoza N'Ikawa cooperative commenced its cherry purchases on the 3<sup>rd</sup> of April 2012. When it closed its processing season on 13 July, they had produced a total of 74 day lots. However, by the 3<sup>rd</sup> week of May they had only received 44mT of cherry. In a meeting held with cooperative members on 20 May, the cooperative decided a) to invest time and effort in sensitizing coffee farmers to bring their cherry to the mini-washing station and b) to open up a secondary collection center for farmers whose plantations were somewhat distant from the mini-washing station and this were tempted to bring their coffee to the GOB owned, SOGESTAL managed washing station at Bwayi. This decision resulted in an increase of cherries being brought to the mini-washing station as of 22 May and by 13 July they had more than tripled their intake to end the season having purchased 142mT of cherry.*

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number of development organizations have also visited them including Adisco, INADES Formation, TWIN and Christian AID.

Several of the stations have already sold several lots of their coffee via direct sales agreements at positive differentials of 115 over New York C.

Even with this initial success it is important that these cooperatives develop new strategies to continue to improve their coffees by guaranteeing that they can procure cherry of the highest quality. Further, they will need to increase the volume of throughput in coming seasons to earn maximum benefit from their investments.

There are still risks, however, as campaign financing has been difficult to come by and the cooperatives have been receiving cherry on speculation while negotiating with the banking sector for operating capital.

Another risk, no less important for the cooperatives concerns their ability to successfully find clients and market their coffee. To this end a number of the smaller cooperative owner/operators of washing stations have created a consortium (a Union of Cooperatives) inside of CNAC to assist in selling their coffee. Each cooperative retains the right to negotiate direct sales transactions with buyers independent of the consortium, but before signing with a buyer for a particular lot or quantity of coffee, they must ensure that no other contract for the same coffee has already been signed by the consortium.

Further, because the consortium is selling the coffee in bulk and dry milling it all together, traceability back to any individual washing station for green is lost. Additionally, by milling the coffees together, selling on a volume basis and not disaggregating sales by individual

washing station except on a volume basis, the system risks penalizing producers of high quality coffee, because in diluting it in a volume of lower quality coffee, prices will be set for the quality of the blend and payment will be made to the cooperative based on the volume of coffee they presented. This is a step backward for the sector, which while it may result in sales of higher volumes of coffee will act as a disincentive for any individual station to invest in producing the highest quality coffees possible.

Two supplemental risks exist with the advent of this system. First, there must be fluidity of communication between the marketing arm of the consortium and the management committees of the different cooperatives to limit the risk that two buyers commit for the same lot of coffee at two different prices, terms and conditions. This could create unnecessary conflict within the sector and push specialty buyers away from Burundi toward other origins. A hierarchy of decision making must be defined and respected. Second, if the consortium is going to act as guarantor for campaign financing for

the its members a system must be developed to ensure that coffee committed to the consortium is actually delivered to the consortium and that it is of grade and cupping quality sufficient to meet the terms and conditions of the contract that has been negotiated.

### *Assisting clients to leverage financing*

With the second round of tenders and a large debt overhang remaining from last year's coffee season, the banking sector proved reticent to finance coffee operations this campaign. Claiming problems with liquidity and with the sector in transition the traditional actors of the banking consortium blocked campaign financing until the Central Bank intervened during the month of June. This situation could have proved fatal to the newly established mini-washing stations.

BAP stepped in and provided documentation for InterBank to show these mini washing stations were real, live enterprises engaged in processing high quality coffee with parchment on their drying tables and in their warehouses. In collaboration with the cooperatives we provided InterBank with a preliminary cash flow analysis and operations financing plan and were able to leverage operations (working capital) financing for the mini-washing stations through the DCA facility at a time when no other actors were being financed. Five cooperatives thus leveraged a total of 149.519.125 FBU (appx \$107,000 USD). Had cooperatives not shown themselves to be credible clients last season, and had the DCA not been present, BAP doubts that the bank would have looked favorably upon the cooperative's requests.

### *Assistance to SIVCA for the setting up of a Coffee Quality Center (CQC)*

After three years of negotiation, this quarter BAP and SIVCA signed an MOU for the installation and management of a CQC at the dry mill in Ngozi. SIVCA has accepted to renovate one of its buildings and BAP, through its grants mechanism will procure the necessary equipment for the center. By the end of this reporting period, the grant was finalized, a business plan was under development, the list of needed equipment was completed, and renovations were underway at the site.

### **Promotion and Marketing of Specialty Coffee**

During this reporting period three principal actions were undertaken in this area- preparation and participation at the Specialty Coffee Association of America Conference and Trade show in Portland Oregon; hosting of incoming buyers, including a grouped buyers tour, and organizing for the 2012 Burundi Cup of Excellence competition.

### *Participation at SCAA*

First BAP sponsored a number of participants to SCAA this year in order to assist them in developing new buyer relations, reinforcing old ties, resolving a series of issues with contracts of previous years and highlighting their own efforts to produce top quality coffee. This year BAP sponsored two private washing station owners- APROCO and SEGEC, one dry miller –SIVCA, and the owner/operator of the ExpressCafe roastery. Space was reserved so that each of these actors could display some product and promotional materials. At the same time, space at the stand was reserved for IWCA/Burundi to display items for sale in order to assist them in mobilizing funds for their in country initiatives.

BAP assisted SEGEC in organizing a cupping of their 2011 coffees which resulted in negotiation of a sales contract for one container of coffee with Royal Coffee importers. This is a model other enterprises should consider following in the future.

We note that the SOGESTAL Kayanza successfully negotiated a sales agreement with Café Imports for seven containers (126mT) of coffee.

Participation at SCAA was extremely important for the owner of CPC and the managing director of SIVCA. CPC was able to successfully resolve a conflict linked to coffee sales last year that implicated a US Specialty Roaster, a US specialty Importer and a Geneva based coffee broker. Resolution of this conflict has restored the faith of the specialty industry in CPC and facilitated the negotiation of a number of purchase agreements for this campaign's crop.

High points from this year's participation are:

1. Established buyers of Burundi coffee are now acclimated to the coffee sector and appropriate stakeholders within it. Buyers and producers (or their representatives) communicated directly for the purpose of arranging meetings at SCAA without involvement of BAP (ie: Crop to Cup, Counter Culture, Intelligentsia)

2. New coffee buyers were eager to meet with BAP to learn more about specialty coffee developments in Burundi and to hear about the June 2012 buyers tour. These included:

- Lexington Roasters
- Montana Coffee Traders
- Olympia Coffee Roasting
- Kickapoo Coffee
- Electric City Roasting
- Barnie's Coffee
- Verve Coffee Roasters

3. Rental of a double booth was a decided improvement from past years and is recommended for the future. However, there needs to be a coordinated and consistent theme for the Burundi booth applied at each and every trade show, and across all promotional materials. There is no uniformity for the logos, fonts and taglines associated with Burundi specialty coffee. In keeping with the successful programs at other origins (ie: Coata Rica with its "Cafe de Costa Rica" logo/\website etc. as well as its "Asociacion Cafe Finos De Costa Rica" trade organization logo website) Burundi needs to do the same for Cafe du Burundi and Intercafe respectively.

Booth layout should include a small table with chairs for informal meetings. Coffee service, with samples, need to be placed to the front of booth for service to passer bys.

4. Buyers remain concerned about the export challenges from Burundi and very interested in finding solutions to the problem.

5. IWCA women followed through with their plan to sell Burundi crafts/jewelry at SCAA. They did not have a strategic point of sale at the booth. And though in the past international chapters of IWCA have

been invited to sell products following the IWCA breakfast, it was not permitted by the Women in Coffee breakfast organizers.

One of the more important meetings that took place at SCAA occurred between members of the Burundi delegation and ACE representatives to clarify the roles and responsibilities of the different partners for the COE. The session permitted clarification of a number of important details. We note that six members of the Burundian organizing committee participated in this discussion.

#### Recommendations for future years' participation at International Trade Shows

- Burundi sends an overwhelmingly large delegation to EAFCA and SCAA each year, but continues to ignore SCAE and SCAJ. Burundi's coffee is gaining an excellent reputation in the North American market and it's now time to prospect the European and Asian markets. Small delegations should be sent to each trade show with samples and publicity materials and a small exposition booth should be manned to respond to questions from interested passersby.
- Contacts to be made and meetings need to be negotiated before arriving at the Trade Show
- The Burundian coffee sector actors need to define their objectives for attending the Trade show prior to departure; they should define an appropriate number of representatives to attend and design the stand consequently;
- A checklist of items to take to a Trade Show should be developed and distributed to actors beforehand so that key items don't get left behind at the last minute
- Organization and day to day operation of the stand should be discussed with all potential participants.
- The sector needs to continually renew its displays, DVD and brochures and target them to the particular audience and/or objective to be attained.

#### Incoming Buyers and the Buyer's Tour

Eleven incoming buyers were hosted by BAP during this reporting period. Individual buyers included Morten Wenersgaard of Nordic Approach in Norway, Sarah Kluth of Intelligentsia Coffee, Tim Hill of Counter Culture Coffee in the US, Jean Pierre Le Blanc of Malongo Coffee in France, three buyers from Canada, three from California, and Caleb Heaney from Small Batch Roasting in Australia. Visits were organized to a number of washing stations and dry mills and cupping sessions at ARFIC labs in Ngozi, Gitega and Bujumbura were facilitated. At the end of each cupping, samples of interest to the different buyers/roasters and importers were remitted to them.

Timing of the Buyer's Tour in mid-June allowed coffee buyers to view wet mill processing in action. For the first time ever buyers were able to watch the sequence of steps as farmers bring their coffee cherry to a station. At Mpemba daily bags of cherry were first put in flotation tanks, then weighed, and finally credited to individual farmer's accounts and evidenced by written receipts.

Buyers are eager to cup as many coffee samples as provided and to convene afterwards to share their comments and offer scores.

Coffee tours are designed for the purpose of introducing buyers to a range of coffees available. Through the cuppings they are able to taste the coffees they like best. In order to facilitate early sales of coffee and reduce expenses associated with sample transmittals after the tour, properly labeled 200 gr.

samples of cupped coffee should be prepared for buyers to take with them back to cup with colleagues in their company roasteries.

The number of noteworthy coffee washing stations capable of producing exemplary coffee grows each year. In an effort to maximize the limited time available for buyers to see a variety of Burundi coffee washing stations, box lunches should be arranged whenever possible beforehand.

Waste water treatment at coffee washing stations is of utmost concern to most specialty buyers and a major factor in their decisions to buy coffee. Increasing numbers of Burundi coffee washing stations have addressed effluent control separation of solids from waste water and some have coupled this with remediation of the water before it re-enters the groundwater system. As producers observe buyer's response to these developments and see their commitments to purchase coffee from washing stations that have made this investment, it is hoped that more coffee washing stations will follow this lead.

Across the board specialty coffee buyers have made clear their interest in seeing a Burundi micro mill to dry mill coffee micro lots separately. The obvious place for such a mill is at SIVCA. There is space within their current location in Ngozi for a separate line. And with their optical sorter already in place it is the most desirable location in Burundi for a specialty coffee mill.

Of utmost concern to buyers are the continuing challenges affecting Burundi coffee exports. They are looking to BAP and InterCafe to give them guidance and to assist them in identifying the most optimum method for efficient and timely export of specialty coffees.

Buyers are beginning to clue into the benefits of making coffee purchases as early as possible after the harvest. Coffee that is milled and ready for shipment in July avoids inevitable bottlenecks that occur later in the season when the bulk of specialty coffee and Cup of Excellence coffees need to be milled.

Several buyers negotiated purchase contracts immediately after cupping this year's harvest. CounterCulture has purchased a split container of coffees from CPC and the cooperative Kazoza N'Ikawa which manages the Mpemba mini-washing station. Morten Wenersgaard has negotiated purchase contracts for coffee from Buziraguihindwa, CPC and the mini-washing station Maruri de Dusangirijambo. Purchase prices vary between \$2.70 and \$2.90 per pound of green while the New York C price at the time of negotiation was oscillating between \$1.55 and \$1.75 per pound. What is more interesting is that the differential with New York C is appx \$1.15 per pound and that each of these stations are partners with BAP.

### **Preparing for the Cup of Excellence (COE)**

This quarter was dedicated to the preparation of lots to enter the pre-selection phase of the competition. Samples needed to be taken and lots from submitting washing stations needed to be moved to the secure storage facility, negotiated at the BUDECA dry mill in Gitega. All lots needed to be coded and receipted.

An information/training session was held prior to this action with all the owners and managers of the different washing stations. The technical protocol and submission calendar were explained and distributed. In addition to the calendar, the technical protocol for the COE set forth the responsibilities of the different parties.

Members of IWCA/Burundi have mobilized to participate actively in the competition. They have prepared 36 lots derived from eight different washing stations in four different provinces.

During this reporting period a contract was signed between the Alliance for Coffee Excellence (ACE) and InterCafe for the organization of the competition. We note that last year this contract was between BAP and ACE. Thus while we continue to provide technical support to Burundi's coffee sector we are also transferring responsibility for certain actions and setting up our departure through the facilitation of new partnering agreements.

### Updating the Coffee Database

With assistance of Dan Clay from Michigan State University the coffee team worked to revise, update and correct the database of washing stations developed during 2011. This work consisted of:

- Correcting errors and adding technical detail
- Converting tendered station coding from GOB to private
- Preparing individual fact sheets for each CWS
- Defining indicators that will be used to assess the impact the BAP project has had on the adoption of new technologies at CWS.

We note that, at the time of this report the GOB continues to own and contract management of 53% of all coffee washing stations. The private sector's footprint though has risen from 24% ownership of CWS to 47%.

### Coffee Certification

Flo-cert (Fair Trade) has responded positively to our dossier submission for three cooperative owners of mini-washing stations. An initial audit for inspection and, potentially, certification is planned before the end of Q4.

### Communications on Coffee Privatization

One panel discussion was organized during this reporting period. The theme was "Management of a Coffee campaign in Burundi in the transition from liberalization to privatization". Over 40 participants including farmers, representatives of GOB institutions, coffee sector actors, financial institutions and NGO participated.

Discussion focused on fixing of coffee prices and financing of the campaign. Confusion reigns among the farmers as to how coffee is priced and how privatization impacts the pricing of the coffee. CNAC attempted to explain the variability of the New York C(ommodity) market and how prices fluctuate on a daily, if not an hourly basis; but also claimed there was a lack of transparency in how the base price for the purchase of cherry is determined which is related to the different taxes and charges taken by ARFIC and InterCafe. Coffee Sector actors (depulpers and dry millers) expressed their interest to invest with InterCafe to improve extension services to farmers and improve coffee productivity. At the same time this group expressed their concern that a dissonance exists between the percent of taxes being allocated to certain services and the value added by these same services to the sector. InterCafe, ARFIC

and the superintendant of SCEP suggested there is a need to establish a price stabilization fund for coffee in order to support prices paid to farmers when the market takes a downturn.

On the question of campaign financing, none of the bank representatives present chose to explain the difficulties and constraints they are working under so questions related to this issue were not responded to satisfactorily.

## Conclusion

The 3<sup>rd</sup> quarter of this project year was one of intense activity for the coffee sector because it was harvest season, wet and dry milling commenced and there were a number of incoming specialty buyers, importers and roasters. The initial results from our second year of productivity demonstrations are encouraging and merit a large dissemination to farmers around the country. The first campaign's results from the mini-washing stations are extremely encouraging and the international community is quite interested in seeing this experience expanded. Finally, preparations for this year's Cup of Excellence competition are well underway. There is great interest among the different actors in the sector and the national coordinating committee continues to impress with their organization for the event.

## Principal Activities for Q4

- Organization of a workshop to discuss second year results of demonstration plots, trending and BAP's coffee certification activities
- Organization of a workshop to share lessons learned and document impacts of the mini-washing station's first season of operations, as well as to reinforce the management capacity of the cooperative owner/managers of these stations
- Organize a training session for agents from the DPAE Kirundo in best agronomic practices for coffee production
- The Cup of Excellence 2012 Competition will be held
- Conception, production and dissemination of extension bulletins for best practices for coffee production and processing
- Monitoring the sales and export of the 2012 coffee

# Coffee Success Stories

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## 1) An Extraordinary Farmer produces 16 kg of Cherry per Tree in Kayanza Province



Georges Nyamibara is a coffee farmer who lives on the Manga hillside in Kabarore Commune of Kayanza. After two years partnering with BAP, his coffee plantation has registered the highest productivity ever recorded in Burundi.

George purchased his plantation of 250 coffee trees a number of years ago. The average age of his trees is 10 years. His first three year's harvest yielded only an average of 2kg of cherry/tree. Given this he decided to stump his plantation hoping the regenerated trees would produce at

least 4 kg/tree. At the time he stumped the plantation he was applying urea to the coffee, and following the traditional agronomic protocols for his coffee.

Three years after stumping his trees he became a demonstration farmer, partnering with BAP to highlight different fertilization regimens for coffee. The first year's results were incredible with the mixed organic compost and NPK fertilizer resulting in a production of 9 kg/tree, in his first harvest after stumping. This second year of the trials the same treatment yielded 16 kg of cherry/tree- a phenomena he has trouble explaining in a zone where the average production per tree rarely attains 3kg.

On his hillside, most farmers use compost on their vegetable crops, apply DAP to their beans but basically ignore their coffee plantations. After his results over the past two seasons George is convinced that a motivated coffee farmer who invests in his plantation and adopts best production practices for coffee should be able to support their family uniquely on the revenues from the coffee if the price paid per kilogram of cherry remains interesting. Given the results already obtained, George is ready to fertilize half his plantation (1000 trees) with a mixture of organic compost with NPK. To do so he will need to produce sufficient quantities of compost on a regular basis or figure out how to purchase some if he comes up short. It won't be difficult, because, having seen the results, he knows what sort of results he can expect from his investment.

George continues on to say that if he looks at the effort he invested the time and the resources and compares these to the value of what he was able to produce; he's convinced that all other coffee farmers could adopt these technologies. The new investment costs are only linked to producing sufficient quantities of compost and procuring NPK fertilizer, otherwise the other practices are those which are routine for a true coffee farmer. Already on his hillside there are a number of other farmers who, having witnessed his production, have started to emulate his farming practices.

George's costs for the treatment, applied to 75 trees is given below:

#### Costs

Item	Cost in FBU		Cumulative Costs over 2 years
	2011	2012	
Manure, purchase and transport costs	15.000	15.500	30.500
NPK fertilizer	5250	3500	8750
Labor costs to apply fertilizer	3000	4200	7200
Mulching (mulch, transport and labor)	22.500	30.000	52.500
Weeding	4000	4000	8000
Pruning	1500	1500	3000
Thinning	1600	1600	3200
Pest Control	3000	3000	6000
Harvest (harvest , flotation, transport)	25.300	58.170	83.470
<b>TOTAL</b>	<b>81.150</b>	<b>121.470</b>	<b>202 620</b>

Synthesis for 75 trees, treatment NPK + Organic Compost

Exercise	Production in Kg	Price pd per kg/cherry	Value of Harvest	Expenses in FBU	Profit generated frbu
<b>2011</b>	506	630	318.780	81.150	237.630
<b>2012</b>	969,5	480	465.360	121.470	343.890
<b>Total</b>	1475,5		784.140	202.620	<b>581.520</b>

The total production over two campaigns from this sole treatment was 1475.5 kg. On expenses of 202.620, George earned 581.520 FBU, 187% profitability. This equals a mean for the two exercises of 7.754 FBU/tree.

## 2) Cooperative innovators rescue their coffee season in Giheta



Coffee farmers who are members of the Mboneramiryango cooperative of Kaguhu in Giheta commune of the Gitega Province began managing their own mini-washing station using a Penagos UB-1500 Eco-pulper as of February 2012.

When the equipment supplier identified under their grant with BAP to supply material for the drying tables experienced delays in importing the chicken wire, used to cover the drying tables, the cooperative found itself receiving coffee without sufficient tables for

drying the parchment. The farmers resolved the problem by building their own tables from wood and covering them with thin bamboo strips attached using a weave of sisal. This workable solution was less costly than the imported goods, available locally, and allowed the cooperative to continue purchasing cherry, drying the parchment on fermium laid over their new bamboo drying tables.

Additionally, when their eco-pulper breaks down, this cooperative does not hesitate to call the technician trained by BAP and Penagos, to pay his transport fees from Kayanza, the spare parts and his labor in order to keep their washing station operational. We note to that BAP clients, managing for the first campaign, their mini-washing stations are freely sharing information on lessons learned, tricks they use to properly calibrate the eco-pulper for cherry of different sizes and the modifications they have made to render the processing more efficient- from the reception of the cherry, its conditioning, record keeping, supplemental fermentation, pre-drying, sorting for defects, drying, bagging the parchment and differentiating the day lots in the warehouse.

# Dairy Value Chain

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## **Introduction**

Dairy activities during this reporting period centered on support to the Milk Collection Centers, particularly Rutegama who are in their start up phase, training of lead farmers as community veterinary agents, training of cheese manufacturers for improved quality and diversification of their product lines. Further, a major effort was made to collect and analyze outstanding data on improved forage production.

## Deliverables Matrix

Indicators	Results accomplished Q3, PY 5	Cumulative
<b>Start improved fodder cultivation/enclosed production training activities to build capacity of new livestock groups</b>		
MOUs signed between BAP and 6 new livestock groups with approval from Provincial DPAs covering 140 new farmers		Not yet
20 new Lead Farmer training agents trained	21 leaders trained	21 leaders trained
3 new Communal Agro-Technicians Trained in improved livestock techniques		22 new communal agro-technicians trained (9 in Ngozi, 6 in Makamba, 7 in Muyinga)
3 of the 6 Groups have enacted Livestock Development Plans initiated by the end of the year for improved production and associated economic activities	3 groups from Matana (Bururi) have designed their plan	6 groups have plans, three of these six have begun implementing activities contained in these plans
4 of the 6 groups operating with appropriate statutes and governance mechanisms		8 group operate with statutes and governance mechanisms
12 PO leaders/members participating in study tour to Kenya		Not yet
<b>Sign agreements with new groups to support improved productive practices</b>		
6 agreements with POs signed		Not yet
6 improved fodder trial plots/nurseries established 20 enclosed stables constructed with participation of groups membres		6 fodder trials plots established
At least 20 Kg of improved fodder seed and 10,000 cuttings of penisetum grass are produced by farmer multipliers in each of the 6 Groups/Group members in year 3. At least 10 chop boxes and a similar number of manual hay balers disseminated	36kg of legumes fodder seeds, 126.000 cuttings planted in Matana by associations	Improved fodder seed and cuttings of penisetum have been distributed to farmer multipliers and the production will be available in quarter 3. 5 chopping box and 5 bailing cases disseminated. Three associations in the commune of Matana in Bururi received assistance for planting of 36 kg of 4 improved fodder varieties in addition to 126.000 cuttings of pennisetum
<b>Build on past progress with groups assisted in years 2 and 3 to increase production volumes and introduce key new fodder crops</b>		
30 Kg of fodder seed and 20,000 cuttings of hybrid Napier grass from ISABU are produced by farmer multipliers and distributed to group members in Bukéyé and Rutegama	47 kg of legume seeds and 1.011.000 napier cuttings since the program started	47 kg of legume seeds and 1.011.000 napier cuttings since the program started
At least 4 agreements made to begin transitioning dairy ADCs extension agents/communak agro-technicians to Pos		Not yet
<b>Implement a small farmer dairy productivity system</b>		
500 "fiches de production" with milk production figures are distributed and being filled in by members in BAP assisted Pos		500 "fiches de production" with milk production figures distributed and filled in by members
<b>Begin a program of Artificial Insemination (AI) to improve the genetic characteristic of small farmer dairy herd</b>		
10 of Communal Agro-Technicians trained and equipped with AI Kits		15 communal Agro-Technicians trained but not yet equipped
300 farmers in milk draw zones adjacent to MCC receiving 500 AIs during year		42 farmers received AI
A target rate of success of 45% is achieved		A rate of success of 72.5% achieved
<b>Implement a vaccination plan on a cost-share basis with POs around Milk Collection Centers</b>		
A minimum of 2 agreements signed with Pos in Bukeye to set up a system of veterinary services		Not yet
At least 2,000 animals receive vaccinations		Not yet
<b>Undertake a training program directed at Communal Agro-Technicians</b>		
50 communal agrotechnicians trained in bovine health and dairy hygiene and equipped with basic veterinary kits		22 communal agrotechnicians trained
<b>Construct Milk Collection Centers (MCCs) for BAP grantees in Bukéyé and Rutegama. Bukéyé</b>		
2 Grants for MCCs approved		Already done (MCC Bukeye and MCC Rutegama)
2 MCCs equipped and ready to receive milk deliveries		Two MCC equipped. Bukéyé is Operational. Rutegama became operational as of 16 April 2012
<b>Support the establishment of other MCCs by farmer groups and private investors</b>		
Assessment for 2 new MCCs		1
Milk supply projections, animal census for 2 new MCCs		Not yet
2 new MCCs enter operations		Not yet
<b>MCC Grantees receive capacity building in both technical and managerial requirements for operating MCCs</b>		
Farmer households trained in hygienic milk handling and transport		Done
Required staff/personnel hired and trained in MCCs operations (Bukeye and Rutegama)		Completed for MCC Bukéyé and Rutegama
MCC personnel study visit to Rwanda		Not yet
<b>MCCs receive help in establishing linkages to dairy buyers</b>		
Model contract completed		Done
Supply contract(s) negotiated with processors /retailers		MCC Rutegama is linked to IAB processor and Ngozi farmer groups to Nyabisabo processor
Contract performance monitored /disputes arbitrated		Done
<b>Development of training program for Burundian processors</b>		
Workshop on cold chain management and EAC hygiene standards for processors		Workshop held and 20 persons participated
Development of Dairy specific training modules in French on proper hygiene principles and sampling/monitoring for EAC health standards		Not yet
Individualized training based on needs assessment for each operational dairy processor and their staff		8 dairy processors received individualized consulting services; 4 processors received training on the production of thermized long shelf life yoghurt products
<b>Help the national veterinary laboratory initiate a program of milk quality testing</b>		
Study tour to RARDA (Rwandan Animal Resources Development Authority)		Not yet
Assistance in Standard laboratory procedure development, use of milk testing equipment and interpretation of results		Training already organized, the equipment not delivered
A workshop will be facilitated with dairy processors, NVL staff and BBN personnel to discuss EAC health and hygiene requirements for fresh milk products, roles and responsibilities of each entity and the challenges to achieving compliance		Done
<b>Support artisanal cheese production</b>		
At least 1 BAP Activity Grant for improved cheese production	Not yet	Not yet
1 business plans produced	St Ferdinand business plan designed	Done
2 new cheese products are developed and test marketed	Feta an Mozzarella are made and tested in Bujumbura	Done
Packaging and branding are improved	Not yet	Not yet

## Activities accomplished during the Reporting Period

### Capacity Reinforcement for Producer Associations

A total of 532 farmers of whom 290 (54.5%) were women participated in 24 training sessions targeting dairy farmers and their associations. Twelve different themes were developed. Average participation was 22.17pp/s. The most frequently offered themes involved diversification of forage crops and their use in erosion control, followed by advantages of a modern milk collection center and guided visits to forage demonstration plots. Sessions registering the greatest overall participation were MCC operations (52 pp/s), Effects of Pennisetum on milk production (38 pp/s); and evaluation of the artificial insemination campaign (27 pp/s). Women's participation was greatest at sessions on measuring animal weight (85.71%); followed by Best Practices for raising dairy cattle (83.33%), and the participative evaluation of MCC Bukéyé's operations (80%).

Capacity Reinforcement for Dairy Associations - Q3							
	Theme	Men	Women	Total	Sessions	Xpp/s	% Women
1	Best Practices for raising dairy cattle	1	5	6	1	6.00	83.33%
2	Measuring animal weight using a tape measure	1	6	7	1	7.00	85.71%
3	Advantages of a modern milk collection center	47	36	83	4	20.75	43.37%
4	MCC Operations	36	16	52	1	52.00	30.77%
5	Participative Evaluation of Forage Crop Productivity	34	16	50	2	25.00	32.00%
6	Hay baling	7	4	11	1	11.00	36.36%
7	Stable construction for dairy cattle	25	20	45	1	45.00	44.44%
8	Participative Evaluation of MCC Bukéyé	5	20	25	1	25.00	80.00%
9	Evaluation of the Artificial Insemination campaign	6	21	27	1	27.00	77.78%
10	Diversification of Forage crops and their use in erosion control	44	71	115	7	16.43	61.74%
11	Effects of Pennisetum on milk production	8	30	38	1	38.00	78.95%
12	Guided Visit to Forage demonstration fields	28	45	73	3	24.33	61.64%
	<b>TOTAL</b>	<b>242</b>	<b>290</b>	<b>532</b>	<b>24</b>	<b>22.17</b>	<b>54.51%</b>

Fifteen of the training sessions occurred in the province of Muramvya, while 9 sessions, entirely focused on forages were facilitated in Bururi province.

### Training of new Lead Farmer, Community Veterinary Agents

A training session was held for 21 lead farmers from Kayanza, Ngozi and Bururi provinces and the commune of Rutegama in Muramvya province who had been identified by their associations. In total 12 men and 9 women (43%) were trained in the basic of large animal preventive care including disease and parasite identification and treatment, animal nutrition, reproduction, and stabling, the management of a community veterinary pharmacy as well as practical experience on animal hygiene, milk quality, castration and dehorning, and assistance to cattle during birthing. Each leader left the session with a basic kit including syringes, a thermometer, a stethoscope, protective clothing and boots permitting them to perform simple procedures on their hillsides.

### Development plans of Dairy Associations

This reporting period three new associations from Bururi presented a consolidated dairy sector local development plan bring to 6 the number of associations with these plans in the project zone. Activities undertaken that are included in the three plans previously adopted include learning how to identify

contours on hillsides and in order to plant anti-erosive bands of forage crops in association with others on the hillsides.

## Improvement and Diversification of Improved Forage Crops

### Pennisetum

In order to promote rapid dissemination and diversification of improved forages in the draw zones contiguous to the Milk Collection Centers, BAP provided technical assistance, seed stock and nursery materials to volunteer multipliers who were members of client dairy associations. One fifth of all Pennisetum produced was destined for farmer to farmer dissemination, while 10% of leguminous forage grains produced were committed to the same action.

In Bukéyé, 22 farmers fifteen of whom (68%) were women received 5.545 stalks of Pennisetum. At harvest these produced 39.930 stalks, enough to produce 399.300 producible cuttings, enough to cover 6 ha if planted as a pure crop. These 22 farmers distributed cuttings to an additional 139 dairy farmers of whom 119 (85%) were women. These farmers came from 4 different hillsides.

In Rutegama, 14 farmers, including 3 women (21.4% received 1889 stalks for planting. At harvest these stalks had produced 492.500 cuttings, enough to cover 7.4 ha if planted as a pure crop. These initial farmers disseminated cuttings to an additional 416 farmers of whom 198 (47.6%) were women.

In Ngozi 15 farmers of whom 5 (33.3%) are women produced 19.930 stalks, enough to produce an additional 199.300 cuttings, enough to cover 2.97 additional hectares if planted as a pure crop. Instead of disseminating these cuttings to other members of their collective, these farmers used the cuttings to expand their own land areas under forage production, deferring until after the next rainy season any planned dissemination.

### Evolution of Pennisetum distributed to dairy farmers for multiplication and dissemination

Province	Stalks received	Stalks Produced	Land area planted initially (ha)	Actual land area under production (ha)	% increase in land area	Projected forage production – Dec 2012 (mT of dry matter)
Ngozi	1.789	19.930	0,3	3,3	1000	99 mT
Bukeye	5.545	39.930	0,8	6,8	750	204 mT
Rutegama	4.780	49.250	0,7	8,1	1057	243 mT
Matana	42.000	-	6,3	6,3		189 mT
Total	54.114	109.110 stalks or the equivalent of de 1.091.100 cuttings	8.1	24.5	202.5	735 mT of dry matter equivalent to 2.940mT of green forage

If the projected forage production holds BAP expects to produce approximately 65.333 daily forage rations, enough to feed 179 improved race dairy cattle weighing appx 450 kg each for a calendar year.

Experimental cuttings from Rutegama in April 2012 showed the Pennisetum producing 40 kg of green forage/m<sup>2</sup>.

### Calliandra and Leucaena (Leguminous Forage)

Since 2010 there has been a 61.9% increase in the number of forage legume shrubs planted by client farmers in Muramvya province. Of this increase 45% occurred in the commune of Rutegama and 55% in the commune of Bukéyé. Sixty-four percent of new plantings are of Leucaena.

Commune	2010 planting from nursery		Total planting 2010	Multiplication from seed in 2012		Total planting 2012	Total # leguminous shrubs under production @ 30 June 2012
	Calliandra	Leucaena		Calliandra	Leucaena		
Rutegama	8.758	5.146	13.904	+1.650	+5.030	+6.680	20.584
Bukéyé	3570	6500	10.070	+3.600	+4.560	+8160	18.230
Total	12.328	11.646	23.974	+5.250	+9.590	+14.840	38.814

Data obtained from cutting trials performed by farmers under the supervision of BAP ADC suggest that it is possible to receive 1.5 to 2.5 kg/green forage per cutting and per tree and that these species can be harvested a minimum of twice a year. Taking an average of 2 kg of green forage/tree, harvested twice a year we can project an annual green biomass production of 155.26 mT. At a feed ration of 3 kg/cow/day, which our demonstrations show is enough to raise milk production by 1 liter/cow/day, production from this leguminous forage alone could feed 142 improved race cows for a year.

### Forage Multiplication and Dissemination

	Bukéyé			Rutegama n=21 of whom 33.3% women			Total		
	Kg received	Kg disseminated	# Beneficiaries	Kg received	Kg disseminated	# Beneficiaries	Kg received	Kg disseminated	# Beneficiaries
Mucuna	0.1	10	50				0.1	10	50
Lablab	0.5	8	50	0.1	10	20	0.6	18	70
Vesce				0.1	3	12	0.1	3	12
Soja				0.25	2	4	0.25	2	4
Avoine				0.25	2	8	0.25	2	8
Pois Cajan				0.25	2	4	0.25	2	4
Stylosanthese				1	4	16	1	4	16
Desmodium				1	2	2	1	2	2
Total	0.6	18	100	2.95	25	66	3.55	43	166

The preceding table shows other forage trials BAP has undertaken in Muramvya province. From 3.5 kg of seed introduced, a total of 43 kg has been produced and disseminated to a total of 166 farmers.

In Matana Commune of Bururi province, BAP disseminated 126.000 cuttings of banana grass, 12 kg of Desmodium, 12 kg of Mucuna and 12 kg of Macrotyloma to 61 farmers in three different associations of whom 20 (32.8%) were women.

The farm Biranyuranwa received 15 kg of barley from the program in 2009, enough to cultivate 1000m<sup>2</sup>. Today after a number of multiplications he has 1.5 ha of pure barley under production in Matana. The

barley given to the dairy association in Rutegama unfortunately never produced, farmers have suggested that the seed had lost its productive vigor but it is more likely that the micro-climactic environmental conditions of the zone were unfavorable for its production.

The Bukéyé farm has invested heavily in the production of alfalfa. After a number of multiplications they now have 2 ha under production on land purchased on the Gihanga hillside.

### **Genetic Improvement using Artificial Insemination**

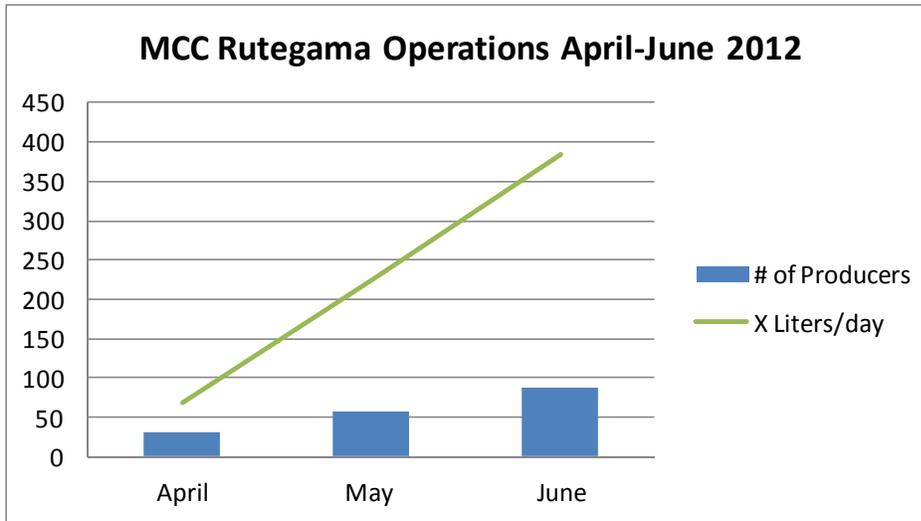
Of the 87 cows that were artificially inseminated in November 2011, 20 (23%) had pregnancies that did not take. Twelve of these 20 belonged to rural farmers. We are pleased to report that during the current reporting period 29 new calves were born, 21 to rural farmers. However we must note that eight farmers sold their pregnant cows to others in return for building material and a cash payment to assist them in finishing their homes and surviving the dry period before the 2012 B harvest.

### **Milk Collection Centers**

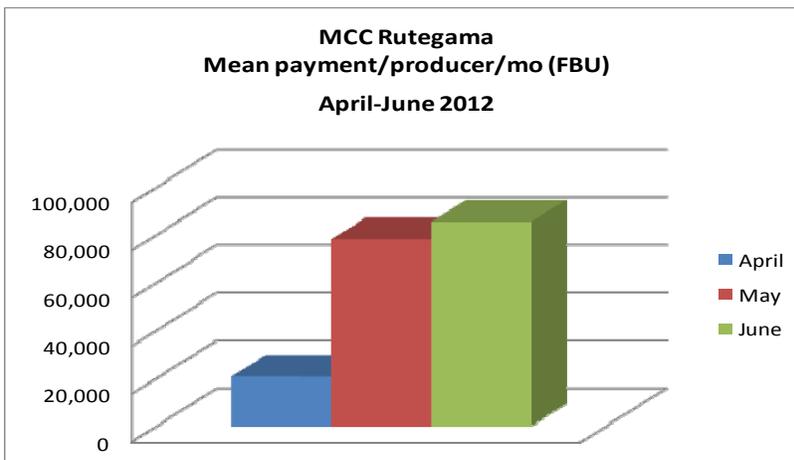
#### **Rutigama**

The Milk Collection Center in Rutegama opened for operations on 16 April 2012. The first day it collected only 31 liters of milk. By June, the average daily intake had risen to 420 liters. Once the center was open for business the MCC management committee mobilized itself to visit member farmers on Rutegama's different hillsides in order to inform them of the terms and conditions of the MCC and to encourage them to bring their milk to the center. Once the center was operational there was a movement by the traditional milk collectors to undercut this new competitor. First, they raised their purchase price 100 FBU from 550 F/ltr to 650 F/ltr. Then they started giving advances to farmers to "lock in" their supply of milk over a longer time frame. Based on the historical production of a farmer, they could negotiate an advance of up to 7 months (the typical lactating period for a cow) payment a phenomenon that interested a great number of farmers who were looking for investment capital.

The center began using their cooling tank once the daily take reached 400 liters. They are still, however, confronted by a constraint because the IAB dairy with which they have a supply contract refuses to send their tanker truck to Rutegama to collect the milk unless there is a minimum of 1500 liters of milk available. Because the center has not reached this level of intake to date, they are forced to pay for shipping costs by common carrier to Bujumbura. This system is not only costly for the MCC but it is a risky endeavor given that cold chain integrity is no longer assured and quality of the milk suffers.



As demonstrated by the figure above, the number of farmers bringing milk to the MCC has increased each month, as has the number of liters taken in per month. Mean rejection rate at milk intake is 2.4%, somewhat higher than expected but this should drop as farmers become accustomed to the testing procedures and begin disaggregating their milk by quality. There was an uptick in the amount of milk rejected during June due to an outbreak of mastitis. Once detected, it was quickly treated and the percent rejection rate immediately dropped. The following figure shows the trending of mean monthly payments to farmers bringing milk to the MCC. In total 12.643.475 FBU was paid to dairy farmers over the period. The average payment to a farmer who brought an average production of milk to the center in each of the three months is calculated to be 183.572 FBU.



## Bukéyé

During this quarter a total of 93,573.5 liters of milk was received at the MCC, however only 13% or 12,835.5 liters was furnished by dairy farmers in the draw zone. The rest was supplied by the commercial farm. Over the period the number of farmers supplying the MCC decreased slightly then stabilized, but the average number of liters furnished per farmer per day declined in each month, even though in June the MCC raised the per liter price they were paying for milk from 550 to 600 FBU. On average the farmers brought 3.08 liters of milk to the farm per day. During the quarter 7.524.375 FBU (appx \$5375) was injected into the draw zone. This works out to an average of 122.956/farmer for the quarter.

Month	Origin	Liters collected	Price Pd/ltr (FBU)	Total Value	# of dairy farmers	Mean production/farmer/day (liters)	X collected/day
April	Rural Farmers	4,462.0	550	2,454,100	61	3.68	148.7
	Commercial Farm	24,420.0					
<b>Total April</b>		<b>28,882.0</b>					
May	Rural Farmers	4,476.5	550	2,462,075	58	3.02	144.4
	Commercial Farm	26,045.0					
<b>Total May</b>		<b>30,521.5</b>					
June	Rural Farmers	3,897.0	600	2,338,200	59	2.54	129.9
	Commercial Farm	30,273.0					
<b>Total June</b>		<b>34,170.0</b>					
<b>Total Rural Farmers</b>		<b>12,835.5</b>		<b>7,254,375</b>		<b>3.08</b>	
<b>Quarterly Total</b>		<b>93,573.5</b>					

% Rural Dairy Farmers	13.72%
% Commercial Farm	86.28%

The decrease in milk volume brought to the MCC by rural dairy farmers is likely due to the fact that at the beginning of the dry season, the traditional milk collectors begin to offer positive incentives to farmers to “lock in” their supply. Increasing the purchase price and advancing money against future delivery of milk are two strategies often used. We note that the MCC raised its purchase price during the month of June, perhaps in recognition of this dynamic.

During this reporting period, women dairy farmers contributed 30% of the milk volume brought to the MCC. Further, on average farmers provided milk to the center 45.6 days over the reporting period, meaning they bring in milk only 50% of the time, or once every two days.

In comparing results from the two MCC we note that during this reporting period:

- Rutegama had more farmers bringing milk to their center than Bukéyé (88 vs 60)
- Rutegama injected more money into the rural hillsides (12.643.475 FBU vs 7.254.375 FBU)
- Losses were greater at the MCC Rutegama than at Bukéyé (482 l vs 123 liters)

## Assistance to Commercial Dairies

### Nyabisabo

With BAP grant financing Nyabisabo contracted with a specialized Kenyan Dairy consulting firm Pintech to render operational their extended shelf life milk production line. The modifications were finished and dairy staff was trained in the procedures. The ESL milk sacs bought in China can be used for the production of ESL but storage with these sacs is limited to 1 week because the sacs cannot withstand the higher temperatures necessary to attain a longer shelf life. Because issues with electrical supply continue to be problematic for milk points of sale, Nyabisabo is seeking to source sacs that are capable of longer shelf life from South Africa.

### Bernard Biranyuranwa

M. Biranyuranwa has recently purchased a large farm in the South of Bururi at Rwira near the Source of the Nile and plans to move the majority of his dairy operations here over the coming months. He is in negotiation with NIKOS of Bulgaria for the purchase of the necessary equipment. NIKOS, through the Bulgarian government has a leveraged line of financing they are making available to Burundians willing to commit to purchasing direct from the factory.

## Assistance in setting up a sales point for veterinary products

This reporting period BAP approved a grant to the Burundi Bio Agricultural Community (BBAC) to develop a veterinary input boutique in the commune of Muramvya. The grant will be used to purchase an initial stock of medicines and feed supplements.

## Capacity Reinforcement for the Improvement and Diversification of Cheese making

A training session was organized at the St.Ferdinand Cheese making operation in Ngozi during this reporting period. Nine men from four different structures (Fromagerie St. Ferdinand, Laiterie Ntazimba, Assn Inyambo-Kirundo and the farm cooperative Hastafarm) attended the week long session. The objectives of the session were to:

- Improve the quality of cheese being manufactured
- Learn to produce new cheeses-mozzarella and feta
- Learn how to make fresh cream and butter
- And improve production practices for yoghurt

In addition to this session, the consultant did a needs assessment of the St Ferdinand Cheese operation and developed a list of equipment needed to upgrade their operations. In addition to this equipment he also identified a series of training sessions that are necessary. Most of these are centered around proper hygiene and adoption of best manufacturing practices.

## Constraints

- Transport of milk from the collection centers to the urban centers. Both IAB and Ntazimba dairies have purchased refrigerated tanker trucks to safely transport milk from the collection centers to the dairies, ensuring cold chain integrity remains intact. However both dairies require a minimum of 1500 liters of milk available at source before they will invest in sending the truck to the collection centers. Because the MCC have yet to achieve this amount in any 48 hr period, they are faced with transporting the milk by common carrier to the dairies. This raises the cost of operations of the MCC and increases the risk of loss during transport
- There is heavy competition between the MCC and the traditional collectors. The traditional collectors have raised their purchase prices by 100 fbu/liter and have begun offering lump sum payments for all milk a farmer produces during a cow's lactating period (up to 7 months) in advance of receiving the milk. Farmers are attracted to this offer because it gives them a significant lump sum that they can invest. The MCC do not have sufficient liquidity to match this offer and are thus constrained in their efforts to attract farmers to the center in the short and medium term.
- Most dairy farmers in the MCC draw zones only milk their cows once a day. This represents a significant departure from the initial assumptions which could very well negatively impact the profitability of the MCC. Further, in other countries of the sub-region milking occurs at least twice a day (morning and afternoon milk on a 12 hr cycle) while certain commercial operations are moving toward a 3x daily milking cycle. The single milking decreases the productive potential of improved race variety cattle and translates to almost a 40% decrease in potential milk production which also negatively impacts the ability of dairy to significantly improve farmer livelihoods in the rural communes.
- Lack of a local dairy input supplier is a chronic problem impeding development of the sector. All inputs and equipment must be procured and imported to Burundi. Spare parts are not available and there are significant time delays linked with sourcing, pricing, payment, and transport.

## Principal Activities for Q4

- Capacity reinforcement for MCC management and staff
- Dissemination of AI equipment and the beginning of true AI operations in the draw zones of the MCC
- Translation and reproduction of dairy technical (extension bulletins)
- Hosting of a National workshop on lessons learned and impacts derived from BAP's dairy program

# Horticulture

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## Introduction

This quarterly report presents the activities achieved during the period from April to June 2012. As the project close-out date approaches, the Horticulture Value Chain (HVC) team has prioritized a list of actions that will enable the completion of field activities and the respective data collection and analysis. As a result, greater focus on performance monitoring of grant recipients and demonstration plots (demo plots) has occupied the greater portion of the team's time during this quarter. Capacity building and knowledge-transfer activities via farmer field days have also been accomplished. Among those receiving training this quarter, the HVC team is satisfied to have completed an entrepreneurship training cycle with University of Ngozi (UNG) students through the BBIN to design their own private sector ventures.

For nearly two years, the HVC team has been disseminating knowledge and techniques to improve productivity, to reduce post-harvest losses and to provide small-scale farmers with tools to transform subsistence production of fruits and vegetables into better planned, business oriented farming practices. The demonstration plots have provided hands on, eye-opening experiences to participating farmers as they compare their traditional cropping practices to improved technologies and farming practices in a stepwise fashion. BAP has capitalized on this experience by developing a manual as a farmer field guide in Kirundi titled "From Field to Market." The initial reviews of this publication motivated BAP to reproduce and disseminate the field guide among several partner organizations, the MINAGRIE extension service and lead farmers throughout the country. As a result, over 3,600 copies have been distributed during this quarter.

The work BAP has achieved in horticulture has enabled many farmer and farmer groups to address production bottlenecks on the supply side despite major challenges posed by unpredictable rainfall patterns. Our work on the demand side continued as well. Two display prototypes were developed to assist HVC in introducing this technology to consumer end users as a method to protect the quality and safety of the product in the marketplace. Attractive, off the ground displays exhibiting quality product that has been sorted and graded prior to transport from the farm should assist in disaggregating the consumer market and result in better prices to farmers.

This report contains detailed explanations of these activities with a wealth of quantitative and qualitative reports developed from the data collected in all provinces of the country. Table 1 offers a summary of indicators and cumulative results accomplished to date, followed by an account of results under each major activity. Finally, an annex with success stories documented this quarter is offered at the end.

## Deliverables Matrix (as of 30 June 2012)

Indicators (Target for 30 Sept 2012)	Results Accomplished this quarter	Cumulative Results vs Workplan Targets
<b>Increasing productivity through improved agronomic practices</b>		
Number of grants signed (30 small grants)		29
Number of demonstration plots (demoplots) established (45)		47
New farmers trained in modern agronomic techniques. (1000)	1085 (62.2% women) from 64 associations in 11 different provinces	5718
Volume of vegetables produced increase (demoplots)	200 mT	281.79 mT
Revenue from vegetables increase	30 million GBU	50.31 million FBU
Reinvestment increase by 2011C demoplots owners (20 Assns)		22 associations and 9 individual farmers
<b>Improving Marketability of Products Introducing Best Practices</b>		
Farmer groups/individuals trained on the use of the wooden box to protect their products (50)	8 associations in 1 province	132 farmers in 16 associations
Farmers trained on post harvest handling (400)	211 (50.3% women) from 47 associations in 4 provinces	503 farmers trained on post harvest handling and conservation of whom 276 (54.9%) were women
Farmers trained on GAPs and GMPs. (600)		1.133 farmers trained
Nursery Business Plans Developed (30)		24
Simple irrigation systems are established using models of treadle technology developed by KickStart in Kenya (3)		20 treadle pumps and one hand pump are installed and operational
<b>Improving Marketability of Products Introducing Best Practices</b>		
DPAE Staff trained in Horticulture Best Practices (1000)	28 (10% women) in 2 provinces	334 in 5 provinces (Kayanza, Muramvya and Ngozi, Kirundo and Makamba)
DPAE rural monitors taking responsibility for horticulture demo plots. (10)		31 cadre of the DPAE, including 6 Rural monitors have participated in this activity
Best agronomic practices replicated with lead farmers		
Field Days facilitated for farmers with media coverage	3 Open field days. 54 farmers including 30 women (70%) attended in 3 provinces- Muramvya, Bururi and Makamba	11 field days but only 3 radio broadcasts. Total participation 439 of whom 259 (59%) are women
Number of students trained on entrepreneurship (10)		12 (7 from Fac Agro and 5 from Fac Econ at the U Ngozi)
Number of Extension bulletins in Kirundi and French produced and distributed		176 demonstration field guides distributed in 17 provinces.
Number of exhibitions attended		

## Main project activities

### Activity 1: Follow up on demonstration (demo) plots

During this reporting period, the HVC team completed the collection of final harvest data related to the demonstration plots established in the early 2012A season and monitored the evolution of all demo plots with scheduled production during the 2012B season.

#### 2012A Demo plots

During this reporting period data collection from the 2012A Season was completed. Most of the missing data from the previous quarterly report was due to the long production cycle of green pepper planted in the early and mid-part of December 2011. The data analysis suggests that climatic conditions and phytosanitary issues affected the output of most demo plots. Regardless, production levels were satisfactory with the exception of the Tugirisuku demo plot in the Muyinga province which failed completely. The reasons for this outcome are discussed later in this report.

Early quantitative results of the production triggered a number of questions back to the demo plot managers concerning lower-than-expected productivity. Climatic conditions reported by farmers have been blamed. For instance, delayed rainfall and warmer-than-usual temperatures from December 2011 through January 2012 resulted in stunted plant growth and made it difficult to keep a healthy crop. This situation highlighted the need for irrigation systems in these areas.

Other areas with higher altitude and higher relative humidity experienced severe fungal attacks. This was particularly true in Ngozi where the Remeshamahoro association attempted to produce tomatoes where only 500 kg of tomatoes were produced and the improved technology side of the plot yielded only 6 mT/ha. Most demo plot managers however, appear to have learned the basics of preventive measures against these crop diseases. Farmers confirmed that the recommended planting distance helped fight fungal attack due to better plant aeration, but some fields still could not be saved. Failure of the green pepper field managed by Abasangirakivi group in Kirundo was one of the cases documented. Additionally, low performance of the onion field grown by Duhuze group in Ngozi was registered and attributed to fungal attacks. Aggregate field reports show that the onion crop performed the least well when compared to other crops during this, the 2012 A, season. Beside the phytosanitary issues outlined above, farmers also spoke of poor seed quality as one of the reasons that led to this outcome. Two varieties of onion tested in Ngozi (Bombay Red and Red Creole) were affected by lack of sufficient water throughout the production cycle which translated to low yields, poor leaf development and a high rate of plants with underdeveloped bulbs. These varieties were selected primarily on the basis of their color, due to expressed consumer preference in small rural market and previous experience in other areas of Burundi. However, the field performance of these two varieties proved to be unacceptable to farmers who may not be motivated to try it again in these regions.

Overall 12.2 MT of vegetables have been produced on these demoplots. The revenues from the sales of this production are reported to be 1,902,400Fbu. For technical reasons, only data from eight demoplots was analyzed, as two demoplots did not achieve production levels worth pooling with the rest of demoplot performance analysis. One additional demo plot, planted in April 2012 to green beans, did

not germinate due to poor seed quality. In this case, the recommendation was to plant amaranth whose harvest is expected for late July. Another demo plot located in Bujumbura Rural was also planted to amaranth. Due to the planting dates, results from these two fields will be documented in the next report. Please refer to the agronomic calendar in annex \_\_\_ to see the expected harvest dates for these and other demo plots. The results of the data analysis are offered below.

**Table 2: Comparative yields from season 2011C to 2012A by treatment and control**

Crop	Province	Group	T0(kg)	T1(kg)	Extra field	Total (kg)	YieldT0	YieldT1
Tomatoes	<b>Muyinga</b>	Abagwizanyanya	130	554	-	814	2.6T/ha	11T/ha
	<b>Ngozi</b>	Remeshamahoro	200	300	-	500	4T/ha	6T/ha
Mean yield 2012 A							3T/ha	8.5T/ha
Mean yield 2011C							19.6T/ha	32.5T/ha
Cabbage	<b>Ngozi</b>	Dufashanye	1804	1846	-	3650	36T/ha	36.9T/ha
	<b>Kayanza</b>	MIGI	1000	1300	-	2300	20T/ha	26T/ha
	<b>Muyinga</b>	Mudahemuka	1564	2400	-	3964	31T/ha	48T/ha
Mean yield 2012A							29T/ha	37T/ha
Mean yield 2011C							38T/ha	39,8T/ha
Greenpepper	<b>Kirundo</b>	Kamenyiyobweze	73	33	35	141	1.4T/ha	0.6T/ha
		Twijukiribikorwa	273	269	84	626	5.4T/ha	5.38T/ha
Mean yield 2012A							3.4T/ha	3.0T/ha
Mean yield 2011C							N/A-	N/A-
Onion	Ngozi	Duhuze	109	106	-	215	2.1T/ha	2.1T/ha
Mean yield 2012A							2.1T/ha	2.1T/ha
Mean yield 2011C							6.6T/ha	9.12T/ha

The data collected has shown a significant increase in production as a result of best practices ranging from 50 to 426% in tomatoes and 46 to 50% in cabbage on two of the three trials made on this crop. No significant increase was reported for onion and on one trial on cabbage, the increase was recorded at only around 2%. However, the performance across all demo plots remains lower than the 2011C cropping season. To illustrate this, data from the treatment on tomatoes shows a decrease of the yield

obtained on the treatment has gone from an average of 32.5 mT/ha in 2011 C to 8.5 mT/ha during 2012 A (a decrease of 73%). For cabbage it went from 39.8 mT/ha to 38 mT/ha (a decrease of 4.8%). In the case of onions, the decrease is reported from 9.12 mT/ha in 2011C to 2.1 mT/ha during 2012 A (76.8%).

In the trial conducted on tomatoes with the Abagwizanyanya association of Muyinga the improved practices plot T1 outperformed the traditional control (T0) by 424 kg (8.4 mT/ha) or 326%. The main reason for this result is attributed to the use of raised beds and trellising that made possible increased blooming and fruit setting levels.

In Ngozi, the association Remesha mahoro's tomato demonstration field yielded only 4 mT/ha on T0 and 6 mT/ha on T1. The major factor affecting production was a severe disease attack for which the fungicide applied did not prove to be an effective control measure. Nonetheless, the treatment (T1) achieved a production increase of 50% over the control (T0). This illustrated to farmers that application of improved agronomic practices resulted in the plants being more resistant to the fungal disease.

For cabbage, the choice of sites, the organizational maturity and commitment of the group members were important factors in achieving production results as the cabbage were not affected by climatic conditions recorded during the season. The yields decreased by 7% on T1 plots when compared to results obtained during 2011 C while the yield decrease for traditional controls between the two seasons was 23.7%. During 2012 A the demonstration plots under improved practices averaged yields of 37 mT/ha compared to the control which averaged 29 mT/ha this season, an increase of 27.6%. This is still acceptable if we consider the fate of other cultures such as potatoes which registered a decrease of 45% this season vs previous season's production due to poor rainfall distribution.

The individual performances within the cabbage producing associations showed an increase of 55% between T0 and T1 in MIGI group of Kayanza and 53,45% in MUDAHEMUKA group of Muyinga where the yield achieved in the improved practice treatment was 48 mT/ha. It was evident during field visits that headset was superior in raised beds than in neighboring fields and the control. Farmers identified plant spacing and the use of raised beds as the main factors leading to these improved yields. Better planting distance (spatial distribution) helped maximize the use of planting area in raised beds which in turn favored a more efficient fertilization. Questions on the level of nitrogen application in the treatment were asked as the potential factor for better results on the treatment. However, it was clarified that both DAP (Di-Ammonium Phosphate) and Urea were applied during the production cycle to both treatment and control plots at the same rate per area.

For the trial conducted with Dufashanye group of Ngozi, no significant difference between the treatment and the control was recorded. T1 performed only 2% better than T0. However, the yield obtained this season was 10% lower compared to the previous 2011C. In this particular case, farmers reported heavy rain during the last month of the season as the cause for this decrease. Most farmers harvested earlier than normal for fear of losing the crop to excessively wet (humid) conditions.

Contrary to the HVC team's expectations, trials on green pepper in Kirundo performed poorly and did not showcase the best practices. Yields were very low and, in one instance (Abasangirakivi) there was complete crop failure. Unfavorable climatic conditions and, in two cases, disease contributed to the

failure of these demonstration plots to show results, though informal surveys also suggested that internal turmoil related to the management of the associations was also contributed to this dynamic. It may be that green pepper should not be the crop of choice in Kirundo because of environmental factors- soils, rainfall; agronomic factors- sensitivity to disease, perishability, likeliness to be crushed in transport from the field to market; and that the choice of cooperating farmers (the social factor) needs to be considered more carefully in the future.

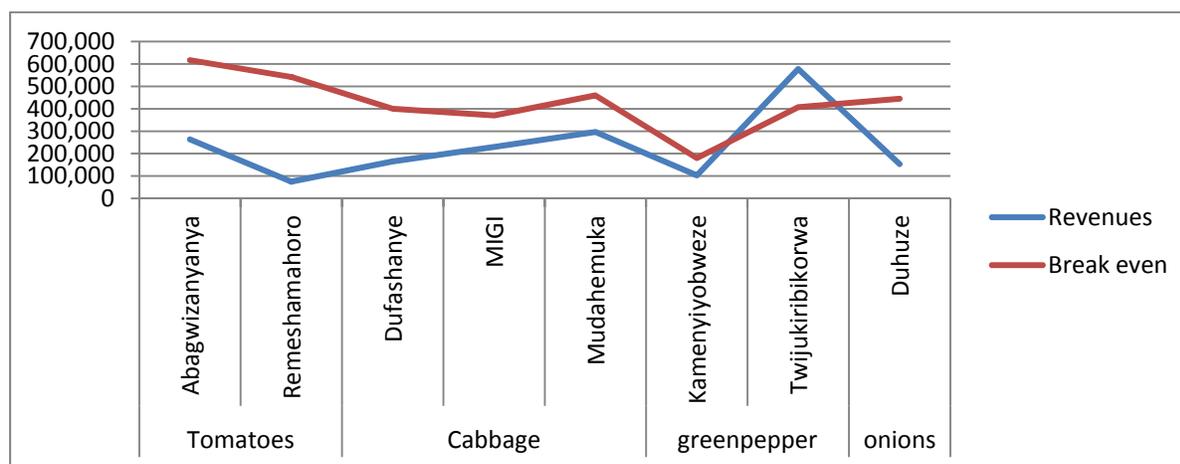


Figure 1. Cost-Benefit analysis

### *Revenues and a cost-benefit analysis of the production season*

In performing a cost-benefit analysis for production on demonstration plots during 2012 A, the calculated break-even the value at which the sum of all costs including labor equal the revenue generated through sales of the production. Reaching break-even point means there is no net loss and no net gain to the farmer. The graph above shows that only one of eight demo plots, for Twijukiribikorwa, managed to achieve revenue above the break-even point. This group located in Kirundo and managed to generate a profit of 170,000Fbu. This group will not need to source supplementary funds to cover all the input charges that are required to reinvest in the same crop production for the next season, as the average charges cost is around 269,000Fbu to produce green pepper on 0,10ha.

On the positive side, sales figured compared were reported by farmers that did not keep records on production diverted for self-consumption. When asked about this consumption farmers estimation was only 10-15% of harvest. This is quite conservative for a country where post-harvest “losses” frequently attain 40% of production. Finally, when asked about their experience, farmers expressed satisfaction with the new techniques learned and the level of output. Even though they do not control market prices farmers could see that productivity was remarkably higher on plots using improved practices than for the same crops grown under traditional practices. This season was characterized by unfavorable climatic conditions and contrasting low-end prices per Kg at 600Fbu for onion, 100Fbu for cabbage, and 800Fbu for green pepper. In summary, maximizing the full potential of the best horticultural practices treatment was difficult this season, but the learning process to increase productivity was appreciated by participating client farmers.

## 2012B Demo plots

The 2012B season demo plots were implemented from the late March to early April 2012. Data for this season is not available because solanaceas (tomatoes, green pepper and egg plant) take a 120-day cycle and allium spp. (onions and garlic) around 140-day cycle. Historically, the 2012B season has run from February to June, but changes in rain patterns shifted the season a month later this year. As a result, we expect production and sales data for this season to be collected from late July and, for certain regions that planted 45 days later than the rest, information will continue to flow until October. Overall, the demo plots have entered the production and harvesting stages. Nevertheless, the activities reported from these fields consisted of procurement of inputs, training on various topics related to best agricultural practices such as nursery production and, preventive pest control and fertilization as well as different follow up visits that were paid by the ADCs or the technical coordinator. Production data has been projected based on the development of these early vegetative stages as shown in Table 2.

**Table 3: 2012B demo plots expected date of harvest by province and crop**

Province	Crop	Farmer group	Sowing date	Planting date	Harvest	End of harvest
BURURI	onion	Terimbere	April 13	June 15	September 22	September 25
		Tugwizimboga	April 13	July 02	September 21	September 25
		Abaganashaka	April 12	July 03	September 20	September 25
MAKAMBA	cabbage	TUTEDU	April 5	May 20	July 29	August 10
		Dukoretwizeye	April 4	May 20	July 28	August 12
BUBANZA	tomatoes	ECOFA	April 12	May 12	August 06	August 20
MWARO	Toa mToes	Kaze Dukore	April 12	May 12	August 17	September 17
BUJA R	amaranth	Nkenyererakivi	April 16	June 16	-july 17	August 17
		Mpuzabarimyi	April 16	June 17	Julu 17	August 17
		Tuduzikivi	April 12	May 10	July 10	August 10
NGOZI	Cabbage	Twiyungunganye	March 26	May 27	July 26	August 26
		Garukirinka	March 27	May 27	July 26	August 26
		Urunani	March 27	May 28	July 26	August 26

## Activity 2: Monitoring implementation of approved grants for the 2012B season

During this reporting period, the main activities consisted of assessing procurement of inputs and equipment especially for harvest, seeking quotes for transportation services of inputs and harvest, technical training on various topics related to best agricultural practices, follow up and evaluation visits, data collection from the production, revenue and expense reports after sales of the 2012A season.

To date, 44 of 57 grantees have started to harvest. Eleven have vegetables that are still green but ripening while two fields failed to reach production at all. The failure for the two groups located in Ngozi province was due to internal management and technical issues. For Twiyungunganye which had projected to manage 1ha of tomatoes, the ADC reported that the president of the group did not reveal the group was receiving a grant from BAP and managed all funds by himself. The other members

discovered this later and so decided to confront him. Meanwhile, the field was abandoned. In the case of the group Tugwizumwimbu, the ADC of the zone reported that there the transplanting and pest management were delayed which led to crop failure.

Quantitative performance results are shown below pointing out to the following trends.

- Associations with grants achieved production calculated at 197,9 MT of vegetables from which 186.3 tons have been already sold for 28.5million Fbu. From this tonnage, 11.6 mT are calculated to have been used for family consumption.

**Table 4: Performance of horticultural association grantees for season 2012 B**

Province	Cabbage (Kg)	Tomatoes (kg)	Onions (kg)	Green pepper (kg)	Eggplants (kg)	Garlic (kg)	Carrots (kg)	Amaranth (kg)	Total (kg)
Bururi	6 050	----	-	-	-	-	-	-	6 050
Makamba	720	-	-	-	650	-	-	100	1 470
Gitega	7 441	-	-	-	-	72	-	-	7 513
Muramvya	59 450	-	-	-	-	-	-	-	59 450
Mwaro	8 883	491	481	-	-	-	400	-	10 255
Kayanza	23386	4 113	4 300	428	-	-	-	-	32 227
Kirundo	30 679	-	-	-	100	-	-	-	30 779
Muyinga	-	-	-	-	-	-	-	1 041	1 041
Ngozi	5 576	-	-	-	150	-	-	-	5 726
Bubanza	-	-	2 701	140	-	-	-	-	2 841
Buja R	21300	15700	3 020	-	560	-	-	-	40 580
<b>TOTAL</b>	<b>163 485</b>	<b>20304</b>	<b>10 502</b>	<b>568</b>	<b>1 460</b>	<b>72</b>	<b>400</b>	<b>1 141</b>	<b>197 932</b>

- Approximate production is 163.4 mT of cabbage, 20 mT of tomatoes, 0.5 mT of green pepper, 1.4 mT of eggplants, 10.5 mT of onions, 400 kg of carrots, 72 kg of garlic and 1.1 mT of amaranth.
- Of the 22 ha that were planned for production in season 2012B, the real land area planted reached 14.9 ha, (73.11 % of planned). The reason for this reduction is the need to locate

production fields nearer to water sources as the season has been characterized by a disrupted rainfall pattern. This led many associations to convert from planting one large field to planting on several small plots. The rest of the planned area will be planted during the season 2012C.

- With only 40% of harvest data available at the end of this reporting period, indications are that associations will achieve only 47.90% of the projected overall production. It is too early to estimate the aggregate performance of the associations for this season, because finalized data is only available for 25 of the association, primarily those that produced cabbage and tomatoes. When harvest is completed for the other 32 associations, Bap will report final actual production figures vs projected. We expect this data to be available by the end of the fiscal year.

#### Achievement of production volumes

**Table 5. Groups that achieved 100% or more of production goals during 2012B**

Group	Province	Crop	Production Achieved	Projected Production	Yield	%
Majambere	Muramvya	cabbage	10 MT	5.9 MT	42 mT/ha	180
Dufashanye	Muramvya	cabbage	11 MT	7.1 MT	45 mT/ha	160
Sangwe	Muramvya	cabbage	10 MT	7 MT	41 mT/ha	145
Dushirehamwe	Mwaro	cabbage	8.8 MT	5.9 MT	35 mT/ha	149
TUII	Kayanza	cabbage	5.7 MT	3 MT	44 mT/ha	186
Dufatanemunda	Kayanza	cabbage	7.5 MT	2.3 MT	75 mT/ha	319
Tugwizumwimbu	Kayanza	cabbage	3.9 MT	3.5 MT	26.1 mT/ha	109
Twizerane	Kayanza	cabbage	4.3 MT	3.5 MT	29.3 mT/ha	122
Kazoza keza	Gitega	cabbage	5.4 MT	4.7 MT	27.2 mT/ha	114
Kazemumahoro	Ngozi	cabbage	2.8 MT	1.6 MT	41 mT/ha	173
Abakenyezi	Buja Rural	Tomatoes	15.7 MT	5.2 MT	31.4 mT/ha	301
Dusasirikawa	Kayanza	Tomatoes	4.1 MT	1.2 MT	34.4 mT/ha	329

Among the twelve groups that have already achieved their production goals, we can safely report that the yield performance is directly correlated to the adoption of improved technologies and best practices.

For instance, for cabbage, six associations (Majambere, Dufashanye, Sangwe, TUII, Dufatanemunda and Kazemumahoro) in three different provinces (Muramvya, Kayanza and Ngozi) have achieved yields ranging from 41 mT/ha to 75 mT/ha with an average of 48 mT/ha. These surpass achievements on demonstration plots in previous seasons. The average yield gained on fields grown using improved horticultural practices was 39.8 mT/ha during 2011C and 37 mT/ha during 2012A. Thus the improved technologies implemented at these five associations during 2012 B resulted in average yield increases of 20.6% and 29.7% respectively.

Among this season's results we have four groups that achieved their production goals (Kazozza keza in Gitega, Dushirehamwe in Mwaro, Tugwizumwimbu and Twizerane in Kayanza) even though their yields were lower than the average from the demonstration plot controls of 2011C season (38 mT/ha). Farmers explain that there have been a problem of rotten cabbage heads as there have been rainfall during the last days of the harvest but that production was damaged after the group have already achieved their goals otherwise the production would have been more important and yields higher.

For tomatoes, the good performance is associated to the fact that the farmer groups applied the improved techniques taught by BAP. The technologies introduced were a combination of trellising, optimal planting distances, raised beds, fractioned and scheduled fertilization schedules, and the implementation of Integrated Pest Management (IPM) techniques against aphids and mildew. Two groups, Abakenyezi Twisununure and Dusasirikawa, achieved yields of 31 mT/ha and 34 mT/ha respectively. The average yield achieved by farmer groups who tended their fields with traditional practices was 19 mT/ha during the season of 2011C, whereas the improved techniques resulted in 32 mT/ha. This is an impressive increase of 41%.

**Table 6. Groups that completed harvest but didn't achieve 100% of their goals**

Group	Province	Crop	Production Achieved	Projected Production	Yield	%
Tugwanyinzara	Gitega	Cabbage	2 MT	2.3 MT	20 mT/ha	84
Abasangirakivi	Bururi	Cabbage	1.9 MT	5.9 MT	9.5 mT/ha	32
Murima Wacu	Bururi	Cabbage	4.1 MT	9.5 MT	10.3 mT/ha	43
abasangirajambo	Muramvya	Cabbage	18 MT	28 MT	24 mT/ha	63
Twitezimberell	Muramvya	Cabbage	8 MT	8.3 MT	22 mT/ha	96
Tuzamurane	Mwaro	Carrots	0.4 MT	3.8 MT	4 mT/ha	10
Najenje	Kayanza	Onions	3.5 MT	14.2 MT	7 mT/ha	24
Dusozanye	Ngozi	Cabbage	2.6 MT	3.3 MT	19.2 mT/ha	80
DTU	Bubanza	Onions	0.5 MT	5.7 MT	2.7 mT/ha	9.5
ECOFA	Bubanza	Onions	1.2 MT	5.7 MT	6.3 mT/ha	21
TB	Bubanza	Onions	0.9 MT	5.7 MT	4.5 mT/ha	16
Twisungibihe	Buja R	Onions	1.3 mT	4.2 MT	6.9 mT/ha	32
Girumwete	Buja R	Onions	1.6 MT	8.5 MT	8.16 mT/ha	19

**Tugwanyinzara:** The production is 84% of what was projected. The farmer group reported that there have been rotten heads due to heavy rain during the last days of head maturation, this resulted in a yield lower than the mean production obtained under best practices during the 2011C demoplots (20 mT/ha versus 39.8 mT/ha, a 99% overall decline).

**Abasangirakivi:** The production is 32% of projected. The farmer association blamed their poor production on the choice of field site. The field has been established on a newly cultivated land in proximity with eucalyptus which negatively affected the soil fertility. The yield achieved is 315.8% below the results achieved with agronomic best practices in 2011 C(9.5 mT/ha versus 39.5 mT/ha )

**Murimawacu:** The production achieved by this association is only 43% of its projection. The farmer group reported a bad choice of site (infertile plot) and a problem occurred during marketing as one wholesaler who agreed to meet the group to buy the production canceled his appointment, a big quantity of the production over ripened and was lost in the field. The yield (10 mT/ha) is 298% below the average best practice results achieved during 2011 C.

**Abasangirajambo:** The group achieved 63% of its goal. The yield is 36.8%below the average yield of the traditional control of season 2011C but is satisfactory (24 mT/ha). The farmer group reported that it couldn't achieve the projected acreage. From the 1ha projected for plantation, the association only planted 0,75ha , which equals a 25% decrease in the land area under production.

**Twitezimbere II:** The production achieved by this association is 96% of what they projected. The difference is not significant. However, the yield is 79.5% lower by than the average production achieved under improved planting methods during 2011C (22 mT/ha versus 39.5 mT/ha). The farmer group reported that there had been flooding in the marshland where the field was instituted and the production was negatively affected. Despite this, the achievement is satisfactory.

**Tuzamurane:** The group achieved only 10% of its original goal of producing 3.8 MT of carrots. The group reported that there had been seed germination problems and the bad seedbed preparation due to poor choice of manure.

**Najenje:** The group achieved only 1/4 of its original goal of producing 14.2 mT of onions. The yield is 7 mT/ha whereas the production achieved using traditional practices (control) for 2011C was 9.18 mT/ha. This is a seasonal decrease of 23.7%. The average yield projected by the group was too high and difficult to reach.

**Dusozanye:** The group achieved 80% of its goal of producing 3.3 mT of Cabbage. The yield obtained is 19.2 mT/ha (104% lower than the yield of 39.5 mT/ha obtained under best practices in our demonstration plots during 2011 C). The farmer group reported that the cause of the bad performance was the drought during the head set that led to heads that weighted less than 1kg.

**DTU:** The group achieved 9.5% of its goal. The production had been stolen despite the fact that two guards were paid to be in the field.

**TB:** The group achieved 16% of its original goal. The production had been stolen in the field.

**ECOFA:** The group achieved 21% of its original goal of producing 5.7 MT of onions. The farmer group reported that there have been floods during the ripening phase that resulted in rotten bulbs. The yield achieved is 6.3 mT/ha whereas the average for the season 2011C was 9.12 mT/ha. This is a 44.8% season on season reduction on plots where best practices were applied.

**Twisunge ibihe:** The group achieved 32% of its purpose of producing 4.2 MT of onions. The yield is 6.9 mT/ha which is 32% less than yields achieved under similar practices in 2011 C. The farmer group blamed the drought recorded during the bulb growing period.

**Girumwete:** The group achieved 19% of its original goal of producing 8.5 MT of onions. The yield obtained is 8.16 mT/ha which is 11.8% less than yields achieved under similar practices in 2011 C. The causes of the low performance is the drought and the fact that the group used only 66% of its planned planting area. The association plans to plant the remaining 34% of the land area during 2012C.

The average yield achieved by groups that completed the harvest has been calculated. The means by crop and by province have been calculated to give the trend of potential yields farmers may expect in similar production conditions.

**Table 7: Average yield (mT/ha) obtained by horticulture crops grown using best practices in some provinces**

Province	Cabbage		Onions		Tomatoes		Carrot
	2012B Grants	2011 C T1 Demo Plot	2012B Grants	2011C T1 Demo Plot	2012B grants	2011C T1Demo Plot	
Bururi	9,9 mT/ha	N/A	-				-
Gitega	23,6 mT/ha	77,8T/ha	-	11,51 mT/ha	-		-
Makamba				6mT/ha			
Muramvya	34,8 mT/ha	N/A	-	7.64 mT/ha	-		-
Mwaro	35 mT/ha	32T/ha	-		-		4 mT/ha
Kayanza	43,6 mT/ha	30T/ha	7 mT/ha		34,4 mT/ha		-
Ngozi	19,23 mT/ha	34T/ha	-		-		-
Bubanza	-		4,5 mT/ha		-		-
Bujumbura	-	-	7,53T/ha		31,4 mT/ha	21 mT/ha	-
<b>Overall mean yield/season</b>	27.68 mT/ha	47.7mT/ha	6.34mT/ha	8.38mT/ha	32.9mT/ha		

As seen in the table above, cabbage has shown the best performance in the province of Kayanza with a yield of 43,6T/ha during 2012 B(the average estimated by seed seller is 45-56T/ha). Tomatoes performed well in Kayanza and Bujumbura Rural ranging from 31 mT/ha to 34.4 mT/ha respectively. The yield for carrots and onions are significantly lower than the average estimated by seed seller (10 mT/ha and 15 mT/ha respectively). BAP client associations only averaged 6.34 mT of onions/ha and 4mT/ha of carrots in 2012 B. Onion yields in 2011 C averaged 8.38 mT/ha. In carrots the reason behind this negative variance can be attributed to a lower level of production by farmer groups who experienced

germination rates as low as 45%. In onions, production goals were largely affected by field theft, a phenomenon reported by several groups.

### Achievement of revenues projected

**Table 8. Groups that achieved 100% or more of their projected revenues**

Group	Province	Crop	Revenues obtained	Revenues projected	Mean sales price projected	Sale price obtained	% of revenues achieved
Dufashanye	Muramvya	cabbage	912	855	120	80	106
Dushirehamwe	Mwaro	cabbage	1 722	1 187	200	200	145
Dusasirikawa	Kayanza	tomatoes	1237	873	700	340	141

**Table 9. Analysis of success factor for each of the target groups**

Group(s)	Analysis of success factors during Season 2012B
Dufashanye	The group achieved 106% of its projected revenues. Even if the sales price was lower than projected (from 120 to 80 Fbu per Kg), the good production obtained by the group (increase of 60% than projection) made possible the achievement more than the revenues projected.
Dushirehamwe:	The group achieved 145% of its original target in sales. This because the group took advantage of its good production (increase of 49% from its original target) and the good price given at the market. The projected a price was the same as the sales price.
Dusasirikawa	The group also took the opportunity to increase its production (it produced 329% of what had been projected). The average price was lower than the projected (340 Fbu versus 700) by 51.4% and the volume of product deducted for family consumption did not affect the performance because of higher production volumes. Indeed, the group registered an increase of 41.7% over its original target in sales revenues.

**Table 10. Groups that achieved less than 100% of their original goals**

Group	Province	Crop	Revenues obtained (x000Fbu)	Revenues projected (x000Fbu)	sales price projected Fbu	Sale price obtained Fbu	% of revenue achieved
Abasangirakivi	Bururi	Cabbage	380	1187	200	200	32
Murima wacu	Bururi	cabbage	830	1900	200	200	43

Kazoza keza	Gitega	cabbage	451	950	200	100	47
Turwanyinza	Gitega	cabbage	120	475	200	100	25
Twitezimberell	Muramvya	cabbage	600	1662	200	70	36
Abasangirajambo	Muramvya	cabbage	1 260	3135	110	70	40
Majambere	Muramvya	cabbage	642	1187	200	80	54
Sangwe	Muramvya	cabbage	668	855	120	80	78
Tuzamurane	Mwaro	cabbage	3 040	120	800	350	4
Najenje	Kayanza	tomatoes	1136	7125	500	1000	15
TUII	Kayanza	cabbage	333	771	250	60	43
Dufatanemunda	Kayanza	cabbage	380	593	250	340	64
Tugwizumwimbu	Kayanza	cabbage	386	890	250	250	43
Twizerane	Kayanza	cabbage	216	2137	600	600	10
Dusozanye	Ngozi	cabbage	184	498	150	100	36
Kazemumahoro	Ngozi	cabbage	139	332	200	100	41
DTU	Bubanza	Onions	542	3 420	600	1000	15
ECOFA	Bubanza	Onions	1 618	3 420	600	1000	47
TB	Bubanza	Onions	1 096	3420	600	1200	32
Twisunge ibihe	Buja R	Onions	1 388	2 565	600	1000	54
Girumwete	Buja R	Onions	1632	5 130	600	1000	31
Abakenyezi Tw.	Buja R	Tomatoes	3 170	3 640	700	500	87

**Table 11. Analysis of failure factors in the least performing groups**

Group (s)	Analysis of failure factors during the Season 2012B
Absangirakivi and Murima wacu	In Bururi, the two groups Abasangirakivi and Murima Wacu achieved respectively 32 and 43% of their revenue targets. This has been the consequence of the low production obtained on these fields. The prices were however in line with projections (200F per kg).
Kazoza Keza and Turwanyinzara	These groups located in Gitega achieved 43 and 47% of their targets. The principal reasons are that the sales prices were lower than projected and the production did not reach the volume projected. Also a certain amount of the production was diverted for family consumption.

Sangwe, Abasangiraja-mbo, Majambere and Twitezimbere II	<p>In Muramvya, the group Sangwe achieved only 78% of its projections, while Majambere 54%, Abasangirajambo 40% and Twitezimbere II 36%. The main reason for these results was lower than projected sales prices. Data shows the following price differences between obtained and projected.</p> <ul style="list-style-type: none"> <li>- Twitezimbere II decrease of 65% from 200Fbu/kg to 70Fbu/ kg.</li> <li>- Abasangirajambo decrease of 36% from 110Fbu per kg to 70 Fbu per kg)</li> <li>- Majambere decrease of 60% from 200Fbu to 80Fbu per kg</li> <li>- Sangwe decrease of 33% from 120Fbu to 80Fbu per kg.</li> </ul> <p>Despite these results, farmer groups are satisfied as the revenues obtained are planned to be used to strengthen their production system by addressing the high cost of certain inputs. For example, Sangwe and Dufashanye will acquire cows to have a secure and low-cost source of manure.</p>
Tuzamurane	<p>In Mwaro, the group Tuzamurane only achieved 10% of its planned revenues. Two major constraints were faced by these groups: low seed germination for carrots and market prices that were 56% lower than expected from 800Fbu to 350Fbu.</p>
Kazemumahore and Dusozyane	<p>In Ngozi the group Kazemumahoro achieved 41% of its planned revenues while Dusozyane achieved 36%. The main constraint for Kazemumahoro was sales price which was 50% lower than projected (100Fbu/kg instead of 200Fbu/kg). For Dusozyane prices decreased by 33% from 150Fbu to 100Fbu. A positive aspect for this group is that nearly 40% of the production is still in the field and is being harvested to satisfying family consumption needs. Only 1692kg (62%) has been sold. The farmer group reported that the junior seminary of Mureke, a community of nuns, were the principle buyers targeted by the association, but they only purchased one metric ton so far arguing that they are also procuring their food from other sources.</p>
DTU, ECOFA and TB	<p>Three groups produced onions in Gihanga commune of Bubanza, Their revenues were lower than projected with ECOFA attaining only 47% of its projections, TB only 32% and BTU only 15%. While floods affected ECOFA, field robberies were a problem reported for DTU and TB. Despite this outcome, these groups were favored by higher prices than normal which has motivated them to produce onions again. The projected price, based on historic data for this season, was 600Fbu/kg, but the actual price was 1200Fbu/kg. At this level, each metric ton of onions sold resulted in at least 1million francs in revenue.</p>

<p>Twisungibihe, Girumwete and Abakenyezi Twisununure</p>	<p>In Bujumbura province, Twisungibihe and Girumwete produced onions and achieved sales revenues of 54% for and 31% respectively compared to the projected revenue level. Farmers from Twisungibihe noted that their low yields were due a high rate of plants with no bulbs (32% of projected). For Girumwete, production was lower than projected as the final field planted for 2012B was only 66% of the original plot size. The rest will be planted for the 2012C season and is scheduled for harvest in October.</p> <p>The Abakenyezi Twisununure association grew tomatoes on 0,5ha. The revenues obtained were lower than projected (87% of the planned revenue). This reduction in revenue has been explained through offtake by farmers for their own consumption. In the end, the group members have expressed their enthusiasm as they have achieved three times the level of production than they used to before BAP's intervention thanks to the improved agronomic practices learned. They see horticulture as promising business for the future.</p>
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#### Data from groups that are still harvesting and marketing their production from 2012 B

For these groups, both the production and the revenues related data are being collected as the harvest and the sales are going on. Up to day, the achievements for these farmer groups are shown in the following table.

Province	Crop	Assn	Production		Revenues		Harvest
			Kg	%	Fbu(x000)	%	
Bururi	onion	Twijukiribikorwa	N/A	N/A	N/A	N/A	Pending
Makamba	garlic	Dufatanemunda	N/A	N/A	N/A	N/A	Pending
Makamba	eggplant	Tunganyubuzima	650	17	180	9	On Going
Makamba	amaranth	Vyizigiro	100	1,6	22	1,25	On Going
Makamba	cabbages	Vyizigiro	720	12	40	1,6	On Going
Gitega	garlic	Tugwizumwimbu	72	20	N/A	N/A	Pending
Mwaro	Onion	Sohora Isuka	N/A	N/A	N/A	N/A	Pending
Mwaro	onion	Turemeshanye	N/A	N/A	N/A	N/A	Pending
Mwaro	onion	Twizerane	103	1,4	154	6,18	On Going
Mwaro	onion	Twiyungunganye	378	5.3	173	6.9	On Going
Mwaro	tomatoe	Tugwizumwimbu	491	430	9.4	20.6	On Going
Kayanza	onion	Shigikirabarimiyibikawa	800	5.6	400	5.6	On Going
Kayanza	garlic	MIGI	N/A	N/A	N/A	N/A	Pending
Kayanza	greenpepper	Twijukirikawa	300	14.6	300	20.8	On Going
Kayanza	cabbages	Twiyungunganye	1751	36	437	46	On Going
Kayanza	greenpepper	Dushirukubute	128	3.9	90	3.2	On Going
Kirundo	garlic	Kamenyiyobweze	N/A	N/A	N/A	N/A	Pending
Kirundo	eggplant	Terimbere	100	0.7	7	0.20	On Going
Muyinga	carott	Girivyizigiro	N/A	N/A	N/A	N/A	Pending

Muyinga	amaranth	Turwanyubukene	N/A	N/A	N/A	N/A	Pending
Muyinga	onion	Dusanuribidukikije	N/A	N/A	N/A	N/A	Pending
Muyinga	onion	Abarwizanyanya	N/A	N/A	N/A	N/A	On Going
Ngozi	eggplant	Tugarukiramatunda	150	13.7	60	9.1	On Going
Ngozi	greenpepper	ECOFA	140	16	54	32	On Going
Buj r	eggplant	Urumuri Rw'Abarimyi	560	4.0	278	1.6	On Going
Buj r	plums	Tugwanyubukene	N/A	N/A	N/A	N/A	Pending
Buj r	cabbages	Twizigirane	21 300	89	2130	59	On Going
Cibitoke	onions	Assaka	N/A	N/A	N/A	N/A	Pending

These groups are still providing data related to the volume of production and revenues from production sales for crops grown during 2012 B. For some groups like the groups that are growing garlic, the preliminary data are expected with the end of July and they will be documented as soon as they are available. However, the table shows an important progress toward the achievement of the purpose with as example the Twizigirane group of Bujumbura which has already met 89% of its projected production even if the harvest is still on going.

The lower performance toward the projected volume and revenues are for groups that are not yet harvesting their production but our projection estimates that the harvest will take place with the end of July.

### Activity 3: Facilitation of fields days

To showcase some achievements and to share the lessons learned by our partnering groups, field days have been facilitated in three provinces. Fifty-four farmers attended, including 30 women (70%). Also, four technicians of the DPAE (hillside extension agents) took part in these activities that contributed to the dissemination of BAP-introduced know-how to other community-based organizations with strong horticultural vocation.



Figure 2. Farmers during a field day in Matana, Bururi province

Date	Venue	Attendance
June 13rd	Rutegama	20 (2M/18W)
June 14th	Matana	22 (5M/17W)
June 15th	Nyanza lac	12. (7M/5W)

#### Activity 4: Documenting impact of fields activities

Documenting the impact of field activities is an important part of making sure our intervention is having the expected effect. This activity has focused on understanding trends induced by some of the horticultural initiatives taken by BAP at individual, group and community levels. The activities where farmers have shown greater interest have been shortlisted for further analysis. A summary of these documentation and assessment process is offered below.

#### Small scale irrigation system rendering production in four seasons a possibility.

Traditionally, Burundian farmers are able to grow three full seasons of vegetable crops per year. Seasons A and B are planned around the rainy seasons while season C crops are typically grown in the low lying basins and flatlands (floodplains) in proximity to water sources. Growing three seasons on the same plot of land is rare unless some form of irrigation is available.

With rich soils and semi-tropical weather in the lowlands and highlands, the only element missing in most production areas to establish three, or even even four, seasons per year has been the access to irrigation. In response to this need, BAP has pioneered the introduction of small scale irrigation systems using treadle pumps, motor pumps and hand lever pumps according to water proximity and scale of production. With these three choices to bring water to the crop, BAP gave farmer groups the opportunity of trying to grow vegetables independent of rain fall patterns for the first time. Farmer groups from Gihanga, perhaps the driest province in the country, are experiencing interesting results that position them better to target seasons of higher market prices. Lessons learned by Dukorerehamwe twungurane ubumenyi (DTU), Twiyungunganye bakenyezi (TB), Dufatanemunda and the group Twungurane ubumenyi muvyuburimi n'ubworozi (TU) as they take advantage of this technology have been analyzed.

One of the most motivating advantages for farmers is the capacity to scale up crops and seasons by combining irrigation with other modern production techniques learned. For instance, while some areas are in production and nearing the end of the harvesting season, a nursery in proximity is already planted with the seedlings for the next season. Table 6 lists the four organizations that have been able to master these techniques to produce four crops per year in the same plot of land.

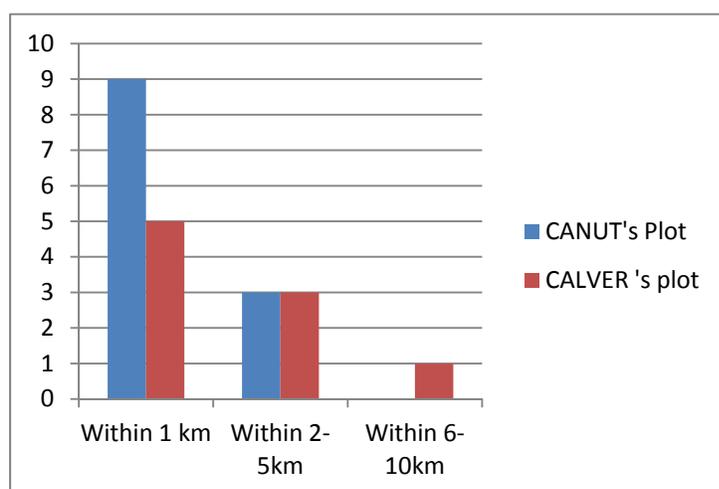
**Table 10: Production calendar of DTU, TU , TB and Dufatanemunda**

Group	2011C		2012A		2012B		2012C	
	Crops	Revenues	Crops	Revenues	Crops	Revenues	Crops	Revenues
Dufatanemunda	Tomatoes	640,000	Tomato	656,000	onion	NA	Onion	N/A
DTU	Tomatoes	1,200,000	Tomato	2,600,000	Onion	542,000	Tom	N/A
TB	Tomatoes	1,700,000	Tomato	600,000	Onion	1,096,500	Tom	N/A
TU	Cabbage	460,000	Cabbage.	60,000	Cabbage	453,330	Onion	N/A

### Tomato trellising techniques disseminated from demonstration plots to nearby communities

One of the innovative initiatives BAP introduced through its horticultural value chain work was the use of trellising techniques on tomatoes. Although partnering farmer groups were hesitant at first to invest time and other resources in trellising, it has taken only one to two seasons to convince them of the advantages of the technology. With the use of locally available materials made essentially from wood sticks and ropes, the costs have been diminished and the benefits are the same. The techniques showed their effectiveness in aerating the crop, reducing fungal diseases, allowing for better and faster harvesting practices and combining with more efficient planting distance to maximize effective land area used. During the trials on demo plots, an increase in production has been noticeable to the naked eye as an ever increasing number of farmers visit the plots and inquire more about technique and its cost. A conservative estimate from field data shows that productivity under trellising has outperformed plots with no trellising by at least 25%.

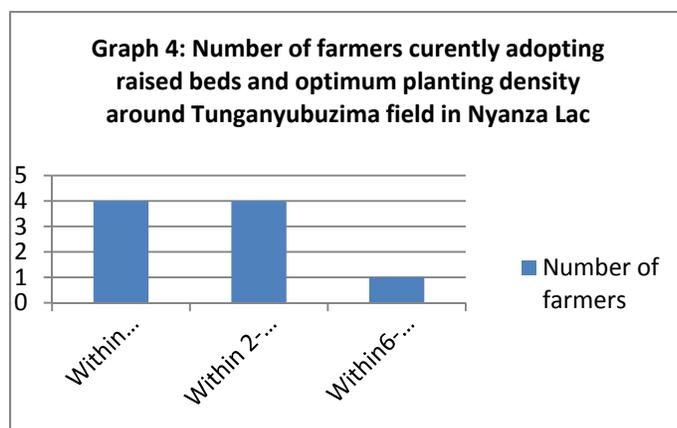
Formal feedback to farmers on the cost, labor and effects of the use of trellising has been shared during the organization of field days. Farmers learn the numbers (costs and benefits) but also see the results with their own eyes constituting an effective “show me” field-teaching technique. Because of its tangibility and practicality and the immediate visual impact from a distance, this technique has disseminated from the demo plots to nearby production zones. The HVC team and ADCs confirmed that



whenever farmers have seen the evidence of yield increases on several tomato varieties it is typical to see new trellised fields in the next season. The latest farm survey made around two demo plots in Gihanga and Mwaro depicted in Graph 3 shows that a larger number of farmers are adopting this technique. To BAPs satisfaction and surprise some of these farmers are located outside a five-kilometer radius from the demo plot.

### Raised beds are preferred to flat beds

Planting on raised beds has been an activity led by BAP; its introduction has been motivated for technical reasons. Raised beds provide looser soil stratus, a factor that favors the development of most field crops' root systems. This is not the case when planting on flat beds. Despite the initial effort in building raised beds, they permit faster, more efficient and less fatiguing application of cultural practices like fertilization, irrigation, weeding and mulching as only the areas planted are treated. Other activities such as spraying and trellising are also positively affected by this practice. Pre and post-harvest damage is minimized as farmers have specific pathways to use without breaking fragile stem and leaf tissue, shaking flowers or disturbing early fruit setting. In support of environmental protection, the used of



raised beds has also motivated farmers to build raised beds along contour lines contributing to soil conservation and better use of water resources.

This technique has been viewed with much interest by farmers in targeted communities. Witness accounts and information provided by the local rural extension agent in Mwaro and other parts of Kayanza are contributing to the dissemination of this technique. An interesting case is for Nyanza Lac where a

former demo plot beneficiary client is now taking the initiative to help the surrounding community-based organizations adopt this technique together with optimum planting density for crops like tomatoes, cabbage and eggplants.

Once again, BAP is satisfied to see the impact of this simple but advantageous technology being adopted beyond the proximity of the demo plot. Graph 4 shows how farmers located even within a 6-10km radius from the demo plot are adopting this technology.

#### **Linking BAP beneficiaries to other sources of technical support**

As the activities of BAP head to the final close-out, it is important that all client groups find a highly motivated partner to accompany and guide their future progress to higher levels of achievement. In many instances, the only partner with field presence in target communities is the DPAE. BAP has worked closely with DPAE technicians during this reporting period to make sure they understand well the technologies introduced by the project and the potential for expansion of these activities to other communities.

Additionally, several joint GoB and NGO-led projects assisting rural communities to improve their livelihoods are being contacted. As a result, many of our actual beneficiaries have already been identified by other stakeholders who are interested in reaching clients having a certain level of organization and management skills. At the same time, BAP is confident that government-sponsored projects can play a more active role in the continuation of BAP activities through the PNIA program. Table 7 below shows some of BAP-targeted groups who have already been identified by other to engage in partnerships for horticulture development.

**Table11: Organization willing to develop partnership with BAP supported associations**

Group	Location	Partner interested
Twiyungunganye Bakenyezi	Gihanga	Prodema
DTU	Gihanga	Prodema
Murima wacu	Bururi	Prodema
Abasangirakivi	Bururi	Prodema
Twijukiribikorwa	Bururi	Prodema
Kazoza keza	Gitega	COPED
Turwanyinzara	Gitega	Prodema
TU	Gitega	Prodema

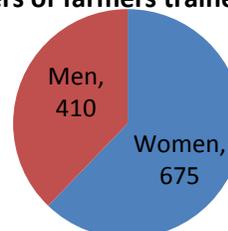
### Activity 5: Training on best agronomic practices

The purpose of training on best agronomic practices has been justified in the need to give farmers an opportunity to increase their productivity by making better use of their resources. This approach allows the participation of literate and illiterate farmers alike to acquire new knowledge and skills through simple practices such as different planting densities, raising planting beds and trellising. Over 70 sessions held so far have trained 1085 farmers from 64 farmer groups, the majority of them being women (62%).



Onions nursery, Terimbere's demo plot

**Numbers of farmers trained of GAP**



Graph 5: .Number of farmers trained on GAP

### Activity 6: Training on post-harvest technologies

Six training sessions of five days each were held in this quarter in five different locations: a) Rugombo commune in Cibitoke province ( 1<sup>st</sup> and 2<sup>nd</sup> round); b) Mpanda commune in Bubanza province (2<sup>nd</sup> round); c) Nyanza Lac commune in Makamba province (2<sup>nd</sup> round); d) Bugabira commune in Kirundo province(2<sup>nd</sup> round) and e)Busoni commune in Kirundo province (2<sup>nd</sup> round).

A total of 242 people attended the sessions (130 men and 112 women)). Among the participants, 28 were members of DPAEs, 181 were members of associations, 3 were representatives of NGOs and 30 were individuals who are involved in horticulture (Table 8).

Each training session consisted of 2.5 days of theory and 2.5 days of practice. Solar drying was applied to tomatoes, cassava leaves, amaranth and zucchini leaves while conservation in bottles was applied to tomatoes and fresh beans.



*Trainees are filling the bottles with tomato sauce*



*Trainees are putting tomatoes in the solar drier*

A quick survey carried out by the horticulture team at the Gihanga and Nyanza Lac training sessions led to the conclusion that farmers appreciated the technique. Some key recommendations concerned the quality of bottles which should have a better appearance and each bottle should have a “smart” attractive label which shows the name of the manufacturer, the nature of the content, net weight in kilogram or volume in liters, manufacture date, nature and proportion of ingredients and storage requirements. It was also observed that tomato sauce made from the Roma variety tomatoes was thicker than the ones made using the Floradel variety because Roma fruits contain a higher percentage of solid matter (pulp).



**Table 8: Attendance to the training sessions is shown in the table below:**

Training site	# farmers groups members				#att.	Individuals				NGOs staff				DPAE's staff				Total part.	%W
	M	W	T	% W		M	W	T	% W	M	W	T	%W	M	W	T	% W		
Rugombo 1	11	3	14	21	2	1	0	1	0	1	0	1	0	24	2	26	8	42	0.12
Mpamda	6	24	30	80	7	10	0	10	0	0	0	0	0	0	0	0		40	0.60
Nyanza Lac 2	10	15	25	60	5	3	10	13	77	0	1	1	100	0	1	1	100	40	0.68
Bugabira 2	30	10	40	25	9	0	0	0	0	0	0	0	0	0	0	0		40	0.25
Busoni 2	28	12	40	30	20	0	0	0	0	0	0	0	0	0	0	0		40	0.30
Rugombo 2	1	31	32	97	4	3	3	6	50	1	0	1	0	1	0	1	0	40	0.85
<b>TOTAL</b>	<b>86</b>	<b>95</b>	<b>181</b>		<b>47</b>	<b>17</b>	<b>13</b>	<b>30</b>		<b>2</b>	<b>1</b>	<b>3</b>		<b>25</b>	<b>3</b>	<b>28</b>		<b>242</b>	<b>0.46</b>

\*M= men, W: Women. #Att. Total attendance. Total Part.: Total participants.

The trainees were much interested and they suggested to CNTA that they carry out more training to the farmer groups to reduce post-harvest losses which are reported to attain at least 15% of total produce.

### Activity 7: Training on the use of wooden boxes

This activity was carried out by BAP intern Valence Ndayisenga in Kirundo province. One hundred and twenty eight (128) people participated in the training of whom 58 were men and 70 were women from 8 different associations of Kirundo province (see Table 9). The trainees had the opportunity to observe that tomatoes that were transported in plastic cans arrived to the market in very bad shape while those transported in wooden boxes retained a smart appearance because they were not submitted to heat or any pressure.

**Table 9: Attendance to training on the use of wooden boxes**

Date	# Assoc	Association	Province	Commune	Attendance			
					T	M	W	%W
03.04.12	1	Dushigikirane	Kirundo	Bugabira	7	3	4	0.6
17.04.12 & 23.04.12	2	Twiyungunganye	Kirundo	Kirundo	14	8	6	0.4
02.05.12	3	Twungubumwe	Kirundo	Busoni	19	2	17	0.9
03.05.12	4	Tugarukiruburimy	Kirundo	Vumbi	13	9	4	0.3
07.05.12	5	Kamenyoyibweze	Kirundo	Busoni	9	3	6	0.7
08.05.12	6	Abishizehamwe	Kirundo	Busoni	15	5	10	0.7
09.05.12	7	Terimbere	Kirundo	Vumbi	26	19	7	0.3
04.06.12	8	Twiyunge	Kirundo	Kirundo	25	9	16	0.6
TOTAL	8				128	58	70	0.5

Three associations used the wooden box to transport their produce to Kirundo and Bugabira markets: a) TWIJUKIRIKORWA of Kirundo commune (30 members); b) TWIYUNGUNGANYE of Kirundo commune (15 members) and c) DUSIGIKIRANE of Burabira commune (25 members).

**Note:** Twiyungunganye association was trained twice in April (April 17<sup>th</sup> and April 23<sup>rd</sup>). These were the same beneficiaries on different sub-themes.



*Plastic cans for tomato transport*

*Wooden boxes Vs plastic cans for tomato transport*

Among the three groups trained, Twijukiribikorwa, Twiyungunganye and Dushigikirane adopted the use of wooden boxes during this reporting cycle for their tomato production. The other groups trained expressed interest in adopting these practices in the future. A quick practical assessment of the

advantages of this technology was accomplished in the presence of the group which resulted in convincing evidence to farmers. The analysis consisted of the following comparison with the current alternative of plastic cans.

- It was shown how the boxes protect the products and they arrive to the market in better condition than those transported in plastic cans, particularly the product placed on top and bottom layers.
- Wooden boxes contain 1.5 times the content of the plastic cans which is a better use of containers per trip to the market.
- In a one way trip, a bicycle can carry 6 plastic cans and sell it for 6000Fbu each, a total of 36 000Fbu. In a similar trip, a bike can carry 5 wooden boxes tightly stacked which are sold 9000Fbu each, totaling 45 000Fbu. Farmers did the math and the 9,000Fbu difference was the most important incentive to adopt this practice.

### Activity 8: Trial of two prototypes of produce displays on local markets



Figure 5. Prototype 1

Two prototypes of produce displays were manufactured in four specimens each. The purpose of these prototypes is to provoke a change in the current retail culture from direct contact with the ground displays which lack customer appeal and hygiene. The proposed prototypes are more attractive, off-ground, cleaner, sun –protected, modular and stackable to facilitate their transportation in and out of the market site. Luring vendors and consumers to these displays in several markets will be the work of the HVC team in weeks to follow. A short explanation of these prototypes is offered below.

**Prototype #1** can bear three levels of three wooden boxes each, which makes a total of nine boxes per display. The boxes are leaning so that the customer can easily appreciate the product inside the box. The display is also equipped with a wide multicolored sun umbrella which provides the shade for both the

products and the seller. The white paint was chosen to create an attractive background effect complemented with the natural colors of fruits and vegetables.



**Prototype #2** is manufactured on the same concept, but it can bear only two levels of two boxes each in the front side and one level of two boxes in the back, which makes a total of 6 boxes per display. This

model was designed for areas where consumers walk on both sides of the display.

### Activity 9: Dissemination of training materials to partner organizations

Up to the previous quarter, BAP has distributed 400 copies of the agriculture extension handbook “FROM FIELD TO MARKET” which has received excellent reviews from ISABU, MINAGRI, partnering NGOs and farmers. Taking advantage of the strong welcoming of such material, the project has developed a second edition and a set of extension technical guidelines for fruits and vegetables. The technical guidelines explain the best agronomic practices for the main Burundian horticultural crops including tomatoes, cabbage, pepper, eggplant, onion, garlic, amaranth, carrots and Japanese plums.

A run of 3600 copies of these training tools in Kirundi were printed to be distributed to DPAEs. The most common feedback from DPAEs and farmers is that they appreciate this material because it is the first time they see something as complete and rich in technical information for horticulture.



Other beneficiaries including farmer groups in partnership with BAP, ISABU, the University of Ngozi and the university of Burundi, FAO, other projects and NGOs working in the agricultural sector in general and the horticultural sector in particular are also targeted in July for an effective handover of BAP achievements and experience.

### Activity 10: Training of University of Ngozi students on entrepreneurship

During this reporting period, 10 students of the University of Ngozi have been trained at BBIN on topics which covered entrepreneurship related modules. The first group which included five (5) students of the economic department (2 men and 3 women) attended the training from May 21<sup>st</sup> to May 25<sup>th</sup>. The second group which included five (5) students of the economic department (all men) attended the training from June 11<sup>th</sup> to June 15<sup>th</sup>.

Expectations are for students to initiate their own companies and ventures following their proposed plans that won them the access to this training. The preliminary list of themes for their own ventures is:

- a) Fumigation services for the fruit and vegetable sector
- b) Seedling production in large scale
- c) A bakery and juice parlor based at the University using agriculture products grown locally
- d) Conditioning and selling seeds and fertilizers
- e) A fruit jam small factory

## Constraints and main challenges

The reporting period was characterized by many key challenges and constraints leading to gaps in performance during this period. These are described below.

### Unpredictable climatic conditions affected the yield performances for several fields.

The seasons A and B of 2012 recorded unusual rain fall patterns that confused farmers in deciding when to plant. This resulted in cropping time frames that did not fit the traditional schedules leading to delayed transplanting from the nurseries to the field with subsequently lower yields. These lapses of unpredictable weather started in early December 2011 and continued through March 2012. Rainfall restarted later but in some areas like Muramvya, Makamba and Mwaro the rains came with hail exacerbating the damage to the crops. In summary, droughts and floods in different areas of the country affected the performance of most fields.

### Difficulties to achieve the planned planting area

As a consequence of the climatic disturbances of the past two growing seasons, many farmer's associations who received grant subsidies under BAP had to move their main fields, which had been planned to be grown on upslope plots of land as the season 2012B is usually for rain-fed vegetables. With the awareness that due to rainfall anomalies there could be not enough rain to water these vegetables, our partner farmer associations sought to identify alternative sites where the fields could be planted. This has been a hard task for them, because many of them were only able to find some small vacant plots in the low lying bottom lands, making it then impossible for them too achieve the total planned land area under which their project should be profitable. In some instances associations have adjusted so that the remaining land area will be cultivated during the 2012 C season.

### Miscellaneous constraints faced

- ✓ **Poor organization of some groups:** The farmer groups are working on community fields once or twice a week, this has caused great difficulty as activities like planting onions took more time than expected, irrigation task under this arrangement result in low frequency of water application and thus insufficient water like it is the case of Twijukiribikorwa group of Matana.
- ✓ **Poor choice of production sites:** Groups are not getting fertile plots easily where they can produce their crops unless one of the members accepts to donate one of their own. When they have to rent a plot of land, they usually get the abandoned ones; one that are infertile and

where they cannot get significant yield. This was the case of the group Dufatanemunda of Makamba which is not expecting a garlic harvest worthy of their efforts as the field registered high rate of seedling mortality. Also in Bururi (Abasangirakivi group), the cabbage heads harvested weighted 0,25kg per unit where a regular crop yields units weighting 2 to 3,5 kg under normal conditions as the field the association rented exhibited poor soil fertility and did not permit optimum development of the heads.

- ✓ **Facing low seed performance:** Diseases like *altenaria* destroyed many fields during the 2012A demoplots even if the treatment with fungicides was done regularly and on a preventive basis. Also, garlic seeds produce lower outputs than expected as they have also been attacked by seed-borne diseases.
- ✓ **Field robberies:** Unfortunately robbery has been a big issue that has affected farmer groups that followed all the instructions to accomplish good field production. Contrary to the expected effect of installing signs on the roads, farmers think that signs attracted as many good as well as bad people to the demo plot. The problem started by the theft of visibility signs (5 in Gitega, 1 in Bururi) and later translated to thefts at the production sites. For example, half of the garlic of Tugwizumwimbu of Gitega, a quarter of the onion crop in DTU and TB and 100Kg of tomatoes in Abagwizanyanya were stolen. These also resulted in less production sold than what was actually produced, negatively impacting expected outputs and diminishing profits. The case of robberies have been reported even on fields where farmer groups had installed night watchmen (case of TB et DTU). The only explanation in these instances is that thieves got smarter by involving the guards in the coup.

### Market challenges for harvested production

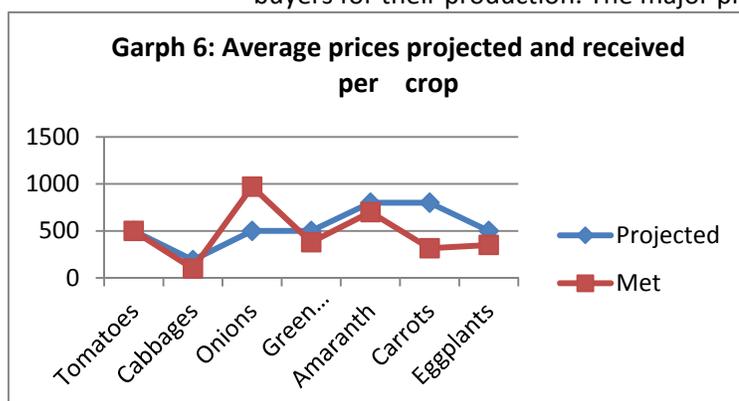
The purpose of all fields set during the seasons 2012A and 2012B was to increase revenues of farmer groups by supporting the production and marketing of good quality vegetables grown under improved techniques promoted by BAP. However market prices are a moving target and under the present climatic condition fluctuations were even more dramatic. In finding the best market prices, some constraints were identified by the participating groups.

**Market availability:** some cases identified where farmers had a problem finding potential buyers for their production. The major problem with market access was blamed on the

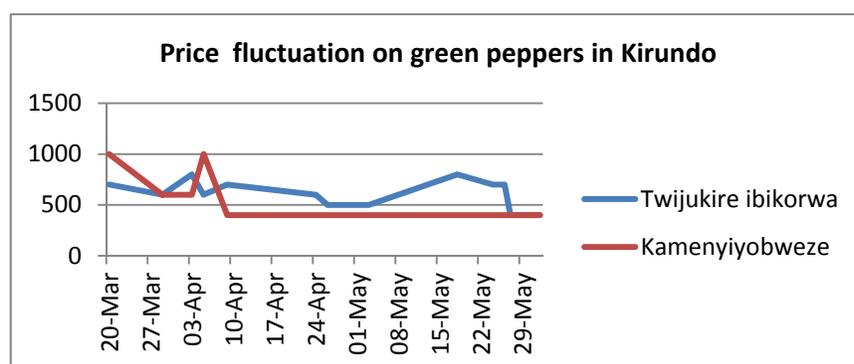
remoteness of production zones to sales places and the low purchasing power of the local population, especially prior to the bean and other cash crop harvests of 2012B.

### Price fluctuation along the production season

Prices for many of the crops in the field changed from week to week during the harvesting period. The bigger gap between the projected



unit price and the real price was recorded on carrots were farmer group sold for 315Fbu/kg instead of the expected 800Fbu/kg the year before. Price improvements were rare and lower in proportion to lower prices with the exception of onions. For instance, the price received on onions and tomatoes turned out to be higher than projected (530Fbu vs 500F for tomatoes and 970F vs 500Fb for onions). Decoding market prices still takes a lot of guess work at the time of planting due to weather conditions and the lack of reliable data on area planted from one season to the next.



The farmer groups state that the price fluctuations are due to the volume of production available on local market, the purchasing power of customers (the highest prices occurs when the production is picked by Rwandan importers) and at last the quality of the products.

## Summary of lessons learned

The lessons we learned over this last quarter will be the basis for a discussion about what can Burundi's horticulture do to become a real source of economic growth for the country. The experience of having worked with different partners over the years, different scenarios faced with mid-size and small scale farmers point to the fact that the sector is fragile, poorly organized and relying on an archaic production and marketing system highly affected by climatic conditions and without enough agro industry to evacuate excesses in production available at the fresh products market.

However with initiatives undertaken during these past three years, key lessons arise that are worth discussing. Several activities introduced and expanded by BAP are now evidence of being real game changers for a number of farmer groups. For instance, the extension of small scale irrigation, promotion of improved techniques of production, availability of tools to reduce post-harvest losses and the implementation of basic post-harvest technologies to mention a few. Can these practices help farmer groups evolve from subsistence horticulture into a profitable business? We believe so as many Burundian families have produced incomes that only mid-size farmers of coffee or dairy producers have achieved.

## CONCLUSION

Despite the particular climatic conditions under which field activities were conducted during this reporting period, significant results have been achieved. The main milestones for each grantees small project (income generating activity) have been met, and the results produced by our partners have proven that a more competitive value chain can be developed through better planning and targeting more committed farmer groups who are able to transform their subsistence agriculture into market oriented businesses.

In addition, the production of tools to support the extension system has been welcomed by our partners. We hope that other stakeholders will improve this approach in producing more extension tools in local language to benefit farmers in the rural communities.

On the other hand, many quantitative results produced have shown the contribution of the horticulture sector to increasing revenues of rural families and food security. The capitalization of experience gained via the demonstration plots of earlier seasons permitted to many farmer groups to reach their projected results. Farmers who were not able to reach their goals are satisfied that in the long run the techniques and technologies promoted and skills they acquired will produce added value to their operations and that negative variance in production was largely due to intemperate climactic conditions during the growing season coupled with poor management of internal conflicts.

### Planned activities for Q4

- Monitoring results of the demo plots established for 2012B
- Meeting the remaining milestones for all the 2012b season grantee income generating small projects and
- Capitalization of grantee production and marketing data
- Extension of produce display prototypes in local markets
- Demonstrations of the solar chimney dryer
- Training on best agronomic practices for DPAE Kirundo staff
- IDEAS business plans competition

## Horticulture Success story- BAP partner association awarded Best Farmer Group of the Nyanza Lac commune by the Ministry of Agriculture and Livestock

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Tunganyubuzima is a farmer group acting in the commune of Nyanza Lac of the Makamba province. It was created in 2006 21 members 16 of whom are women and 5 men.

Since 2006, the group has been producing vegetables on a small level, making no significant economic gains as the production was seriously limited by lack of technical skills in management of vegetables. The group grew tomatoes and amaranth for several seasons. In 2010, the project of rehabilitation of livestock services PRASSAB awarded the group eleven cows which helped it to address the lack of manure as a source of fertilization.

By the year 2010, the group entered in partnership with BAP under the HVC team assistance. Among the activities undertaken together were various capacities building opportunities to strengthen their resource management capacity. After careful consideration, the group was selected to host a demo plot during the season 2011C where farmers were invited to learn improved agronomic techniques for key vegetable crops. At the end of the season, the group achieved revenues of 230,000Fbu. Their good group performance was rewarded with a functional literacy project led by BAP staff working on the subject.

With the demo plot experience, the group learned useful techniques like optimum planting densities and trellising. The techniques have been replicated by members in their own fields and the president of the group is often called by neighboring groups to teach them and build up their capacities.

For 2012A, the group grew tomatoes under the new techniques and generated 754,000Fbu in revenue. This money has been used as a contribution to a grant that BAP awarded the group for 2012B consisting 0,50ha of eggplant production taking advantage of the availability of a motor pump provided by BAP. Given the pump capacity, the group opted to extend the field to 1ha. As the harvesting season has begun, the group is producing good quality eggplants and revenues have already reached 200,000Fbu.

By the month of April, the DPAE of Makamba organized inter-communal competition to find the most performing groups in the province. Each communal agronomist had to select 3 groups to compete for the best leading farmer group contest that was organized by MINAGRIE through the DPAE of Makamba. The group won the competition without much difficulty as the DPAE technicians recognized its dynamism in growing vegetables under improved techniques, particularly in nursery production, raised beds utilization, optimum plant spacing and irrigation with motor pump.

As a prize, the group will be gifted nine varieties of vegetables that will be produced on 0,90ha. All inputs including seeds, equipment maintenance, fertilizers, and pesticides will be provided by MINAGRIE while the group will invest in labor and provide animal manure.

## Horticulture Success Story-2 Converting Horticulture to a Business, the story of Dukonerehamwe Twungunane Ubumenyi

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Dukonerehamwe Twungunane Ubumenyi (DTU) is a woman's association based in Ninga 2 village of Gihanga commune in Bubanza Province, a mere 30 minutes from Bujumbura. Founded in 2006 it is composed of 11 women.

During the first years of its existence DTU began by growing vegetables on rented land, not knowing if their activity generated any profits because, with a literacy rate of only 37% and no bookkeeping skills no accounting of costs and revenues was generated. Initially the women grew tomatoes, eggplant, green pepper, onions and amaranth. The first time they made a profit was in 2008 when they generated 305,000 FBU. This income was divided among the members and used to rent more land for cultivation.

By 2010, in collaboration with BAP, DTU had earned its legal recognition and were regularly receiving capacity building assistance in topics like organizational governance, financial management, petty cash management and improved record keeping, marketing and peaceful conflict mitigation.

During the 2011 C agricultural season the group was chosen to host a horticultural demonstration plot to showcase improved techniques for producing and marketing tomatoes on 1000m<sup>2</sup> of land. At this point, the association had 37.500 FBU in savings at their local CECM microfinance. The harvest from the demonstration plot yielded 1.200.000 FBU in total revenue, more than the association had ever generated since coming into existence.

The group reinvested a portion of their revenues in the production of 1500m<sup>2</sup> of tomatoes during 2012 A. The field yielded 6.25 mT of tomatoes, a record output for the region. Sales of this production yielded 2.558.000 FBU in revenue. This allowed the group to continue its expansion, producing onions on 2000 m<sup>2</sup> of land during the 2012 B season along with rice. The onions under yielded by 85% but still generated an additional 542.000 FBU in revenue for the association. With the rice production, revenues climbed to over 3.5 million FBU.

DTU is currently growing tomatoes on 1 ha of land with harvest expected in September to generate an additional 4 million FBU in revenue. Already DTU has used its revenue to acquire 0,5 ha of land during 2012, as well as investing in livestock, particularly goats, for each member to generate manure and additional irrigation equipment to complement the treadle pump received as part of its subsidy from BAP.

The performance of the DTU woman's association has led them to be nominated as the best performing horticultural association in the commune of Gihanga by the PRODEMA project.

# Cross cutting Activities

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## Women's Leadership (Gender) and Micro-Enterprise Development

### Introduction

At the center of activities during this reporting period was the start of the second phase of literacy training. To this end 137 centers were opened in 11 provinces. All the centers received a minimum packet of pedagogical materials. By the end of the quarter 274 literacy trainers were offering assistance to 2.720 women members of BAP associations. The participation level hovered above 96%. Results of the training will be known in July and reported on in our next report.

Twenty women's associations who received grant assistance from the program for their income generating activities were busy implementing these activities during the reporting period. These activities are as varied as horticultural production, beekeeping and the fabricating soap using palm oil. Beekeeping is just at its inception, the soap making activity sold over 50.000 bars between mid March and the end of May, generating over 5.4 million FBU in revenue. Meanwhile the 18 associations undertaking horticultural activities have begun marketing their production. While results are lower than projected due to adverse climactic conditions, the women find the best practices technologies to be of interest and are assured they are making more money through application of these technologies than they would have otherwise.

ADC continued capacity reinforcement for associations- particularly in areas related to governance, management and bookkeeping. A total of 521 association members from 75 different associations, 65% of whom were women, participated in sessions during this reporting period. As more effort is focused on implementation of income generating activities and foundational literacy training less time was dedicated to these types of training sessions.

## Deliverables Matrix

<b>Gender and Micro-Enterprise Deliverables</b>	
<b>Outputs/résultats</b>	<b>Results achieved @ 30 June 2012</b>
1 or more grants made to local NGO to institute literacy activities targeting women leaders of producer associations	1 Grant signed w/ IGAA. 137 centers opened in 11 provinces with 2720 people actively participating
160 women leaders have their capacity reinforced	339 women leaders trained during Q3. Total women leaders with capacity reinforced during PY 5 =1156
20 business plans for income generating activities developed by women's association	20 Business Plans developed by women's associations have resulted in small grants for IGA
At least 35 women's groups establish bank accounts at micro-finance institutions and leverage access to credit	N/A
At least 20 AFAB members complete training in Business English	Not yet accomplished
3 Groups receive assistance for beekeeping activities	3 Assns assisted
1 PO receives assistance for improved processing of fruits or vegetables	Not yet accomplished
4 groups receive assistance in developing traditional basketry activities for commercial sale	1 Union from Gitega has received assistance in this area
4 groups receive assistance in developing tailoring enterprises	Not yet accomplished
8 PO assisted with grants for the production of food crops and horticultural products	20 associations féminines appuyées dans la production des légumes
400 women involved in income generating activities	442 women participated in IGA
Women producers are assisted to participate in regional commercial fairs	Women participated in the Regional Trade Show hosted by the Burundi Federal Chamber of Commerce
Women producers are assisted to participate in local commercial fairs	5 women participated in a trade show associated with the EAWEEEXN
Women leaders receive project assistance to participate in workshops	Not yet accomplished

## Activities accomplished this Reporting Period

### Monitoring of 2<sup>nd</sup> Phase Literacy

Of 2714 people who registered for literacy, there are currently 2.720 who are actively pursuing the curriculum (100.2% of those who registered. By the end of June there were 137 literacy centers operating on 93 hillsides in 32 communes of 11 different provinces. The majority of these centers are facilitated by literacy trainers trained by BAP in Phase 1. Demand for capacity reinforcement of this type remains elevated. The table on the next page gives an idea of the evolution of this activity.

Province	Literacy Centers	Number of participants registered	Number of participants actively attending	Last lesson @30 june	
				Most advanced	Least advanced
Bujumbura rural	9	90	108	31	27
Bururi	3	13	35		
Cibitoke	7	97	89	30	27
Kayanza	18	375	329	31	24
Kirundo	32	695	712	31	23
Gitega	6	146	134	31	31
Makamba	5	85	83	31	28
Muramvya	1	28	20		
Muyinga	27	556	589	31	16
Mwaro	15	333	348	31	31
Ngozi	14	296	273	29	24
<b>Total</b>	<b>137</b>	<b>2714</b>	<b>2720</b>		

### Income Generating Activities initiated by women's associations

During this quarter 20 women's associations undertook income generating activities with small grant assistance from BAP. Eighteen of these associations produced and sold horticultural crops, one undertook beekeeping activities and the final association produced soap from palm oil for sale. Two other associations received beekeeping material from BAP (modern hives, protective clothing, smokers etc..) to initiate modern beekeeping activities in their communities. Further, material was provided to an additional 18 associations in Mwaro province to permit them to initiate modern nurseries and adopt best agronomic practices for horticulture.

Many of the horticulture associations proceeded with their first harvests during this quarter and results of these may be seen in the horticulture chapter. A number of the associations have crops still in the field, or are continuing to harvest because they staggered their planting in order to delay harvest so that they could time market placement to avoid peak season and thus garner a better price for their products.

The Beekeeping Union Tugwizumutsama w'ubuki successfully transplanted a large number of bee colonies from traditional to modern hives, but for 26 hives, the populations fled. For those hives where the populations took, harvest is expected during Q4.

**Synthesis of Income generating activities developed with small grant funding for women's association and micro-enterprises (soap making/beekeeping)**

Province	Association	Activity	Production in kg	Sales in kg	Revenues in Fbu	Observations
BURURI	Abasangirakivi	Cabbage (.25 ha)	1900	1900	380.000	
	Murima Wacu	Cabbage (.4 ha)	4150	4150	830.000	
	Twijukiribikorwa	Onion (.2 ha)				Crop in Field, no harvest yet
BUBANZA	Dukorerehamwe Twunguranubumenyi	Onion (.2 ha)	542	542	542.000	Revenues generated were used to rent a field for the production of tomatoes. Seed was purchased and day labor fees paid. The remainder was placed in petty cash
	ECOFA	Green pepper (.2 ha) et onions (.2ha)	1245	1245	1 618 500	Revenues were used to pay labor charges for agronomic maintenance of the demonstration plot, to harvest rice, with the remainder remitted to petty cash. Green pepper harvest continues
	Twiyungunganye bakenyezi	Onions (.2 ha)	914	914	1 096 800	Revenue generated from the sale of onions was used to purchase 13 ares of land (1300 m2) for 500.000 FBU ; to purchase tomato seed (120.000 FBU) to pay day labor expenses for planting the tomatoes (200.000 FBU). The remaining money 276.800 was split, dividing a portion among the members and remitting the rest to petty cash
Bujumbura Rural	Girumwete	Onions (.3 ha)	340	340	349.000	Harvest continues
CIBITOKE	Twumvikane	Soap making using oil palm	54748 (pièces)	54748 (pièces)	5.474.878	Data are for production over a 2 month period from mid- March-mid May. An additional 550.000 Fbu.was generated through the sale of palm nut cake (tourteaux)
GITEGA	Turwanyinzara	Cabbage (.1 ha)	2000	1500	150.000	500 kg distributed to members for auto-consumption
KAYANZA	Twizeranenyabibuye	Cabbage(.10 ha)				
KIRUNDO	Abishizehamwe	Cabbage (.5 ha)		3159	329.550	

Province	Association	Activity	Production in kg	Sales in kg	Revenues in Fbu	Observations
MUYINGA	Abarwizanyanya	Onion (.5 ha)				Harvest pending
MAKAMBA	Vyizigiro	Amarante (.25 ha) et cabbage (.25 ha)	980	980	115.000	Amaranthe harvest pending.
MWARO	Tugwizumwimbu	Tomatoes(.50ha)	215	174	174.000	41 kg were rotten.
	Twiyungunganye	Onions(.50ha)	378	174	173.600	Partially sold the rest are drying in the field
	Twizerane	Cabbage(.25ha)	531	500	50.000	Harvest continues
		Onions(.25ha)	103	103	154.000	Harvest continues
	Dushirehamwe	Cabbage(0.50ha)	7800	7800	1.622.000	
	Turemeshanye	Onions (1/2 ha)				
	Union Tugwize Umutsama w'Ubuki	Modern Beekeeping equipment procured				1st harvest expected during Q4
NGOZI	Kazemumahoro	cabbage (.07 ha)	2884	2677	139.000	Moles attacked the field and destroyed a portion, members are actively engaged in a campaign to protect their harvest

### Capacity Reinforcement for Farmers Associations in Organization, Structure and Management

A total of 521 clients of whom 341 (65%) were women participated in capacity reinforcement activities related to the operations of their associations in 8 different provinces during this reporting period. Almost 39% of the sessions focused on management of the association.

Seven sessions were held in organization and structuring of associations with 24 associations in 6 different provinces. Average number of participants per session was 10.5. Women's participation averaged 70.3%.

Twenty five sessions were held on simplified accounting and marketing in 24 associations in 8 different provinces. Average participation per session was 9.8. Women's participation was 65.5%. The most popular theme was cash management tools, their use and interpretation.

Fifteen sessions on income generating project development were facilitated for 18 associations in 3 different provinces. Average participation was 8.7. Women accounted for 74.6% of all participants.

## Capacity Reinforcement for Associations by Module and Theme

Module and Theme	Provinces	# Assn	Participation			# sessions	X pp/s	%W
			M	W	T			
<b>Association structure and organization:</b>  Principles of a well managed association	Bujumbura Rural,	2	6	18	24	2	12	75
Governance and legal texts	Bubanza, Gitega, Muramvya, Ngozi	17	45	81	126	12	10.5	64.3
<b>Organizational Management</b> Planning of Income generating activities	Kayanza	1	0	7	7	1	7	100
Operations of a solidarity loan fund. Roles and responsibilities of fund managers	Bujumbura Rural	4	8	34	42	4	10.5	80.9
<b>Sub-Total 1</b>	<b>6</b>	<b>24</b>	<b>59</b>	<b>140</b>	<b>199</b>	<b>19</b>	<b>10.5</b>	<b>70.3</b>

Module and Theme	Provinces	# Assn	Participation			# sessions	X pp/s	%W
			H	F	T			
<b>Simplified Accounting</b> The tools and their use in cash management	Buja rural, Bubanza, Bururi, Gitega, Kayanza, Muramvya, Mwaro, Ngozi	12	39	89	128	13	9.9	69.8
Mastering costs	Buja Rural, Gitega	4	17	24	41	4	10.3	58.5
Financial planning.	Buja Rural	1	5	5	10	1	10	50
Annual profit and loss statements	Buja Rural	2	11	9	20	2	8	50
Fixed and variable costs	Buja Rural	1	5	5	10	1	10	50
<b>Marketing:</b> Identifying markets for product placement	Gitega	1	2	11	13	1	13	85
Managing the market environment	Gitega	3	9	15	24	3	8	52
<b>TOTAL</b>	<b>8</b>	<b>24</b>	<b>88</b>	<b>158</b>	<b>246</b>	<b>25</b>	<b>9.8</b>	<b>65.5</b>

Sous-Thème	Provinces	#Assn	Participation			Nombre séances	Eff/S	%F
			H	F	T			
<b>Development of Income generating activities</b>								
Priorisation, critères de sélection des activités génératrices des revenus	<b>Bujumbura Rural, Gitega</b>	3	5	21	26	3	8.7	80.8
Elaboration et exécution d'un projet.	<b>Gitega, Ngozi</b>	9	0	42	42	6	7	100
Rentabilité d'un projet	<b>Bujumbura Rural</b>	6	28	34	62	6	10.3	54.5
<b>TOTAL</b>	<b>3</b>	<b>18</b>	<b>33</b>	<b>97</b>	<b>130</b>	<b>15</b>	<b>8.7</b>	<b>74.6</b>
<b>TOTAL GENERAL</b>		<b>67</b>	<b>178</b>	<b>396</b>	<b>575</b>	<b>59</b>	<b>9.73</b>	<b>68.98</b>

### Facilitating Women's participation at a Regional Trade Show

BAP facilitated participation by 15 women entrepreneur members of AFAB at the Regional Trade Show hosted by the Federal Chamber of Commerce from 29 June-9July 2012. The women of AFAB won a prize for innovation at their stand.



Additionally BAP facilitated participation for 5 women from the women's union Nyunganira of Gitega. These women presented diverse products for sale, principally local basketry and sewn products. The women were very satisfied by their participation because sales of their products generated 430.000 FBU for their woman's association. In addition to selling their products, a number of commercial relationships were developed which led in the end to two Kenyan women ordering a number of small baskets for sale to their clients elsewhere in the East African Community.

### Organizing a Radio Emission

One emission of Akeza Karigura was facilitated in Kirundo with four associations, two from Vumbi and two from Busoni. The theme was the role played by literacy and small grants in the development of women's associations. The journalist followed the associations as they harvested, weighed and recorded the production of their cabbages and then transported these to the local market for sale. The different capacity reinforcement activities undertaken and improved practices for horticultural production that were adopted were much appreciated as it improved the management of the associations, reduced conflict, resulted in better quality production being sold under more hygienic conditions which, in the end resulted in a better sales price at the market.

### Constraints

- Income generating production activities suffered this campaign from poor weather conditions, particularly rainfall distribution and quantity.
- The market is a handicap for rural women producing perishable horticultural products. It is this without great demand and, especially with cabbage, the product does not transport well to allow them to benefit from more interesting market opportunities

### Observations, Lessons Learned and Recommendations

- The opening of literacy centers in close proximity to the client populations resulted in greater than anticipated participation in the activity
- Capacity reinforcement in association organization, structure, operations and management can improve the lives of association members who participate actively according to testimony received from women as related through the radio broadcast Akeza Karigura
- The introduction of improved practices for horticultural production coupled with small grants from the Program has resulted in a number of associations making more money than ever before

- Concentration of literacy activities into four months is possible if the literacy trainers receive some sort of “encouragement” (transportation fees, t-shirts, umbrellas, etc..) in addition to their pedagogical material.
- It is recommended that literacy centers be opened when they don’t conflict with field activities
- Literacy trainers have become respected resource people in their communities.

## Conclusion

This reporting period was marked by the implementation of 20 small income generating activity grants, the start up of 2<sup>nd</sup> phase literacy activities, continued capacity reinforcement for producer associations, particularly in the development and use of management tools, and, finally facilitation, for a number of women entrepreneurs, of their participation at a regional trade fair which resulted in sales of their products, a networking opportunity and further exposure to what it will take to be competitive in the East African Community.

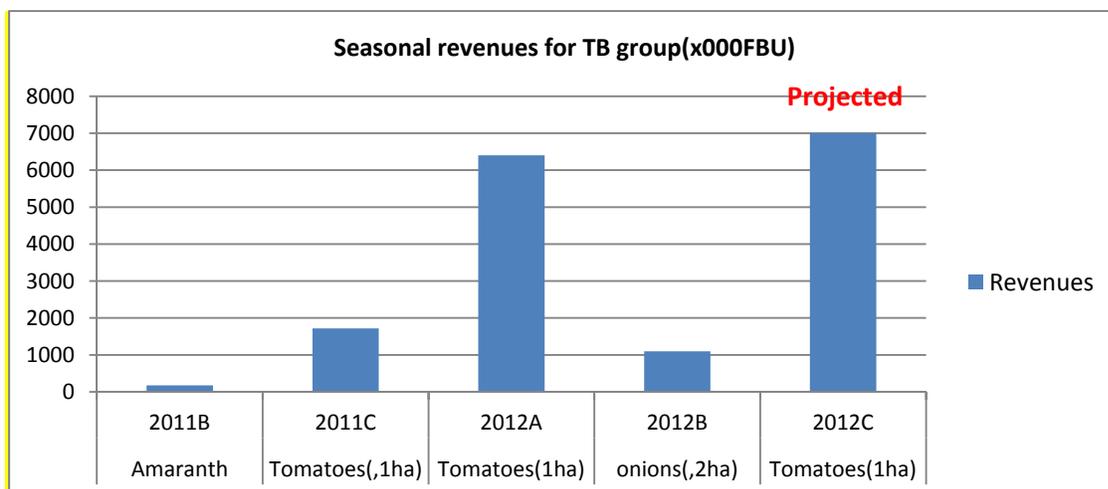
## Success Story-Women's entrepreneurship advances in Gihanga, the story of Twiyungunganye Bakenyezi



Twiyungunganye Bakenyezi (TB) women's association of Gihanga Commune in Bubanza province was founded in February 2005. It is composed of 15 members, all women, living in Ninga, village 2, approximately 30 minutes outside of Bujumbura. Members of the group were subsistence horticulture farmers. During their first years the women grew vegetables on land they borrowed or rented, not knowing if their activity generated profits as literacy was low and the women had no bookkeeping skills to keep a record of their earnings. They historically grew

tomatoes, eggplant, green pepper, onions and amaranth. Through their efforts the women had accumulated 176.500 FBU which was housed in an account opened at the local COOPEC.

By 2010 the group was partnering with BAP and receiving capacity reinforcement in association governance, financial management, record keeping and literacy. Beginning with a 1000 m<sup>2</sup> demonstration field for tomatoes in 2011-C, the women have continued to produce and diversify their horticultural production using best practices introduced by the project; reinvesting in the association and liberating themselves from the need to rent other people's land for their communal activities. The first demonstration field yielded 1.718.000 FBU in revenue. Of this the women invested 600.000 FBU to purchase 1500 m<sup>2</sup> of land. In 2012 A, using their newly acquired land and renting an additional 8500 m<sup>2</sup>, the women produced a crop of tomatoes which generated 6.4 million FBU in revenue.



During 2012 B, members of the TB received a grant from BAP to produce onions on 0.20 ha. Revenue generated from this onion field equaled 1.096.000 FBU. With this money the women have purchased an additional 1300 m<sup>2</sup> field for 500.000 FBU. They have purchased tomato seed (120.000 FBU) and paid laborers to cultivate their field (200.000 FBU). The rest of the money was divided between the members of the association after reserving an amount they put into petty cash. The group is currently growing tomatoes on 1 ha of land of which over ¼ is their own and expects to earn revenues of 7 million FBU when harvest is complete in August/September 2012.

Before collaborating with BAP, this association never had more than 200,000 FBU to its name. In less than 12 months the association has generated over 8.8 million FBU in gross revenue. One member of the association, through a 1 million fbu credit received from the group has been able to replace her straw roof with one covered in aluminum. Other members have received goats and irrigation equipment bought with their share of the profits This has led to an overall improvement in the women's living conditions which they readily attribute to their partnership with BAP. TB's success is an example of thinking big and acting bigger, of turning subsistence production into a commercial activity and investing for the future.

# Grants and Financial Intermediation

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## Introduction

During the third quarter of project year 5, the following activities were undertaken in Grants and Financial Intermediation:

1. Grant applications approved, in process and rejected;
2. Technical assistance in to preparing remaining grant dossiers and credit applications for submission to IBB;
3. Semi-annual reporting to USAID on the DCA Guarantee Fund

## Activities Realized during Q3

### Approved Grants

**In the coffee sector**, four grant applications totaling \$12,286 were approved. BAP supported the first time participation of the following Burundian coffee organizations, in the 24<sup>th</sup> Annual Exposition of the Specialty Coffee Association of America (SCAA): the African Promotion Company (APROCO), Société Générale d'Exploitation et d'Exportation du café et Commerce Générale (SEGEC), la Société Industrielle pour la Valorisation du Café (SIVCA) and Express Coffee.

**In BAP's cross-cutting Microenterprise Development component** two grant applications totaling \$8,836 were approved for the Beekeeping associations *Appui au Développement Social (PADS)* and *le Groupement de Production Agro-pastorale (GPAP)*. The activities funded under these grants aim to increase production and sales of quality honey and promote modern beekeeping practices in Mwaro Province.

**In the Dairy Sector** BAP approved one grant request from the Burundi Bio-Agricultural Community (BBAC) for \$8,404. A dynamic rural association, the BBAC seeks to improve member livelihoods through offering livestock re-population assistance, training in milk production and animal husbandry, access to microfinance, and marketing assistance. BAP grant funds will allow BBAC to finance the installation of a small veterinary pharmacy which would offer on credit, basic bovine medications, inoculants and feed supplements to their members in an effort to improve and increase milk production.

### In-process and Rejected Grants

During the reporting period, 3 grantees (1 in the coffee sector and 2 from the dairy sector) received technical assistance in completing their dossiers for submission to BAP's grant evaluation committee (For details on In-Process Grants "Technical Assistance to Beneficiaries" in section 4 below).

Two grants were rejected; one under BAP's Clean Productive Environment cross-cutting activity and the other in the Horticulture sector.

## Rejected Dossiers:

**Clean Productive Environment:** After several months of exchanges and delays by the grantee in providing required information, during this reporting period, BAP terminated the evaluation process for grant funding to the Sogestal Kirundo-Muyinga. The grant would have funded the rehabilitation of their effluent control treatment infrastructure and installation of a rain water collection system, at their Kagombé Coffee Washing Station.

**Horticultural sector:** BAP has been working with *the Association for Native Development in Kayanza* (ADENAK) for over a year to design a processing unit to transform passion fruit into fruit juice and to produce other beverages. While the project had merit particularly in the development potential in the target communes of Matongo, Murata and Kabarore and the competence of the promoter in Déo-Guide RUREMA<sup>1</sup>, it had become increasingly clear that the project would not be realizable given the lack of reliable data provided by the grantee in support of projections and the time remaining in the BAP project for the activity to be launched approved and generate impact.

Estimates on passion fruit production and supply from the surrounding community, design and production costs for the plant, and sales potential of processed products, among other assumptions, were unsupported by research and thus projections for plant capacity and unit production were unreliable. BAP felt that the funding strategy was unrealistic given that BAP was the sole donor for a project that surpassed 400 million FBU. Several exchanges between BAP staff and ADENAK led to improvements in the dossier over time however key information such as those listed about were never fully provided. Given the time remaining in the BAP project, BAP terminated assistance in developing the dossier and instead suggested other avenues of financing and support such direct assistance from USAID, the African Development Fund or the EU.

## Technical Assistance to Beneficiaries – Developing dossiers for grant funding and loan applications at Interbank Burundi (IBB) under the DCA

BAP Grant and Financial Intermediation team worked with the following beneficiaries to develop their project concept as well as the financial and budgetary analysis required to determine profitability and sustainability.

### BAP Grant Funding Requests

1. *La Société Industrielle pour la Valorisation du Café (SIVCA)* – In July of this year, BAP signed an MOU with dry mill operator SIVCA to establish and equip a modern Coffee Quality Center (CQC) in Ngozi Province. The objective of the CQC is to offer cupping services to coffee farmer associations, cooperatives, CWS managers, Sogestals, and even international buyers, to collect and disseminate information on the quality of Burundi coffee, and to serve as a welcome center

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<sup>1</sup> Deputy Chief of cabinet at the Office of the Second Vice President

to international coffee buyers interested in purchasing green coffee. The total amount of funding requested is \$85,400 to procure cupping laboratory equipment and to contribute to the renovation costs of the donated building. The project document is estimate to be completed and ready for evaluation and USAID approval in July 2012.

2. *The Fromagerie Saint Ferdinand* – BAP is partnering with St. Ferdinand to modernize and expand their artisanal cheese making workshop in Ngozi province. The activity meets a key deliverable in BAP’s dairy sector work plan to support improved cheese production and introduce new dairy products to the Bujumbura market. St. Ferdinand has benefited from BAP sponsored training and targeted consultancies in improved cheese production, hygiene, and business planning over the last year, and is now taking the next step to request and manage BAP grant funding to modernize their factory. The total amount of their grant request is \$29,583. The dossier will be presented to the BAP evaluation committee in July.
  
3. *The Farmer Association DUKAMIREHAMWE* in Ngozi Province – the final grant in process under the BAP Small grant program is to the dairy farmer association DUKAMIREHAMWE. This group has received technical assistance from BAP ADCs in organizational development and participated in BAP improved dairy production trainings. While their grant funding request was submitted late to the program, BAP accepted to review their dossier given its potential contribution to the expansion of improved milk production and collection systems, as well as milk supply linkages to BAP partner cheese-makers currently in need of raw milk in Ngozi Province. The association seeks \$7,600 in grant funding assistance to procure milk collection and quality testing equipment. Their dossier will be submitted to BAP’s evaluation committee in July 2012.

### IBB Credit Applications

Five farmer cooperatives received BAP technical assistance this quarter in preparing loan applications to finance the operational costs of their coffee washing stations for the 2012 coffee campaign season. The Cooperatives DUSANGIRIRJAMBO, MBONERAMIRYANGO, KAZOZA N’IKAWA, KANOVERA and UBWIZA BW’IKAWA prepared and submitted loan applications to IBB for financing under the DCA. All loan applications were approved during this same quarter except for that of Cooperative Kanovera which was still under review at the close of the quarter (see Table 1 below).

The approval of these credit applications to coffee farmer cooperatives is significant given the recent credit tightening by Burundi’s commercial banks to the coffee sector. The ongoing privatization of the coffee sector<sup>2</sup> is being blamed by some for the loss of liquidity currently being experienced in the banking system.

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<sup>2</sup> As discussed in BAP’s PY5 Q2 report, the GOB completed a second round of tenders divesting a total of 28 coffee washing stations and one dry mill to five private investors taking the total number of state owned washing stations down from 133 to 92 (13 sold in the first tender in 2009).

BAP technical assistance to the cooperatives focused on developing accurate financial statements and reinforcing the capacity of the cooperative leadership to effectively present their dossiers to IBB's Credit Committee. BAP also proposed the option of financing washing station operations after IBB initially rejected the idea of funding cherry purchase for these cooperatives.

**Table 1.** Coffee Washing Stations receiving credit financing under the DCA at IBB

Cooperative	Coffee Washing Station Name and location	Credit Amount Requested (FBU)	Status
DUSANGIRIJAMBO	Mini-CWS Maruri, Commune/Province Kayanza	25.226.135	Approved
MBONERAMIRYANGO	Mini-CWS Kaguhu Commune Giheta Province Gitega	24.579.990	Approved
KAZOZA N'IKAWA	Mini-CWS Mpenba Commune Matongo Province Kayanza	20.348.000	Approved
KANOVERA	Mini-CWS Musigati Commune/Province Bubanza	13.400.000	Under Review
UBWIZA BW'IKAWA	CWS Ruhororo Commune Kabarore Province Kayanza	66.965.000	Approved

Upon approval, each cooperative put financing to immediate use. Table 2 shows the amount disbursed and expended by each beneficiary during the reporting period.

**Table 2. Disbursement rates by client (FBU)**

Client	Amount Approved	First Disbursement	Amount of First Disbursement Expended	% Expended
DUSANGIRIJAMBO	25.226.135	24.376.135	850.000	96.6%
MBONERAMIRYANGO	24.579.990	24.555.309	24.861	99.9%
UBWIZA BW'IKAWA	66.965.000	62.765.000	4.200.000	93.7%
KAZOZA N'IKAWA	20.348.000	14.348.000	6.000.000	70.5%

## Semi-Annual Report to USAID of Credit Approved under the DCA

The DCA partnership agreement signed between USAID and InterBank Burundi (IBB) requires submission of a semi-annual report on credit approved using the DCA guarantee fund. BAP worked with IBB to

submit the following information to USAID. The disbursement amounts represent a first round of funding with the second disbursement projected in the next reporting period (July 2012).

**Table 3.** Credit Approved to Date under the DCA at IBB

Beneficiary Name	City/Region	Purpose Of Loan	Interest Rate	Total Principal Disbursement	Principal Repayment (04/30/2012)	Number of Days in Arrears (04/30/2012)	
<b>Years 2 &amp; 3</b>							
1.	Industrie Alimentaire de Buterere, "I.A.B."	Bujumbura	Processing Equipment fresh milk, fruit juice and mineral water	15.50%	369 BIF million	Repaid	NIL
2.	MANWANGARI Jean Baptiste	Bujumbura Rural	Rice Production	17.00%	20 BIF million	Repaid	NIL
3.	SOGESTAL NGOZI	Ngozi	Coffee Factory	16.00%	289,3 BIF million	122 BIF million	NIL
4.	Laiterie NYABISABO	Bujumbura	Milk processing	14%	170 BIF million	15.2 BIF million	30 days
5.	TURAME COMMUNITY Finance	Bujumbura	Microfinance window to Turame members	14%	200 BIF million	Repaid	NIL
6.	ADECAP	CIBITOKÉ province	Livestock farming & milk collection	14%	50 BIF million	12 BIF million	NIL
7.	HATUNGIMANA Japhet	Bujumbura Rural	Livestock farming	16%	82 BIF million	28 BIF million	NIL
<b>Year 4</b>							
1.	MURAMBI COFFEE	MURAMVYA province	Purchase of Coffee Washing Station	14%	32 BIF million		90 days
2.	Coopérative MUSEMA	Kayanza province	cherry collection	15%	90 BIF million	Repaid	NIL
3.	Coopérative NYARURAMA	Kayanza province	cherry collection	15%	90 BIF million	Repaid	NIL
4.	Coopérative NKAMWAYACU	Muyinga Province	cherry collection	16%	200 BIF million	Repaid	NIL
5.	Fédération des caféiculteurs de MUMIRWA-MUCO W'IKAWA	Bujumbura Rural	cherry collection	16%	100 BIF million	Repaid	NIL
6.	Imbo Coffee Company-ICC	Bubanza province	cherry collection	16%	50 BIF million	23 BIF million	90 days
7.	CINTIJE Mossi	Bubanza Province	Rice Production	16.75%	20 BIF million	8 BIF million	90 days

**Table 4:** New Loan Approvals under the DCA, Program Year 5 (FBU)

	Beneficiary Name	City/Region	Purpose Of Loan	Interest Rate	Amount request	Total Principal Disbursement	Principal Repayment (06/30/2012)	Number of Days in Arrears (06/30/2012)
1.	Cooperative DUSANGIRIJAMBO	Kayanza Province	Coffee cherry collection	17%	25,226,135	25,226,135	Not begun	Nil
2.	Cooperative MBONERAMIRYANGO	Gitega province	Coffee cherry collection	17%	24,579,990	24,579,990	Not begun	Nil
3.	Cooperative UBWIZA BW'IKAWA	Kayanza Province	Coffee cherry collection	17%	66.965.000	66.965.000	Not begun	Nil
4.	Cooperative KAZOZA N'IKAWA	Kayanza Province	Coffee cherry collection	17%	20,348,000	20,348,000	Not begun	Nil
5.	Cooperative KANOVERA	Bubanza province	Coffee cherry collection	17%	13,400,000	not yet	Not begun	Nil

### Activities Planned for the Fourth Quarter

1. Close out of the BAP Small Grants Program; complete all documentation of grants in TAMIS, Review all grant agreements for completeness including required grantee reports and deliverables.
2. Work with component leaders and beneficiaries St. Ferdinand, SIVCA and the dairy farmer Association DUKAMIREHAMWE, to complete their business plans. Grant dossiers must be evaluated, funded and closed out by August 2012.
3. Continue to monitor dossiers for credit approved under the DCA, especially the coffee cooperatives that have recently received credit.
4. Data collection to document the impact of the BAP small grant program and IBB lending program under DCA, for the annual and final BAP project reports.

# Clean and Productive Environment

## Introduction

BAP Clean and Productive Environment Staff pushed forward this quarter on bringing effluent control and hygiene infrastructure construction to completion at partner coffee washing stations. The second phase of water sampling for the 2012 coffee season took place this quarter under BAP's physico-chemical water analysis activity, which will inform the effectiveness of the effluent control infrastructure promoted by BAP. Twenty-three coffee washing stations have been identified for sampling and evaluation; 18 with waste water treatment infrastructure and five stations with no water treatment acting as controls.

The community drinking water system at Kigoganya in Kayanza Province moved ahead this quarter with the arrival from Kampala, Uganda, of the HDPE pipes required to connect the system to the motor pump. The pipes are being installed and the first test of the water supply system should occur during the last week of July 2012.

## Activities undertaken during Q3

### Effluent Control and Sanitation around Coffee Washing Stations

BAP continued to monitor and push for the completion of construction of effluent control infrastructure at new partner coffee washing stations (see table below). This includes monitoring the water recycling activity which BAP is piloting at three washing stations; Teka, Butemba and Gatara.

**Table 1:** Construction Progress - Effluent control, sanitation and water recycling systems at new partner

Partner Coffee Washing Stations		Location	Operator/Owner	Solid & Liquid Effluent Control Infrastructure	Block Latrines & Hand Washing Facilities	Water Recycling System
1.	SDL Gatara	Rango, Kayanza	Sogestal Kayanza	50%	50%	50%
2.	SDL Butemba	Musongati, Gitega	Sogestal Kirimiro	85%	100%	75%
3.	SDL Teka	Mbuye, Muramvya	Sogestal Kirimiro	50%	85%	50%
4.	SDL Wingoma	Butihinda, Muyinga	Cooperative Nkamwayacu	25%	25%	
5.	SDL Kavugangoma	Mwakiro, Muyinga	African Promotion Company (APROCO)	100%	100%	
6.	Mini-SDL Mpemba	Matongo, Kayanza	Cooperative Kazoza n'Ikawa	50%	75%	
7.	Mini-SDL Kibimba	Giheta, Gitega	Cooperative Mboneramiryango	50%	50%	
8.	Mini-SDL Kinzobe	Commune et Province Kayanza	Cooperative Dusangirijambo	50%	50%	
9.	Mini-SDL Ntamba	Musigati, Bubanza	Cooperative Kanovera	25%	50%	

coffee washing stations.

### Coffee Washing Station Wingoma

The Coffee Washing Station Wingoma owned by the Cooperative Nkamwayacu is the newest grant recipient among the mini-washing stations to install effluent control infrastructure. By the end of this reporting period each section of the infrastructure was in place. This private station began operations during the current coffee campaign. The station has a 'mixed' water supply system meaning the station is fed by both gravity (water flows from a spring source at an elevation higher than the storage holding tank) and by motor pump (water is pumped from the holding tank to the depulping unit to treat the coffee).

The solid and liquid waste treatment system is currently operational and is composed of:

- A concrete channel which separates liquid and solid waste then diverts the solid waste to the pulp pit and liquid waste to treatment tanks;
- A covered pulp pit with a capacity of approximately 300 m<sup>3</sup>;
- Liquid waste treatment tank system (settling, filtering, purifying, re-oxygenation) with a capacity of 160 m<sup>3</sup>;
- A six cabin block latrine with separation wall between the men's and women's cabins (3 for each sex). The latrines are meant to serve farmers, washing station workers and visitors during the coffee campaign but with proper maintenance they could be used by the public year round;
- Hand washing facilities (a faucet connected to piping from an elevated plastic water storage tank) is in place but continued awareness raising is needed to convince washing station managers to make soap available to users. There may be an (understandable) concern about theft as, even at 200 FBU (15 ¢) per bar, constantly replacing a bar of soap can become costly and time consuming.

### Coffee Washing Stations BUTEMBA ET TEKA

Effluent control construction at washing stations Butemba and Teka are nearing completion. The systems are estimated to be 95% complete at each site (see construction status in Annex 1). The remaining work involves connection of the water recycling system and covering the pulp pit. Monitoring by BAP CPE staff indicates that the construction firm "Travaux Diverse" is managing both sites similarly (order of on-site projects, pace of completion etc.). Despite an equal rhythm of work, the construction calendar is delayed. The delay is due largely to a lack of oversight by the Sogestal Kirimiro of both the engineering firm and the construction calendar. BAP will work closely with Sogestal Kirimiro to ensure the remaining work is completed next quarter.

Preliminary results of both the Teka and Butemba sites are:

- (1) air pollution (odor emanating from the fermenting mucilage) is noticeably reduced;
- (2) waste water from the stations are being effectively pre-treated before discharge into the environment (the river down slope of both stations).
- (3) The pulp stored in the covered pit is ready to be converted into organic fertilizer for surrounding farmers;
- (4) The quantity of water used at each is station is estimated to be reduced by 20%;
- (5) the area on the immediate property of the washing station is noticeably cleaner than before.



Photos 3&2 : Bacs de traitement des effluents liquides de

Photo 3 : Bloc latrines de Teka

Butemba et Teka

### Coffee Washing Station GATARE

By 30 June, work on this system had achieved 98% completion at the CWS Gatare of Sogestal Kayanza. Work completed include: solid and liquid waste treatment infrastructure, the plant filter, which filters water exiting the liquid treatment reservoirs before distributing it back into the environment, and the 6 cabin block latrine. Remaining work includes connecting the water recycling system to the motor pump and installing the drainage system in the liquid treatment tanks<sup>3</sup>. System construction at Gatare has also exceeded the original timeframe due to a brief stoppage of work. The excavation for the installation of the underground water storage tank for Gatare's water recycling system flooded after hitting the water table. The engineer and the Sogestal met to discuss (and finance) a solution and determined that a cement slab would be constructed and stilled as a lining to the bottom of the pit.

The photos below show the progress of the work during the second week of June 2012. The block latrines were operational at this time.



<sup>3</sup> The movement of water from one tank to the next and ultimately out of the treatment tank, is accomplished when a sufficient quantity of water flows through each reservoir. At the end of the coffee season, the water must be drained from the 1<sup>st</sup> tank through a valve or secondary exit point.

## Water Recycling: Pulp Separation, Collection Tanks and Motor pumps

Safeguarding water resources at coffee washing stations is one of the deliverables of the component. BAP outreach efforts have consistently delivered the message that water is a vital and irreplaceable public good. Coffee washing station owners have a particular responsibility to be good stewards of water by not using more than is required to process cherry, to ensure they are using water efficiently and to be open to adopting new technologies to reduce their water usage. Washing stations using the McKinnon depulper use large amounts of water amounting to 20 liters per kg of cherry processed or up to 200 m<sup>3</sup> per day for a washing station that processes 10 tons of cherry on average per day.

For this reason, BAP's work plan called for piloting water recycling technology in PY5 where a portion treated waste water is collected and was recycled back into processing water inflows. Water recycling will help reduce water consumption and limit the amount of water flowing through the treatment system; as these treatment systems can be overwhelmed and compromised during high volume seasons.

The efficiency of the recycling circuit is highly dependent on the efficiency of the pulp separator. An effective separator will have:

- A smooth concrete channel with size and slope adequate to avoid clogging;
- A properly sized separator with respect to the surface area, the mesh size and slope of the lattice must permit easy access to the separator in order to allow regular cleaning throughout the pulping season
- The cleaning operation is normally performed at night and thus adequate lighting must be provided;
- A pulp pit located below the separator should allow for easy removal of the pulp dropping from it.
- The processing water that passes through the lattice of the pulp separator is directed to a plastic collection tank from which a motor pump returns it to a re-circulation tank. Care should also be taken to ensure the collection tank is equipped with an overflow channel that can direct excess water to the treatment tanks.

Despite the fact that water is plentiful at these particular sites, international buyers in the specialty market as well as coffee quality certifications are increasingly requiring environmental protection measures at coffee washing stations with whom they intend to do business or certify. BAP estimates that water recycling can reduce the amount of waste water used during cherry processing approximately 30%

## Treatment of Liquid and Solid effluents and Sanitation around Mini-Washing Stations

Cooperative owners of the four mini coffee washing stations began operating their washing stations during this coffee campaign. Mini-washing stations Mpemba (Cooperative Kazoza N'Ikawa), Karinzi (Cooperative Dusangirijambo) and Korane (Cooperative Mbonamirjango) have installed the Penagos

UCBE1500 EcoPulper. Mini-washing station Ntamba (Cooperative Kanovera) is using a micro-depulper from McKinnon. Both depulpers have very low water consumption (.5 m<sup>3</sup> per ton of green coffee vs. 20 m<sup>3</sup> per ton using a traditional McKinnon depulper) and therefore discharge a minimal quantity of waste water into the environment.

All mini-washing station owners have received technical assistance and training for the treatment of solid and liquid effluents and maintenance of their systems. Cooperatives Dusangirijambo and Kazoza N'ikawa have completed construction on their treatment systems and put them into full operation this season while the remaining three are at approximately 95% completion. Cooperatives Dusangirijambo and Kazoza N'ikawa reported - and coffee buyers observed during the June 2012 buyers tour - very clean parchment which they attribute to the use of clean water. BAP CPE staff observed that solid effluent management was satisfactory.

At CWS Korane, the cherry volume this campaign was high and thus required more funds than projected for operations. This led them to diverting a portion of BAP's contribution under the grant for construction material for the effluent control system, to complete some remaining construction on the washing station. Cooperative Mboneramiryango will be required to reimburse the value of these materials to BAP during Q4.

Effluent management at mini washing station Korane was not according to standards established for a mini-washing station. Mucilage was put on the cooperative's banana fields as fertilizer, and liquid effluent was diverted to soak pits and mixed with lime to reduce acidity.

The table below shows the quantity of solid and liquid effluent treated at the three mini-washing stations and CWS Ruhoro, owned by Cooperative Ubwiza bw'Ikawa.

**Table 1:** Cherry received and treated at three mini washing stations ant at CWS Ruhororo

N <sup>o</sup>	Site	Qty of Cherry (Kg)	Qty of pulp treated (Kg)	Estimated Qty of water (l) per kg of pulp
1	Karinzi	307,618	132,276	15
2	Korane	305,000	131,150	15
3	Ruhororo	596,000	256,280	30
4	Mpemba	140,389	60,367	7
	Total	1,349,007	580,073	67

### Physico-chemical analysis of Liquid Effluents

The assessment of pollution in waste water is determined by testing for the presence of a number of physical and chemical parameters. Among the targets established under the BAP Clean and Productive Environment activity, is the reduction of environmental pollution. Measuring the impact of waste water

treatment infrastructure correlates to a reduction in the presence of a number of these parameters in water that has been treated by these systems.

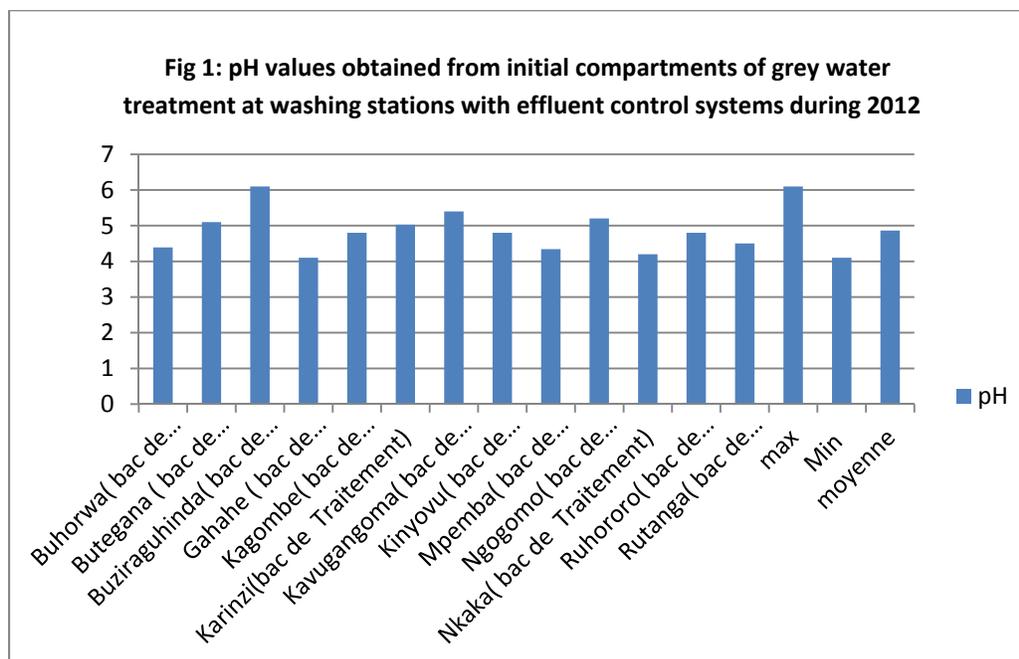
Water samples were collected at 18 partner coffee washing stations with the BAP promoted model of solid and liquid effluent control and sanitation installed and 5 stations with no effluent control system.

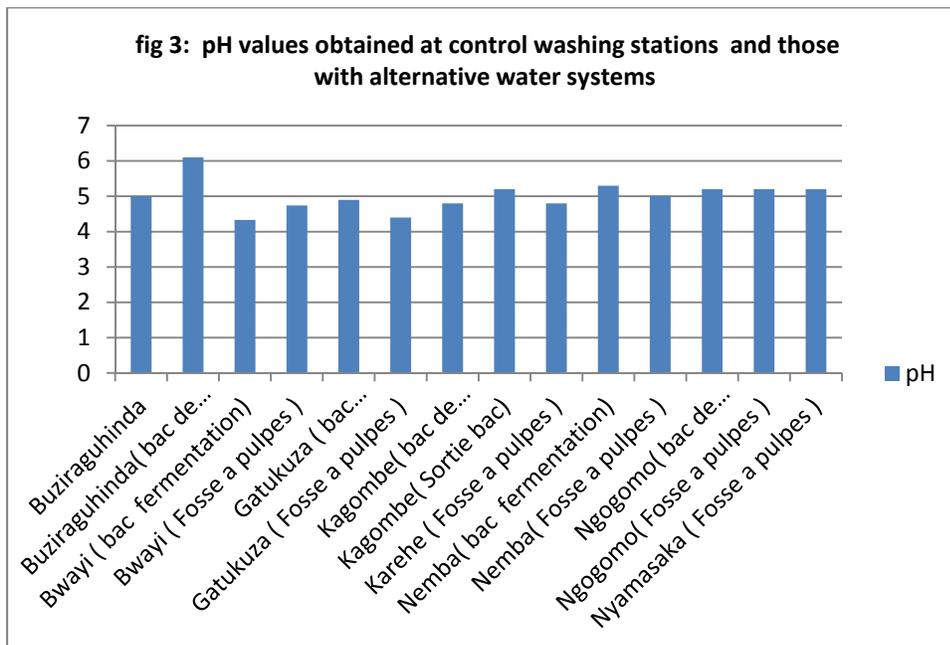
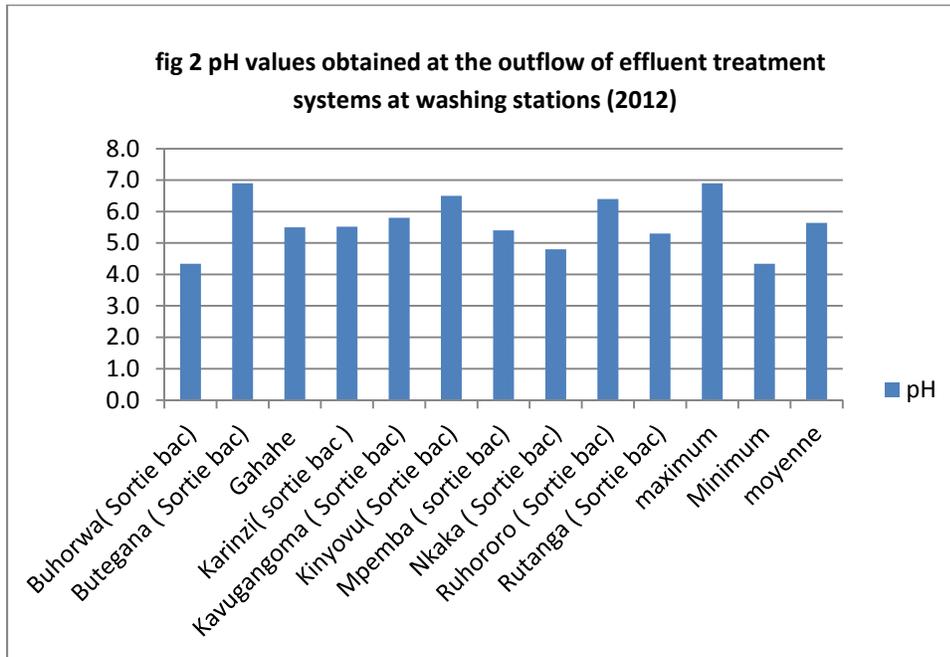
### Acidity

Upon analysis, the pH values of the water in the treatment tanks show a pH value of 5. The pH level of water exiting the treatment tank is slightly higher at 5.5. This slight increase is attributable to the presence of lime which is added to the last two reservoirs of the treatment tank (purification tanks). Lime should be changed in the purification reservoir at least once a week. Mini-washing stations should use a 40 kg bag and traditional sized washing stations should use at least 80 kg during the coffee campaign depending on volumes of cherry being processed and length of the season.

Three washing stations returned unsatisfactory results of their water analysis, due in part, to the incorrect or non-use of lime. CWS Buhorwa (Sogestal Kayanza) and Rutanga (Sogestal Ngozi) did not supply sufficient quantities of lime to their washing station managers and thus they used an insufficient quantity for the campaign. In the case of CWS Nkaka, Lime was available however WebCor assigned a new CWS manager but did not provide training or information on the effluent control systems, in place. In all three cases, water analysis returned pH levels much lower than expected.

On the contrary CWS Butegana (WebCor), Kinyovu (Sogestal Kayanza) and Ruhororo (Cooperative Ubwiza b'lkawa) incorporated the use of lime into the regular maintenance of their systems and observe pH's of 6 and 6.5 for wastewater in the first three reservoirs of the treatment tank and its exit point, respectively.

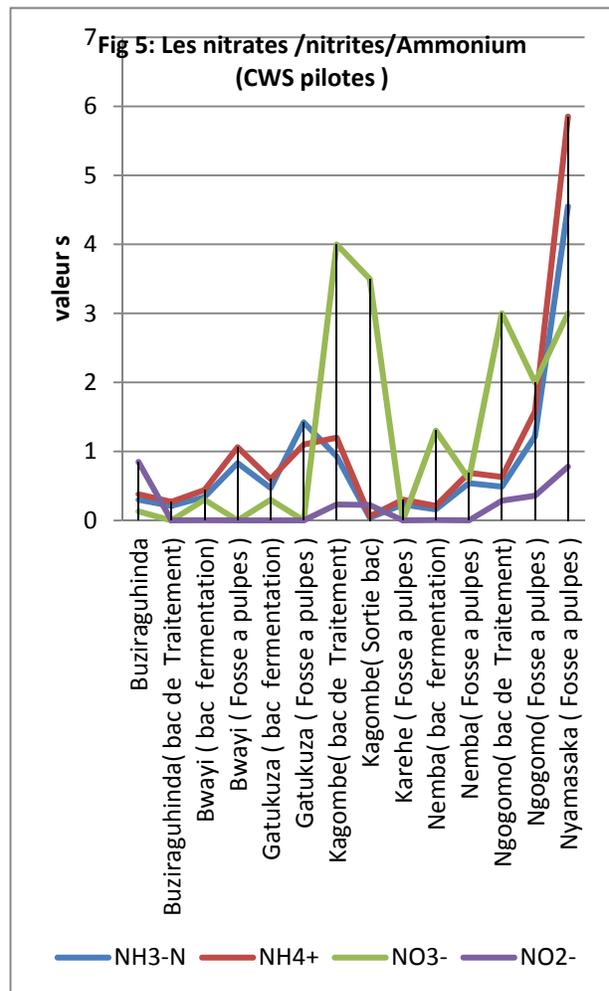
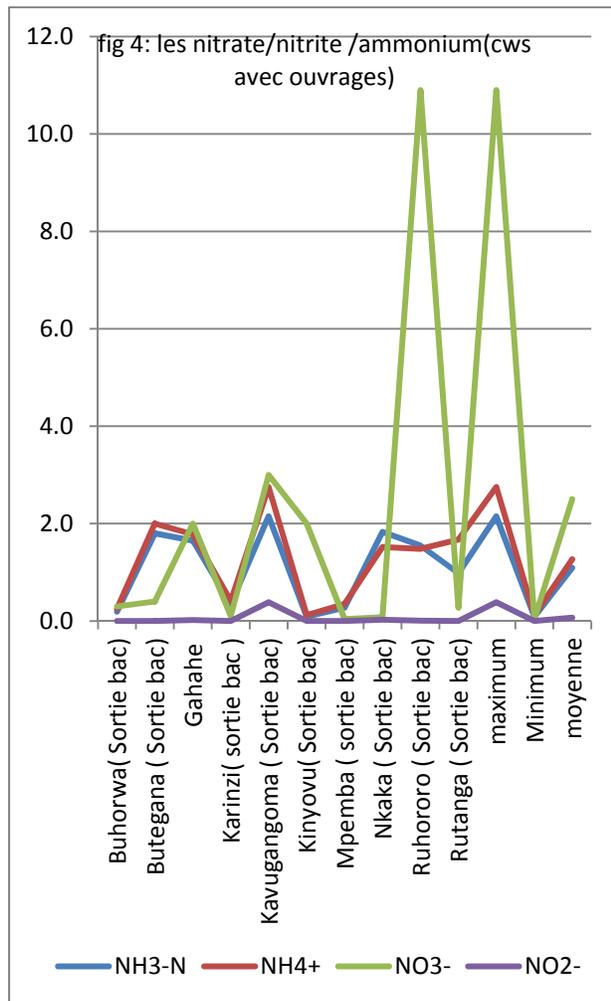




pH values taken from the fermentation tanks and pulp pits at various pilot washing stations present a danger to flora and fauna as their ranges at 5 and below, levels which are directly lethal to fish, can burn field crops and can prove harmful to drinking water in downstream communities.

### Elimination of Nitrogen By-Products

Concentrations of nitrates recorded at stations with effluent control infrastructure are relatively high compared to those observed in pilot stations (see Fig. 5). This is explained by the relatively insufficient period of time that waste water spent in the treatment tanks due to high volumes of cherry being processed this campaign. The small quantities of nitrogen could not be removed from wastewater due to this reduced time. These impurities are expected to be removed by the plant filter where nitrogen affixes to the roots of the plants and allows water to pass through into the surrounding environment. To meet the discharge standards in sensitive areas (proximity to valleys, streams and rivers) complementary treatments must be implemented.



At pilot stations (see Fig 4), the nitrate level did not vary significantly due to the availability of oxygen, whose presence promotes active mixing of the waste waters. The additional time that these effluents pass exposed to the open air in the pits, supports this assertion. For stations Nkaka and Rutanga, the infrastructure is not accomplishing this task and the oxygenation stairs are not playing their role.

The comparison of the average concentration of nitrates in the analyzed wastewater with the standard of water quality for irrigation (concentrations below 50 mg/l), the quality of the water exiting these stations show they are not yet at levels acceptable for release into marsh ecology and groundwaters.

### **Analysis of Organic Pollution**

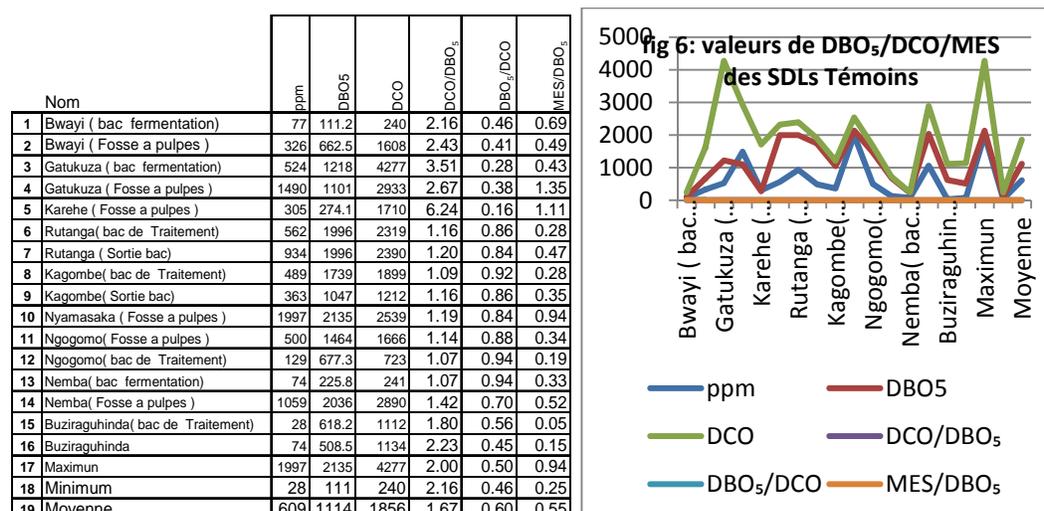
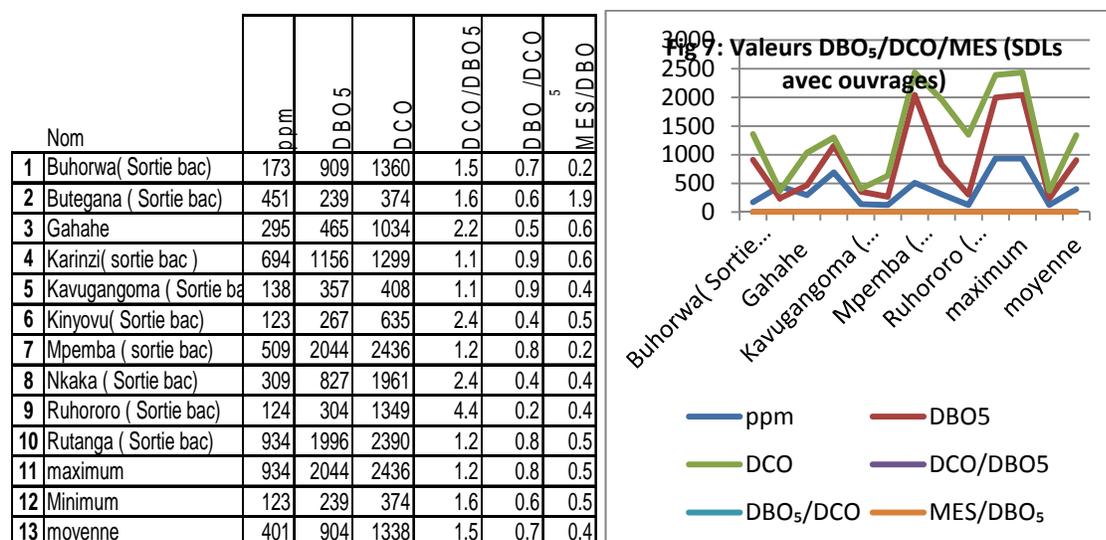
The indices of organic pollution- Biological Oxygen demand and Chemical Oxygen demand (BOD5 and COD respectively) are indicators of the amount of rejected organic material. Values recorded at different sites show a high load of organic matter. High oxygen demand in the water due to the fermentation process creates oxygen deficit wastewater.

The BOD5/COD is on the order of 0.6 to 0.7 (see table 2). These results support the conclusion that the water at the outlet of the processing units is polluted by a fairly strong organic pollution. In addition, the report DCO/DBO5 and MES/DBO5 is at 1.5 and 0.4 respectively, which are slightly higher values. This indicates that the material in the wastewater is readily biodegradable. However, high levels of MEST can prevent penetration of sunlight, reducing the presence of dissolved oxygen, thereby limiting the development of aquatic life and creating imbalances between various species. They may be responsible for the suffocation of fish by clogging their gills. The average levels vary between 904 and 1114 mg / l BOD5 and 1138 and 1856 mg / l of COD. Such high rates of COD BOD5 show a large amount of oxidizable material requiring further action in terms of oxygen enrichment.

In spite of this, the wastewater discharged directly into the receiving environment has the characteristics of domestic wastewater (COD / BOD<sub>5</sub> less than 3), based on the COD / BOD<sub>5</sub> level, it can be deduced that these organic materials are readily biodegradable.

### **Ratio of DCO to DBO<sub>5</sub> for Waste Water Dumping into the Surrounding Environment – Pilot Coffee Washing Stations**

For stations with effluent control systems in place, the lower values of BOD<sub>5</sub> compared to those at the control sites can be explained by the presence of 'oxygenation stairs'. These stairs mean water moves more slowly into the groundwater and the length (number of stairs) and slope allow the maximum amount of waste water to aerate and reoxygenate thus achieving a lower average value (500 mg / l is the limit acceptable for direct discharge). Coffee washing stations Kinyovu, Ruhororo, Kavugangoma, Gahahe and Butegana all have acceptable values meeting this standard. This means that even though the purification process was not fully complete, the effluent control systems constructed do help reduce environmental pollution around these coffee washing stations. The process should be extended by digging ponds at sites that where additional remediation is indicated.

**Table 2 : Degré de pollution des eaux usées aux stations témoins****Table 3 : Ratio DCO/DBO<sub>5</sub> pour les eaux usées à rejeter dans le milieu récepteur pour les stations avec ouvrages**

The lagoon is a biological purification system into which wastewater can be discharged in several successive shallow basins, where natural decomposition of the biomass occurs converting it into organic matter. The polluting material removed from wastewater is found largely in the roots of surrounding vegetation, accumulated in sediment, and some released into the atmosphere as methane and nitrogen gas.

### Odor

The treatment of coffee cherry produces odors which are sometimes perceived as a nuisance to the surrounding community. The main source of the odors is decomposing organic matter. The tolerance of these odors is subjective and no standards for “smelly emissions” exist. However, the effluent control system installed by BAP has virtually eliminated these odors by designing an immediate separate of

liquid and solid effluent into the infrastructure permitting dry down of the pulp rather than continued fermentation.

### Visit from USAID Environmental Consultant Ms. Jane KAHATA

Ms. Jane Kahata, environmental consultant to USAID/Nairobi, traveled to Burundi last quarter to conduct an assessment of BAP's environmental protection activities. Accompanied by BAP CPE staff, Ms. Kahata, visited CWS Gahahe owned by Webcor which received BAP grant funding to reduce environmental pollution at the station. Ms. Kahata heard explanations of and observed examples of BAP's water and hygiene component aimed at establishing best practices for environmental protection around the coffee washing stations. Verifiable indicators on the positive impact of effluent control infrastructure were provided such as:

- Elimination of odors emanating from decomposing coffee pulp
- Elimination of odors from the liquid effluents due to use of the filtration/purification system
- Additional pollution controlled biologically through the use of a plant filter which utilizes pollutant-fixing plants
- Treated water is returned to the environment at a pH well above 5 (vegetal burn)
- Producers and workers have access to on-site sanitation and hygiene facilities where before they had none.

Ms. Kahata was curious to know whether BAP transferred skills and technical knowledge to coffee washing station staff/managers on using the results of waste water analysis to continue environmental control efforts. BAP explained the results are shared with all washing station managers and staff participating in the study in addition to written reporting. Trainings are also conducted through workshops with the technical manager and washing station manager to assist them in proper upkeep, maintenance and management of the systems.

### Construction and Rehabilitation of Community Drinking Water Systems

#### Kigoganya

During this quarter, the engineering company PFC supplied the HDPE and PN 16 pipes which were on order from Uganda. Sixteen (16) rolls of 100 m each were delivered to the construction site. The Community surrounding the Kigoganya water system had waited patiently for these pipes to arrive. They quickly mobilized, digging an additional 3,820 linear meters of trenching to ensure a proper installation of the pipes (the community had already dug 1600 linear meters). An average of 50 people per day volunteered to complete the digging. Once the pipes are connected, the system will be tested in July 2012.

#### Kinyovu

The Community surrounding the Kinyovu drinking water system has taken over management of their multi-use water system network. As designed, user fees are collected from the community and are deposited in an account at a local MFI, to create a maintenance fund to ensure sustainable water supply for all users. Heavy rains in April and May this year destroyed a section of the network that supplies Gitwe hillside leaving the primary school and residents of the hillside without drinking water. The water

management committee authorized withdrawal of funds from the community savings to purchase piping and to pay the communal technician, Ndabunganiye Pierre, to repair the system. The repair of the system included an in-kind labor contribution by the residents of the Gitwe in digging the trenches. This intervention demonstrates the maturity of the Kinyovu community and an early success in the promotion of community ownership and management of assets for community development.

### Problems and Constraints Encountered

1. Delays to completion of effluent control systems - co-financing the construction of the systems at Butemba and Teka proved difficult due to the inability of the Finance Manager of Sogestal Kirimiro to produce a financial report and produce proper expense justification for reimbursement. CWS Gatare construction was impeded by a late start, heavy rains during the construction period and difficult topography (the site was close to a marsh which made deep excavation difficult).
2. The performance of some effluent control systems were less than satisfactory for a variety of reasons that all point back to ineffective management. Some washing station managers were unaware of the proper procedures for proper system maintenance (as in case with CWS Nkaka) and others did not use the required material properly (Buhorwa and Rutanga).
3. Some BAP partner-users of effluent control systems do not appear to attach due importance to the protection of the environment around their coffee washing station (example Sogestal Ngozi on SDLS Rutanga, and Gitwa Rwintare; Nkaka for Webcor and Buhorwa for Sogestal Kayanza).
4. Planning the Future Company (PFC) demonstrated a serious lack of professionalism in ensuring the timely complete the Kigoganya water supply system. Little/insufficient explanation was given for why the enterprise experienced a delay of than 2 months in receiving pipes ordered from Uganda.
5. The construction supervisor PAIHAR, responsible for providing progress reports and solutions towards problems/constraints on the construction sites, routinely submits reports that are of poor quality, lacking substance and that are submitted late.

In the future, when faced with similar delays in construction, an important lesson learned is to consider re-bidding the work instead of trying to negotiate with the current contractor. This is particularly true with difficult firms such as PFC and PAIHAR.

6. The mini coffee washing station owned by Cooperative Kanovera was not able to benefit from their effluent control infrastructure unlike the other mini-washing stations during the 2012 coffee campaign. All construction work is expected to be completed in the following quarter.

## Recommendations

1. Track, monitor and ensure provisional and definitive acceptance of the community drinking water supply network Kigoganya during Q4 in order to close out the FPPO.
2. Organize a targeted training session for the water management committee of Kigoganya to prepare for system taken over next quarter;
3. Summarize and share results of the mid-season water analysis with project partners and ensure understanding of required procedures necessary to obtain positive results;
4. Collect water samples for analysis of Phase 3 "after the campaign" water analysis
5. Apply pressure to PFC and PAIHAR to accelerate completion of and final reporting for the Kigoganya drinking water system.

# Burundi Business Incubator

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## Introduction

The end of this reporting period coincides with the 2<sup>nd</sup> anniversary of the BBIN ASBL's legal recognition by the Government of Burundi. This quarter the BBIN launched the second round of the Shika Business Plan competition, offered pre-incubation services to two new enterprises and opened their pre-incubation to students with entrepreneurial ideas choosing to develop business plans while continuing their studies. A meeting/training session was held for 8 business mentors and coaching of clients began soon thereafter. A meeting of the incubator selection committee resulted in five enterprises being accepted for incubation, three of whom will be residents and two of whom have selected an affiliate status. A five month action plan was developed for each of these clients to assist them in resolving constraints linked to their individual needs. In order to assist in resolving client expressed needs for financing, the BBIN, during this quarter approached two banks to discuss potential solutions- the BCB and the BNDE. Further a conference related to the theme entitled Business angels and Access to Financing was facilitated by Dr. Eric Ngendahayo, a Specialist in International Finance. Training continued, but the intensity of participation was somewhat diminished and the number of Business Edge Courses planned for facilitation lagged behind projections. Finally, during this quarter BBIN participated in a conference entitled Growing Business and began its outreach to the rural provinces.

## Executive Summary of Results

Performance Indicator	Accomplishments during the reporting period	Accomplishments during PY5
# of clients benefitting from enterprise development services		
# of preincubatees	3	23
Incubation clients (Hotdesk)	1	1
Resident Incubation clients	2	2
Affiliate Incubation clients	2	3
New Commercial Renters		6
<b>Financial Accomplishments</b>		
Total Sales (FBU)	55,330,400	117,591,700
Total Expenses (FBU)	69,119,574	132,347,370
Endowed Funds @30 June 2012		275,997,983
# of Training participants	85	265
First Steps	9	48
Business Concepts(BCC)	7	46
Business Plan	31	94
Ready for Finance		10
Inform yourself for Better Decision Making (BE)		19
Improved Service to Clients (BE)	7	18
Master your costs (BE)	8	8
Communicate Effectively (BE)	10	10
Develop your Competitive Strategy (BE)	12	12

## Activities undertaken during Q3

### Incubation

BBIN cooperated in assisting two new enterprises during this quarter “Champion” an enterprise that seeks to provide catering services for receptions and “Mugisha Conception”, an enterprise specializing in design.

The second phase of the Shika Business Plan Competition was launched on 10 May and the pre-selection of the 20 best business concepts to be developed into business plans took place during the month of June.

The client selection committee met for the first time at the end of April and accepted five new enterprises for incubation. The principal criteria for selection was the potential for job creation as exhibited by their business plans.

No	Entrepreneur	Enterprise	Focus Area	Status
1	Bernard RUBARIKA	BUMOCO	Moringa by products	Resident
2	Chantal NTIMA	NIYON AGRO	Mushrooms	Affiliate
3	Thierry NTAKO	OPEN IT	Health Programming	Affiliate
4	Prosper NIYONSABA	TROPICAL FARMS	Japanese Prunes	Resident-Hot Desk
5	Natacha SONGORE	INSPIRES U	Events and Communications	Resident

A meeting of mentors resulted in the assignment of mentors to the businesses to provide coaching and to act as a sounding board in assisting these enterprises to become firmly established.

### Improving Access to Financing

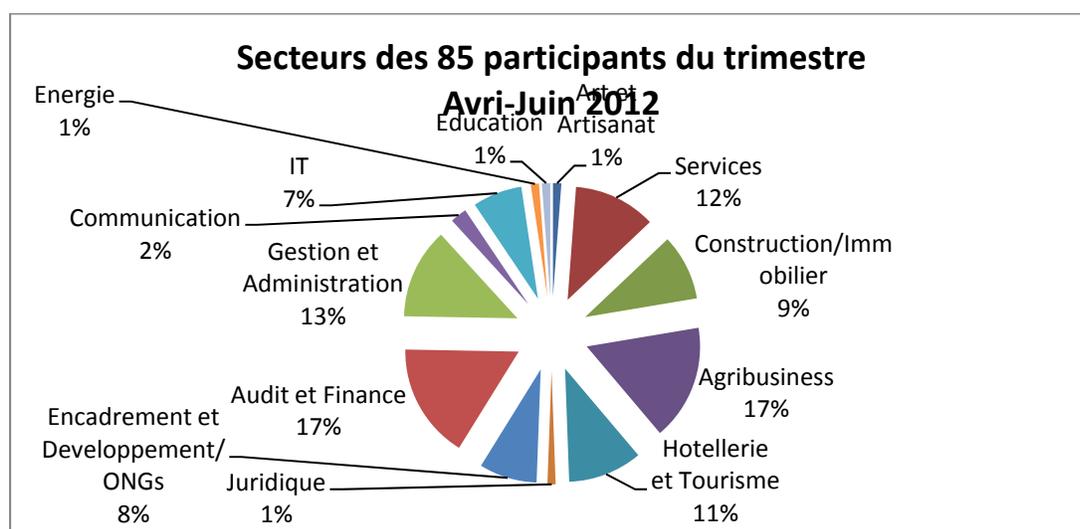
BBIN is not an institution that finances its clients. However, the BBIN continually receives requests from clients to assist them in finding financing. The majority of BBIN’s Shika winners requested financing from the BNDE. The BNDE very much appreciated the quality of the business plans but did not consider them all to be financeable. It is evident that nascent enterprises in need of financing, who do not qualify for commercial lending must seek alternative sources of capitalizing their enterprises. To this end BBIN facilitated two activities during this quarter. First, an international finance specialist Dr. Eric Ngendahayo was invited to host a colloquium to discuss the theme “Business Angels and Access to Financing”. A dozen people from different sectors (insurance, banks, public and private sector) attended this seminar. Second, BBIN staff with three Shika winners attended a regional seminar in Kigali which brought together a number of Business Angels interested in offering financial support to new entrepreneurs. BBIN also approached the BCB and the BNDE on this subject and it was concluded that a round table discussion on this subject would be hosted during Q4.

### Training Services at the BBIN

One of BBIN’s mandates is to develop the business management training market for private sector enterprises in Burundi. This has two components. First, to identify a cadre of people with specialized

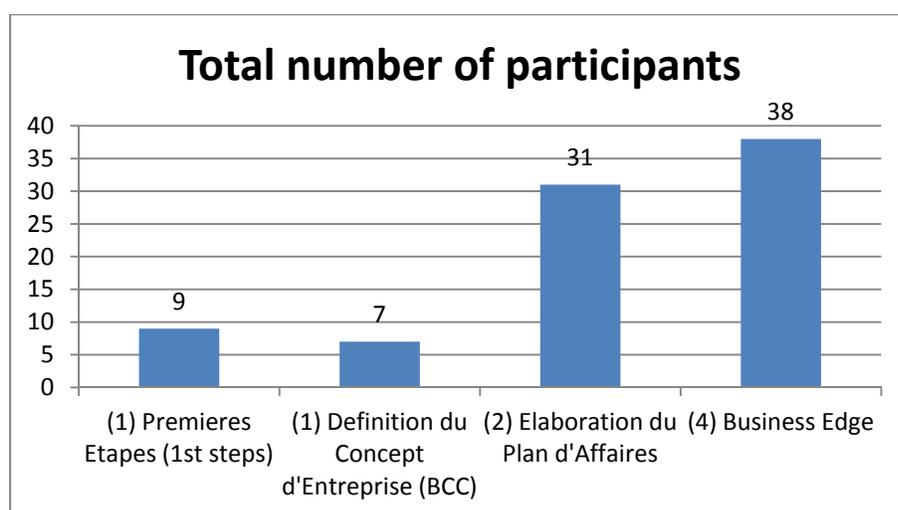
skills and experience who can be mentored to become trainers. Second, The BBIN will offer these trainers curriculum that can be adapted to the realities of Burundi and offered at commercial rates to entrepreneurs and other interested parties.

During the current reporting period BBIN hosted eight training sessions for a total of 85 participants, 35 (40%) of whom were women. These participants came from 13 different sectors and represented 43 different organizations, as can be seen in the figure below.

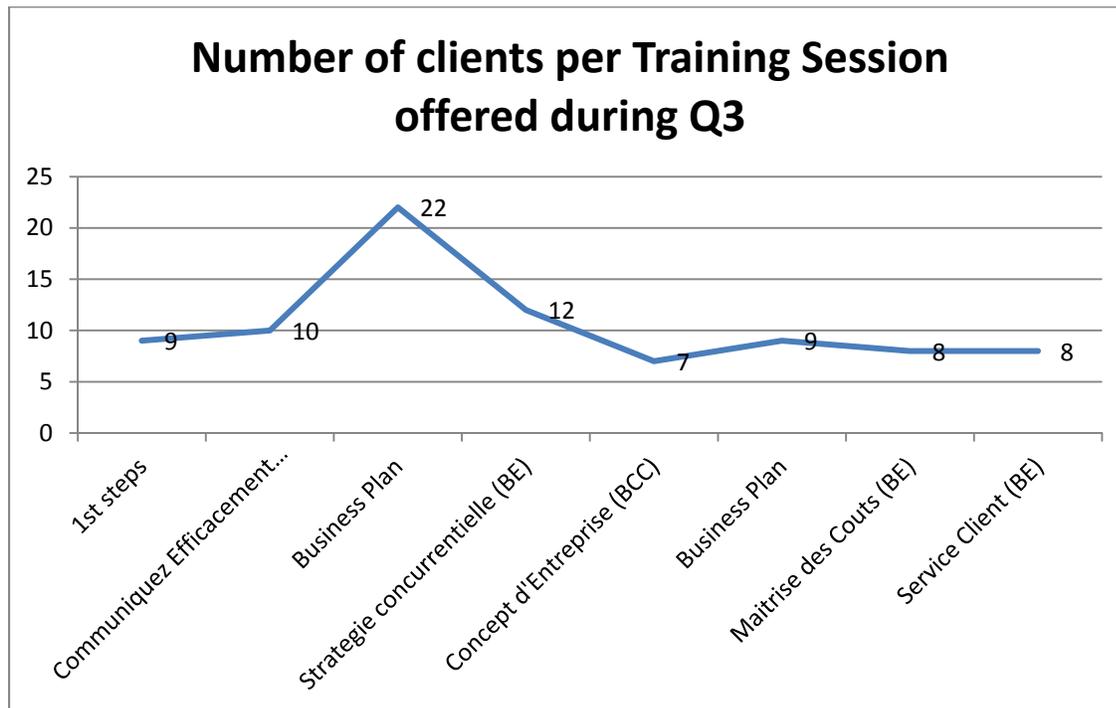


In addition to the classic curriculum of the BBIN, four Business Edge training modules were offered during this reporting period. These modules included the following topics:

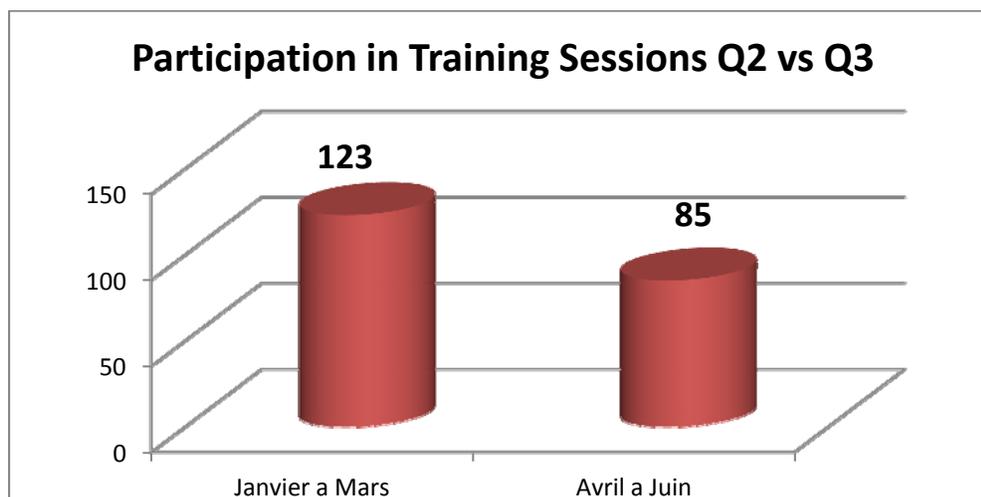
- Mastering your costs
- Improving service to clients
- Communicating Effectively and
- Developing a competitive strategy



The following figure tracks the progression of clients against the training modules being offered., over the course of this quarter.



This shows that the business planning course remains the most popular of BBIN's offerings. We do note, however, that the number of participants declined during Q3, relative to Q2, as is shown in the following figure. What is not clear, and what must be explored is why this dynamic is occurring as, should it continue it will have a negative effect on BBIN's ability to achieve operational viability.



### BBIN Outreach to the Rural Provinces

Sensitive to the priorities expressed by the BBIN's dual financiers USAID and the Dutch Ministry of Cooperation to reach beyond Bujumbura in offering services to private sector clientele in the interior of

the country, BBIN has begun discussions with IFAD concerning collaboration on their new project related to the creation of youth employment in Bubanza Province. Further, BBIN has entered into a partnering agreement with SPARK to assist in transforming 50 rural associations in the provinces of Bururi, Rutana and Makamba into formal sector private enterprises with the skills and competencies needed to be competitive in their respective markets. Finally, BBIN and COPED, together with SPARK are collaborating to develop a shared use innovation center in Rumonge.

### **Governance and Founding Member Appropriation of the BBIN**

Following on recommendations from the founding member's retreat in Kayanza, the BBIN transmitted the minutes of this meeting together with an annex documenting impact of the BBIN to date to donors and the 2<sup>nd</sup> Vice President's office. The President of the board together with the BBIN director then followed up with individual meetings to express thanks, clarify points in the different documents and solicit further assistance to facilitate the resolution of a number of constraints the BBIN has faced.

### **Marketing of the BBIN**

During this reporting period BBIN marketing activities included:

- Publication and electronic transmission of a monthly newsletter
- Promotion of the Shika Business Plan Competition using radio and television spots, newspaper articles and sponsorship of sporting events
- Organization of a number of presentations to universities, the chamber of commerce and youth organizations and, finally,
- Renewal of the content on the BBIN website to keep it current and attractive

### **Financial Viability**

BBIN currently is able to cover 77.4% of its operational costs with revenue generated by its different services. However there is currently a chronic gap between revenues and expenses on the order of 5 million FBU/month due principally to a lower intensity of training courses being offered, fewer clients for these training sessions and a wide gap between the anticipated number of pre-incubatees and incubatees and the actual number. BBIN is working hard to rein in its expenses and to up its revenue in order to close this gap.

### **Challenges**

- BBIN's fiscal status. OBR has determined that BBIN is a commercial entity and this must pay taxes, including TVA on its goods and services.
- The possibility of ceding the BBIN building complex to the ASBL remains complicated and unresolved. There is good faith to move forward, but there is a question of timing, status, terms and conditions all needing to be resolved between the principal actors. Without this facility it is difficult to conceive that BBIN will achieve operational sustainability and remain a viable enterprise capable of supporting Burundi's nascent private sector

- BBIN's clients have limited resources to dedicate for the payment of goods and services. This coupled with a moderate inflation rate, rising costs and the devaluation of the Burundian Franc against hard currencies is creating challenges for these new entrepreneurs
- Access to financing remains difficult for newly established entrepreneurs who may have viable projects, passion and the ability to provide sweat equity in the advancement of their enterprises but who remain cash poor and lack the classic guarantees demanded by Burundi's Commercial lending sector.

## Conclusion

After 1 ½ years of independent operation the BBIN appears to be progressing toward the achievement of its objectives- slowly, but surely. Incubation has truly commenced and the number of training sessions and qualified trainers has diversified. There is greater visible appropriation of the BBIN by its founding members and the BBIN is moving toward operational financial viability. Challenges remain and these will need to be progressively addressed over the coming months.

## Principal Activities planned for Q4

- The Executive Committee and BBIN Management Team will invest time to resolve definitively BBIN's fiscal status with the Ministry of Finance and OBR
- A Round table will be organized to discuss challenges of financing new entrepreneurs
- Increased marketing of Business Edge Curriculum
- Mentoring and Coaching of BBIN incubatees and Shika candidates will continue and be reinforced
- Closing out the first grant received from BAP by 31 October 2012
- Submission of a concept note to justify continued, direct donor support to BBIN over a transition period will be completed

# Conclusion

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The third quarter of this project year was a busy one for BAP with coffee harvest on-going, income generating activity grants in process, incoming buyers/roasters and importers; the start of operations at the second milk collection center and execution of second phase literacy activities. We also made a concerted effort to collect data from our clients and to present preliminary analyses on these data in this report. Negotiations for financing of the coffee campaign required a lot of attention from BAP as, even with the DCA in place Interbank was hesitant about financing cooperatives in a coffee sector under transition. Environmental sampling at washing stations with project installed effluent control systems continued as peak harvest occurred. Work continued on the community water system at Kigoganya and the construction of additional effluent control systems with latrines and hand washing stations at Teka and Butemba CWS in the Kirimiro draw zone. A number of success stories were documented and at the BBIN, the Shika 2 Business Plan competition was launched with an intensification of training modules from the Business Edge curriculum being offered. Mentoring services began for new incubatees and the NGO continued preparations for curtailing its grant with BAP as our program transitions into close down mode. Finally, we thank USAID for the confidence it has shown us in authorizing the two month unfunded extension- through November 30<sup>th</sup>.

# Annexes

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**1) Case Study on Coffee Certification**

**2) Horticultural Tables**

**3) Grants Tables**

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CENTRE DE RECHERCHE EN AGRICULTURE & DEVELOPPEMENT  
RURAL (CERADER)

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**PROJET DE RECHERCHE ACTION SUR L'ACCROISSEMENT DE LA  
PRODUCTIVITE DU CAFE, DE LA STABILISATION DE LA  
PRODUCTION ET DE CONTRÔLE DU GOÛT DE POMME DE TERRE**

**FINANCE PAR DAI / USAID**

**ETUDE DE CAS : COOPERATIVE DE KAGOMBE**



**MARS, 2012**

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**ABREVIATIONS**

BPA :	Bonnes Pratiques Agricoles
DAI :	Development Alternatives, Inc
Dt :	Dépenses au temps t
EAFCA :	Eastern African Fine Coffees Association
HLO :	Hired Labor Organization
Kg :	Kilogramme
Km :	Kilomètre
m :	Mètre
OIT :	Organisation Internationale du Travail
PAIR :	Programme pour la Promotion d'Agro-Industrie Rurale au Burundi
r :	Taux d'actualisation
Rt :	Recettes totales au temps t
SMBC:	Smithsonian Migratory Bird Center
SODECO :	Société de Déparchage du Café
SPO :	Small Producer Organizations
SIDA :	Syndrome d'immunodéficience acquise
TCB :	Tanzania Coffee Board (TCB)
VAN :	Valeur Actuelle Nette
VIH :	Virus de l'Immunodéficience humaine
t :	Test t de Student
% :	Pourcentage

## **RESUME EXECUTIF**

Une étude a été conduite à la station de Kagombe dans le but de voir si le programme de certification du café par UTZ Certified avait des effets positifs sur l'accroissement de la production du café et la réduction de sa cyclicité.

Pour bien mener l'étude, la station de Rugerero était choisie comme référence. Les deux stations de Kagombe et Rugerero sont localisées respectivement dans les communes de Mwakiro et Gashoho en province de Muyinga au nord du Burundi et toutes appartenant à la région naturelle de Bweru.

L'enquête a été menée auprès de 153 caféiculteurs qui étaient choisis aléatoirement dans les stations de Kagombe et Rugerero, respectivement 90 exploitants et 63 exploitants.

L'étude menée dans les deux stations a montré que la production du café était élevée chez les exploitants de Kagombe que ceux de Rugerero ; l'amplitude de variation était réduite chez les exploitants de Kagombe que chez les exploitants de RUGERERO. Cette étude a également révélé que les exploitants de Kagombe ont adopté des bonnes pratiques agricoles par rapport à ceux de Rugerero. La production du café chez les exploitants de Kagombe a augmenté après la mise en place du programme de certification du café.

L'analyse financière et économique de ce programme de certification du café UTZ a montré également que ce dernier est rentable pour les agriculteurs, la Sogestal Kirundo-Muyinga-SODECO.

Cette étude a révélé que le programme de certification UTZ permet également la protection de l'environnement et un bon suivi de la traçabilité du café.

D'une façon générale, le programme de la certification du café permet donc d'augmenter la production et de réduire la cyclicité du café à travers un meilleur encadrement des producteurs.

## **I. INTRODUCTION**

Le commerce international des matières premières, particulièrement du café, est actuellement caractérisé par une augmentation de la concurrence globale sur les principaux marchés d'exportation ainsi que par une forte volatilité des prix.

L'intensification de la concurrence en termes de prix et de la qualité des produits exige des producteurs agricoles une plus grande différenciation des produits afin de se démarquer des concurrents, de se positionner sur des segments de marché plus rémunérateurs et maintenir les débouchés. A côté du poids économique important que représentent les chaînes d'approvisionnement mondiales des produits de base, il existe des produits locaux de qualité spécifique qui bénéficient d'une bonne réputation et qui sont en mesure de trouver des marchés plus rentables ou plus stables, améliorant ainsi le revenu dans les zones défavorisées (Hinzen, 2010)

L'une des voies possibles pour accroître la valeur des exportations agricoles des pays en développement est la vente sur des marchés de niche à forte valeur ajoutée. Le café de spécialité, labellisé commerce équitable ou biologique, ou certifié UTZ CERTIFIED, en est un. Bien que le marché du café de spécialité soit relativement étroit par rapport au volume total du marché mondial du café, il connaît une croissance rapide et gagne en popularité auprès des consommateurs. Toutefois, pour être en mesure d'accéder aux marchés des produits de spécialité, les pays en développement doivent relever le défi de la conformité aux normes de certification.

### **1.2. Objectifs de l'étude**

Les bénéfices attendus d'un programme de certification comprennent : le renforcement des organisations de caféiculteurs en termes de bonne gouvernance et d'efficacité dans la commercialisation de leur café; une plus grande accessibilité des caféiculteurs aux services techniques, aux intrants, au crédit ; une grande productivité et de là plus de revenus disponibles entraînant plus d'investissement dans l'exploitation ou dans d'autres secteurs pour améliorer le bien être des membres du ménage.

L'objectif global de cette étude est d'estimer l'impact du programme de certification du café par UTZ certified sur l'augmentation de la production et la réduction de la cyclicité du café afin de formuler des recommandations visant à étendre ce programme de certification dans d'autres stations de lavage du Burundi.

Les objectifs spécifiques de l'étude sont :

- Estimer l'impact de la certification sur les revenus et les dépenses des ménages caféiculteurs.
- Evaluer les changements des caféiculteurs dans la perception de leur situation économique, la volonté d'investir, l'attitude face au risque et la confiance à la caféiculture suite au programme de certification.

## 2. METHODOLOGIE

### 2.1. Choix des stations

L'étude se déroule en province de Muyinga, province située au Nord-Est du Burundi entre 30°7' et 30°32' de longitude Est et 2°18' et 3°8' de latitude Sud. Sa superficie de 1836,26 km<sup>2</sup> ne représente que 6.5% de la superficie nationale. Elle est limitée au Sud par la province de Karuzi, à l'Est par la Tanzanie, au Sud-est par la province de Cankuzo, au Nord par le Rwanda, à l'Ouest par la province de Kirundo, au Sud-Ouest par Ngozi (carte 1). Du point de vue administratif, Muyinga est découpé en 7 communes (tableau 1).

Le point focal de cette recherche s'est portée dans les zones desservies par deux stations de lavage : Kagombe en commune Mwakiro et de Rugerero en commune Gashoho que les deux stations se trouvent dans les communes de la même région naturelle (Bweru) ayant une superficie presque égales, respectivement 155.26 km<sup>2</sup> et 159.52 km<sup>2</sup>.

Carte 1 : Découpage administratif de la province de Muyinga.

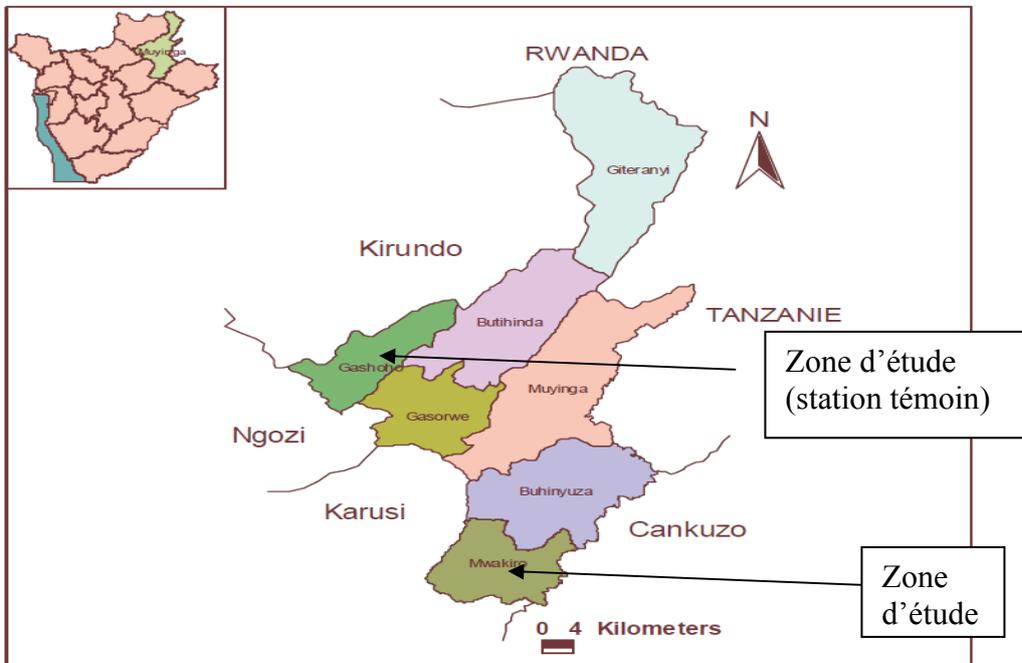


Tableau 1. Subdivision de la province de Muyinga

Communes	Superficie en km <sup>2</sup>	Nombre de collines
Buhinyuza	262.92	25
Butihinda	293.60	30
Gashoho	155.26	28
Gasorwe	187.20	29
Giteranyi	397.82	34
Muyinga	379.94	46
Mwakiro	159.52	29
Total	1836.26	221

La station de Mwakiro a été choisie parce qu'elle est la seule station de lavage au Burundi où le programme de certification du café est appliqué. La question posée est de savoir si le programme de certification du café appliqué présente des avantages comparatifs élevés en terme de l'augmentation de la production du café et la réduction de la cyclicité dans le but de pouvoir recommander son extension à d'autres stations.

Pour mener correctement ce genre d'étude, une zone de référence, ne pratiquant pas le programme de certification tout en ayant des conditions agro-écologiques similaires à celles qui prévalent dans la région de la station de Mwakiro, est nécessaire. Parmi les stations encadrées par la SOGESTAL Kirundo-Muyinga, 5 stations qui avaient une production élevée au cours de ces quatre dernières années, mis à part Kagombe, avaient attiré notre attention : Ngomo, Butihinda, Ndava, Kinyangurube et Rugerero. Cette dernière a été retenue avec l'appui et point de vue du Directeur de la Sogestal Kirundo-Muyinga.

## 2.2. Approche méthodologique

### **Comparaison.**

Pour bien appréhender l'impact du programme de certification sur l'application des bonnes pratiques agricoles et donc, sur la production et la réduction de la cyclicité caféière l'approche comparative a été appliquée. C'est à dire que les différences sont estimées entre les données de la station cible Kagombe et celles de la station témoin Rugerero

### **Analyse documentaire**

Pour les processus de certification en Afrique et les défis que posent les programmes de certification, des livres, rapports et internet ont été utilisés pour enrichir cette analyse.

### **Collecte des données secondaires**

Le recours à la SOGESTAL KIRUNDO, aux stations de Kagombe et Rugerero et aux coopératives respectives a été nécessaire pour comprendre l'évolution de la production de cerises et café sec selon les différentes catégories, appréhender les coûts initiaux pour la mise en place d'un programme de certification au niveau de la station de Kagombe, l'évolution des caféiculteurs vendant leurs cerises au niveau de ces stations, l'évolution des membres effectifs des coopératives.

**Observation in situ** : collecter les informations sur terrain, ce qu'on voit, ce qui est fait, la prise des photos, etc. ont été la clé de voûte pour la réussite de notre travail ;

**Entretiens** avec les différents acteurs impliqués dans le processus de certification du café notamment : Directeur général de la SOGESTAL KIRUNDO-MUYINGA, chefs de stations, agronomes présidents des coopératives, les autorités politico-administratives

### **Enquête auprès des caféiculteurs**

Une enquête ménage a été conduite auprès des caféiculteurs vendant leurs cerises à la station de Kagombe (90 caféiculteurs), ainsi que ceux vendant leurs cerises à la station de Rugerero (63 caféiculteurs). La taille de notre échantillon était donc de 153 caféiculteurs choisis aléatoirement parmi les caféiculteurs de chaque station.

Pour Kagombe où les caféiculteurs sont répartis en blocs (12 blocs) subdivisés en 74 groupes répartis dans les différentes collines, 6 blocs ont été choisis. Ces 6 blocs comptaient 31 groupes. Le nombre de ménages dans chaque bloc a été déterminé en fonction du nombre de groupes que compte chaque bloc. Pour bien couvrir toute la commune, la répartition de ménages au sein de chaque groupe a été faite en fonction du nombre total de ménages dans chaque groupe sur base de la liste des caféiculteurs qui étaient déjà inscrits pour la campagne 2012.

Quant à Rugerero, comme les caféiculteurs ne sont pas groupés en bloc, la liste des membres effectifs de la coopérative et les fiches d'enregistrement pour les non membres, ont servi comme base pour l'échantillonnage systématique.

### **2.3. Analyse statistique des données**

Les données collectées lors de l'étude ont été analysées statistiquement avec le logiciel SPSS 16.0 dans le but connaître les résultats pour l'interprétation.

## **3. RESULTATS**

### **3.1. Analyse documentaire**

#### **3.1.1. Certification**

La certification est une façon de démontrer au consommateur que le produit qu'il achète respecte les différents critères énumérés en BPA. C'est aussi un moyen d'éviter qu'un vendeur ou un torréfacteur de café (ou de tout autre produit) bénéficie de la renommée du commerce équitable pour vendre son produit plus cher. Néanmoins, le commerce équitable n'est pas le seul mouvement existant et d'autres organismes ont mis en place différentes certifications permettant d'assurer au consommateur que le produit a suivi des règles qui favorisent le développement durable.

En d'autres termes, la certification garantit que les règles et réglementations spécifiques des normes volontaires sont accomplies dans un certain environnement (par exemple producteur individuel, groupement de producteurs, une coopérative ou une même région).

Ces producteurs doivent répondre à certaines exigences - sociales, économiques, environnementales – la certification appelle pour une tierce partie indépendante la confirmation de ce statut, effectuée par un vérificateur accrédité. La plupart du temps, les certifications doivent être renouvelées sur une base annuelle.

#### **3.1.2. Types de certification**

##### **3.1.2.1. UTZ CERTIFIED Good Inside**

###### **3.1.2.1.1. Origine**

UTZ CERTIFIED est un programme de certification mondial qui plaide « pour une production et des achats de café responsables » en offrant « la garantie d'une qualité sociale et environnementale dans la production de café ». La Fondation UTZ est une organisation indépendante, à but non lucratif, dont le siège est aux Pays-Bas et au Guatemala. Le Code de conduite UTZ couvre trois domaines : les bonnes pratiques agricoles et commerciales, les critères sociaux au regard des conventions de l'OIT, et les critères environnementaux.

Il s'agit du programme UTZ Kapeh qui changé son nom et devenu en mars 2007, UTZ CERTIFIED Good Inside. Le nouveau nom reflète l'intention de diversifier le modèle pour l'étendre à des produits autres que le café. L'adoption de la norme UTZ et la croissance des ventes de café certifié UTZ dans le monde ont été très rapides.

UTZ CERTIFIED est un programme global de certification qui établit des normes de production responsable en matière de produits agricoles et de leur distribution. UTZ, qui

signifie « bon » en langue maya, offre l'assurance d'une production de café, de cacao et de thé dont la qualité est conforme aux exigences des marques et des consommateurs, tant sur le plan social qu'environnemental. Le café, le cacao et le thé UTZ CERTIFIED ont été produits dans le respect des critères établis par le Code de Conduite UTZ CERTIFIED.

### 3.1.2.1.2. Principaux documents UTZ CERTIFIED *Good Inside*

1° Le **Code de Conduite UTZ CERTIFIED *Good Inside* qui** présente une série de critères reconnus internationalement en ce qui concerne la production agricole responsable, tant du point de vue social que du point de vue environnemental. Il se fonde sur les Conventions internationales de l'OIT et comprend les principes des Bonnes Pratiques Agricoles. Il existe plusieurs guides qui donnent des informations additionnels sur la manière de mettre en place les critères du Code de Conduite. Il y a également des documents informatifs destinés à des groupes (SCI) pour certains produits.

Les critères du Code de Conduite UTZ CERTIFIED se divisent en trois catégories: Les bonnes pratiques agricoles et d'affaires (suivi des processus d'affaires, enregistrement des engrais et produits agro-chimiques, formations des travailleurs, la traçabilité du café, la mise en œuvre des procédures de protection d'accidents et d'urgence, etc. **Critères sociaux** (les travailleurs sont protégés par les lois nationales et les conventions de l'OIT, les travailleurs reçoivent des vêtements de protection pour l'utilisation de produits chimiques ; l'accès aux soins de santé pour les travailleurs et leurs familles ; l'accès à l'éducation pour les enfants ; l'accès à un logement décent ; l'accès à l'eau potable, etc.); **Critères environnementaux** ( réduire et de prévenir l'érosion des sols ; la mise en œuvre de la gestion intégrée des ravageurs ; réduire l'utilisation de l'eau et la pollution de l'environnement ; traitement de l'eau contaminée; la protection des espèces en voie de disparition.) .

Source : [http://en.wikipedia.org/wiki/UTZ\\_Certified#cite\\_note-code\\_of\\_conduct\\_2009-3](http://en.wikipedia.org/wiki/UTZ_Certified#cite_note-code_of_conduct_2009-3)  
consulté le 24/03/2012

2° Les **exigences de la Chaîne de Traçabilité UTZ CERTIFIED *Good Inside*** présentent une série de règles administratives et techniques qui ont été développées pour garantir un niveau de confiance élevé quant au lien entre les produits UTZ CERTIFIED et les producteurs UTZ CERTIFIED ;

3° La **Politique d'étiquetage UTZ CERTIFIED *Good Inside***1 qui indique les règles d'utilisation du logo UTZ CERTIFIED et les dispositions relatives à l'utilisation du nom « UTZ CERTIFIED *Good Inside* ». Il existe un document spécifique pour chaque produit ;

4° Le **Protocole de Certification UTZ CERTIFIED *Good Inside* qui** détaille la structure et la procédure de certification dans le respect du Code de Conduite et de la Chaîne de Traçabilité UTZ CERTIFIED. Il décrit les procédures que les organisations de la chaîne doivent suivre (par exemple les producteurs, les transformateurs, les exportateurs, les importateurs et les négociants) pour obtenir et conserver la certification relative au Code de Conduite et/ou à la Chaîne de Traçabilité, ainsi que les procédures que pour les Organismes de Certification lorsqu'ils effectuent les audits. Ce document comprend également les principes de base devant être respectés pour la certification de groupes de producteurs.

### **3.1.2.1.3. Procédures d'adhésion à UTZ CERTIFIED**

Etape 1. Prenez contact avec l'agence UTZ Certified à Amsterdam et demandez un dossier d'information sur le programme de certification ;

Etape 2. Complétez le formulaire d'inscription et renvoyez-le à l'agence UTZ Certified à Amsterdam. Une lettre d'acceptation vous sera ensuite envoyée ;

Etape 3. Faites une auto-évaluation de votre production et/ou de votre unité de production vis-à-vis des critères du Code de conduite UTZ ;

Etape 4. Prenez contact avec un organisme de certification homologué par UTZ Certified et convenez d'une date pour l'inspection. L'organisme de certification vérifiera la conformité de vos activités vis-à-vis du Code de conduite UTZ et des exigences relatives à la chaîne de contrôle ;

Etape 5. Si des non conformités sont constatés, un plan d'actions correctives devra être mis en place pour les résoudre ;

Etape 6. Obtention du certificat UTZ.

### **3.1.2.2. Le café d'ombre**

La certification de la culture du café sous couvert d'ombre est une initiative récente qui répond à un manque dans la certification organique qui ne tient pas toujours compte de la conservation de la biodiversité.

Le but de la certification du café d'ombre est de conserver le couvert forestier essentiel à la production de café. En effet, la culture traditionnelle du café fait partie intégrante d'un système forestier qui permet la conservation de l'eau, de la terre et de la biodiversité. C'est une réponse aux mesures de technification de la production de café mises en place en Amérique latine il y a vingt ans et faisant pousser le café dans un environnement « sous le soleil ».

Étant donné que c'est un nouveau marché de niche, il existe seulement deux organismes offrant la certification pour le café d'ombre :

- Smithsonian Migratory Bird Center (SMBC)
- Rainforest Alliance.

Selon la première organisation, les critères pour obtenir la certification concernent essentiellement le pourcentage de couvert forestier sur la plantation et des spécifications botaniques.

Rainforest Alliance de son côté a les mêmes critères de couverts forestiers (tout en étant moins strictes), mais inclut aussi des critères sociaux au sujet des conditions de travail des agriculteurs. De plus, les deux organisations disposent d'un système de vérification indépendant. Néanmoins, il est important de noter que la moitié du café vendu en tant que café d'ombre ne dispose pas de certification et les contrôles sont effectués par les mêmes Organismes (Boinot, 2005 et Giovannucci, 2001).

### 3.1.2.3. La certification organique

La production organique de café a pour but de conserver la terre et sa fertilité en utilisant des pratiques de cultures favorisant l'environnement et n'utilisant pas de fertilisants.

La certification organique repose sur des principes concernant la méthodologie de production et les matériaux utilisés pour produire le café. Ainsi, un producteur désirant la certification organique doit respecter trois standards :

- il ne doit pas utiliser d'agents chimiques, et ce jusqu'à trois ans avant d'avoir obtenu la certification;
- il doit faire l'inventaire des méthodes et matériaux utilisés pour la production du café et le rapporter à l'organisme de certification;
- une entité indépendante de l'organisme de certification doit venir inspecter annuellement les méthodes et matériaux utilisés par le producteur.

## 3.2. Evolution de la production du café certifié en Afrique

En Tanzanie, le secteur du café bénéficie de l'appui de nombreuses organisations, mais celles-ci ont une action très limitée en matière de normes éthiques ou responsables. Le marché est régulé par le Tanzania Coffee Board (TCB) qui encadre la vente de café par le biais d'un système public d'enchères à Moshi. Le modèle a été mis en place pour minimiser les possibilités de collusion.

Environ 95 % des exportations de café tanzanien passent par la vente aux enchères ; seuls 5 % sont des exportations directes autorisées dans le cadre d'une licence d'exportation spécifique. Le TCB a reconnu en 2003 les besoins spécifiques du café de grande qualité et a élaboré des procédures d'acquisition de licence pour les exportations directes. Mais jusqu'ici aucune réglementation spécifique ne s'attache aux normes de développement durable et à la mise en conformité.

La certification UTZ a commencé en Tanzanie au début des années 2000. L'adoption de la norme UTZ et la croissance des ventes de café certifié UTZ en Tanzanie ont été très lentes par rapport à d'autres pays d'Afrique de l'Est. Sur l'ensemble des exportations de café certifié Utz des pays africains, seulement 2,8 % venait de Tanzanie en 2007.

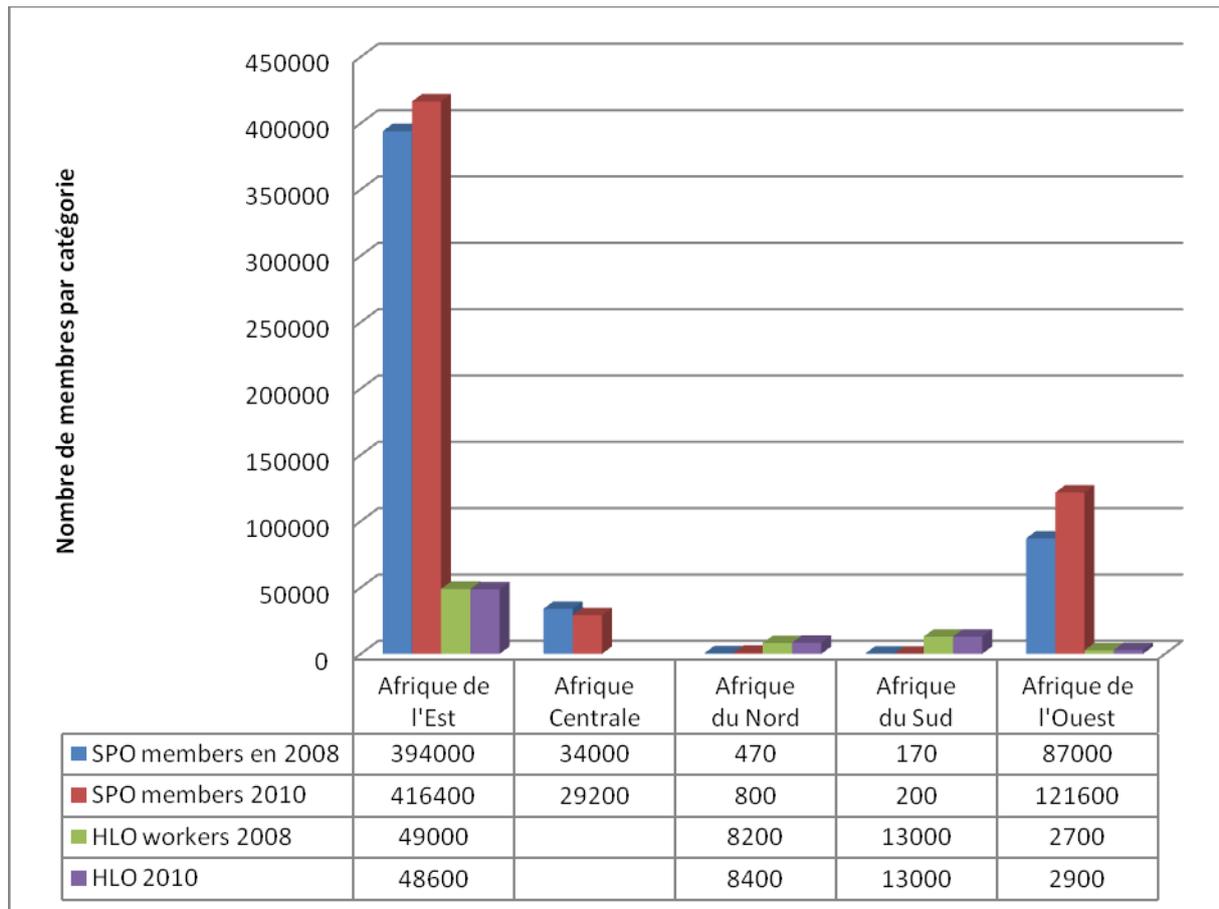
Les productions certifiées UTZ en Tanzanie sont toutes issues de grandes plantations de café de plus de 50 hectares. Les plantations sont gérées par des personnes expérimentées qui travaillent dans le secteur du café depuis longtemps. Les sociétés qui exploitent ces plantations ont des opérations similaires au Kenya et une bonne expérience de la conformité aux normes de développement durable. Il est à noter que toutes les plantations conformes à la norme UTZ sont des entreprises privées dont la direction compte des responsables étrangers.

Les producteurs et entreprises concernés par la certification ont accès aux capitaux nécessaires à l'investissement à long terme et au financement des coûts d'exploitation. Les exploitations se caractérisent par des investissements dans des équipements agricoles et pratiques de production sophistiqués. Aucun signe de difficulté financière n'a été observé

parmi les producteurs certifiés (liens avec des organisations internationales apportant un soutien financier).

Les producteurs certifiés ont accès à l'information, et sont motivés pour obtenir une certification qui améliorera leur accès aux marchés. Les producteurs et entreprises certifiés font valoir qu'ils observaient déjà les bonnes pratiques agricoles (BPA) avant la certification, ce qui a permis de minimiser les efforts requis pour la certification. De même, leur respect des réglementations locales et nationales concernant la législation du travail et l'environnement a facilité leur mise en conformité UTZ.

**Figure 1: Fairtrade en Afrique : nombre de fermiers et travailleurs salariés de 2008-2010**



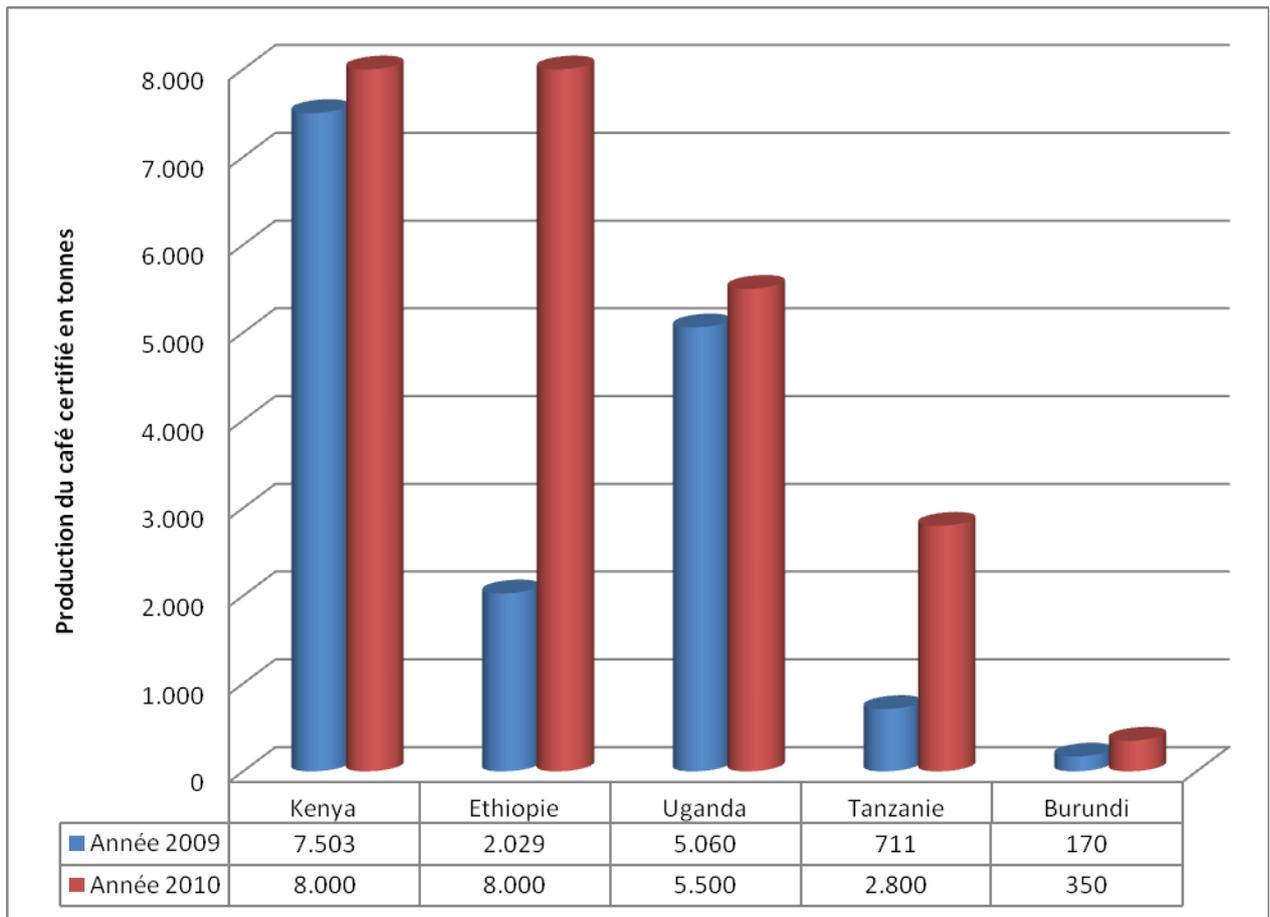
SPO: Small Producer Organizations

HLO: Hired Labor Organization

Source: Adapté par l'auteur à partir des données de Fairtrade, 2011

On constate que cette agence de certification est beaucoup présente dans les régions de l'Afrique de l'Ouest suivie des régions de l'Afrique de l'est. Par contre elle est moins présente en Afrique du nord ainsi que dans les régions de l'Afrique du Sud.

Parmi les 63 pays où Fairtrade est présente, la Tanzanie regorge d'un grand nombre de fermiers membres de l'organisation de Fairtrade.

**Figure 2: Production en tonnes du café certifié par UTZ Certified dans les pays de l'Afrique de l'Est**

Source: *UTZ Certified Supply and Demand Report, 2010*

### 3.3. Schémas de durabilité du café pour les principales agences de certification

Le tableau 2 présente, d'après Giovannucci et Ponte, un schéma comparatif de l'appréciation de la durabilité du café des principales agences de certification

**Tableau 2. Aperçu comparatif du schéma de durabilité du café pour les principales agences de certification**

Aspects	Organique	Fairtrade	Rainforest Alliance	UTZ Certified	Common Code 4 C
Prime	Pas de garantie de paiement d'une prime. Elle varie d'un marché à l'autre (mais 15 à 20 CTS / Lb ont été payés en 2011)	La prime fixée est souvent versée. Elle variait entre 15 à 20 CTS /Lb (s'il est double certifié avec le Fairtrade, il reçoit automatique 20 CTS/Lb	Pas de garantie de paiement d'une prime (mais elle variait de 5 à 8 CTS en 2011)	Pas de garantie de paiement d'une prime (mais, elle variait de 2 à 5 CTS/Lb en 2011)	Pas de garantie de paiement d'une prime (mais elle peut être payée dans certaines circonstances en fonction de l'entente entre le vendeur et l'acheteur
Rendement et qualité	En court terme, l'impact sur le rendement peut être négatif, avec possibilité d'impact positif sur la qualité	Seulement un impact indirect sur le rendement et la qualité (à travers l'augmentation des revenus, cela peut accroître la possibilité d'acquérir les intrants et l'engagement de la main d'œuvre salariée)	Potentiellement, impact négatif sur le rendement ; impact positif sur la qualité	Possibilité, impact positif mais limité	Possibilité, impact positif sur le rendement, mais à travers l'amélioration des processus et méthodes utilisées par les fermiers.
Main d'œuvre	Main d'œuvre élevée	Main d'œuvre élevée liée au processus collectif comme la coordination, réunion, etc.	Main d'œuvre élevée	Main d'œuvre Modérément élevée	Main d'œuvre moyennement élevée
Autres impacts sur le revenu	Possibilité de vente d'autres produits organiques issus du champ du fermier, donc diversification des sources de revenus	Impact indirect possible à travers un réseau large du commerce offrant la possibilité de vente d'autres produits du commerce équitable	Possibilité de vente des sous-produits forestiers et fruits	Accroissement de la visibilité d'UTZ peut améliorer les conditions du commerce	Au fil du temps, l'amélioration des conditions du commerce peuvent être possible
Accès au marché, mis en réseau	Accès au marché bien établi et fiable	Accès au marché bien établi et fiable ; Assistance technique de la part des importateurs de Fairtrade	Acheteurs et marchés augmentant régulièrement	Acheteurs et marchés augmentant régulièrement	Potentiellement, accès facile au large segment du grand marché public
Extension, crédit	Possibilité plus efficiente d'extension venue de l'équipe de terrain ; soutien des ONGs et quelques acheteurs mais, soutien limité venant du système	Accès au financement du commerce et du crédit traditionnel, sources seulement aux membres de Fairtrade et position améliorée du financement	Plus efficiente l'extension du support agro-forestier de la part des ONGs, mais support limité en provenance des services publics	Potentiellement, meilleure extension des services en provenance des ONGs de soutien, mais support limité venant d'extension des	Potentiellement, support en provenance de la plate forme de 4 C-support et la participation des acheteurs, support limité venant des services publics.

	public	pour les coopératives		services publics	
Capacité organisationnelle, impact communautaire	Potentiellement, augmente le support mutuel entre les exploitants pour résoudre les problèmes de gestion	Accroissement de la capacité organisationnelle de participation des exploitants ; accès au stage ; bonne capacité organisationnelle de servir les membres ; projets communautaires	Support mutuel entre les exploitants pour la gestion de la forêt	Renforcement des capacités organisationnelles des fermiers ( si l'enregistrement est déjà fait via les fermiers groupés que ceux qui sont individuels)	Renforcement des capacités organisationnelles des fermiers à travers l'assistance venue de la plate-forme de 4 C-support ; accès au stage
Environnement	Adoption potentielle des nouvelles techniques pour améliorer la fertilité du sol, la lutte contre l'extension du désert et l'érosion	Bénéfices environnementaux limités	Amélioration des conditions de la biodiversité et de l'agro-écologie ; accroissement de la fertilité du sol	Bénéfices environnementaux limités à travers l'élimination graduelle des procédés et méthodes inappropriés utilisés par les fermiers	Bénéfices environnementaux limités à travers l'élimination graduelle des procédés et méthodes inappropriés utilisés par les fermiers
Risques, capacités de planification	Réduction des risques à travers des intrants externes réduits ; pas de monoculture ; amélioration de la résilience du sol ; la planification peut être améliorée	Meilleure planification pour la production caféière, des besoins individuels et des ménages, les prix garantis réduisent les risques	Réduction de la gestion des pesticides et du risque social, la planification peut être améliorée	Potentiel quelque réduction de la gestion des pesticides, la planification peut être améliorée	Meilleure planification et réduction des risques à travers l'amélioration de l'accès au marché qui peut être possible

Sources: Giovannucci et Ponte; 4C table by Hilten

### 3.4. Coûts, avantages et contraintes liés à la certification UTZ CERTIFIED Good inside

#### 3.4.1. Coûts liés à la certification

Les producteurs et entreprises certifiés mettent en avant les coûts suivants :

- **Coûts de gestion** : documentation lourde nécessaire à la traçabilité, coût de la certification elle-même, supervision très étroite de tous les aspects de l'exploitation (gestion des déchets par exemple) ;
- **Coûts de mise en œuvre des Bonnes Pratiques Agricoles (BAP)** : protection des réserves aquatiques, préservation des sols, lutte contre la déforestation et l'érosion des sols, gestion des déchets, stockage ;
- **Coûts liés aux critères sociaux** : formation continue, ateliers de sensibilisation aux aspects sociaux et environnementaux, conformité à la législation du travail pour toutes les catégories d'employés, protection et hygiène des employés, sensibilisation à la gestion des déchets et aux risques de pollution.

#### 3.4.2. Avantages liés à la certification

En contrepartie des coûts, les producteurs et entreprises bénéficiant de la certification perçoivent les avantages suivants :

- ils offrent régulièrement des emplois aux travailleurs des communautés et villages voisins ;
- du point de vue de la gestion, la certification crée de la transparence et de l'ouverture entre la direction et les employés ;
- l'efficacité des systèmes d'irrigation permet des économies d'eau ;
- ils obtiennent des prix plus élevés et un meilleur accès aux marchés ;
- le respect de la norme favorise le sens de la discipline dans l'ensemble de l'organisation et crée de la responsabilité sociale.

#### 3.4.3. Contraintes liées à la certification UTZ

- L'un des aspects délicats de la certification concerne l'**utilisation des produits chimiques**. Outre les réglementations nationales sur l'importation et l'utilisation de ces produits, les producteurs doivent respecter les conditions du Code de conduite UTZ dans ce domaine (tenue de registres, santé des travailleurs, nettoyage des équipements, traitement des déchets chimiques, protection des ressources en eau).
- Autre difficulté, celle liée à la **traçabilité du café** qui doit être garantie tout au long de la filière. Au niveau de l'exploitation sont assurées à la fois la production et la pré-transformation. Toutes les procédures sont documentées pour permettre la traçabilité totale du produit (traitement, fermentation, lavage, séchage, stockage).
- Dans le cadre de la certification UTZ, les producteurs doivent être en lien avec des négociants et torréfacteurs également certifiés UTZ Certified.
- Une troisième difficulté tient à la **contractualisation avec les acheteurs** de café certifié UTZ. Celle-ci est particulièrement importante dans le cas des exportations directes. Les producteurs s'efforcent d'obtenir des contrats à terme avec l'acheteur à

un prix donné de telle sorte que même si le prix de vente aux enchères est plus faible, l'acheteur doit payer le prix convenu initialement dans le contrat. Ces contrats permettent de réduire les risques au minimum mais ne s'obtiennent pas facilement.

- Enfin, une difficulté indirecte consiste pour les producteurs en la **gestion de multiples certifications**. Bien que les normes puissent se recouper et faire baisser le coût total de conformité aux différentes certifications, l'évolution constante du contenu des normes et leur multiplication rendent cette gestion délicate.

## **3.2. Description de Kagombe et de Rugerero**

### **3.2.1. Station de Kagombe et Processus de certification**

#### **3.2.1.1. Statut**

La station Certifiée de Kagombe est l'une des 28 stations gérées par la SOGESTAL KIRUNDO-MUYINGA dont 25 ont été construites par le Gouvernement Burundais. La station de Kagombe est donc parmi les trois construite par la SOGESTAL KIRUNDO-MUYINGA en 1999. Il faut toutefois signaler que la répartition du capital de la SOGESTAL est faite de la manière suivante : 60% privés, 20% Gouvernement, 20% associations de caféiculteurs.

Avec l'assistance de la SOGESTAL, les caféiculteurs de la commune de Mwakiro ont décidé en 2002, de créer une coopérative des caféiculteurs dénommée « KAWA NZIZA ». Cette coopérative est un des membres d'une confédération appelée « MFASHA NGUFASHE » qui compte actuellement plus de 25662 caféiculteurs venant des 28 stations gérées par la SOGESTAL KIRUNDO-MUYINGA.

#### **3.2.1.2. Genèse de l'introduction du programme de certification UTZ Kapeh à la station de KAGOMBE**

L'introduction du programme de certification UTZ Kapeh au Burundi est venue d'une demande d'un acheteur habituel du café burundais et qui achète aussi du café certifié UTZ kapeh dans d'autres pays. Ce dernier s'était adressé à l'organisation UTZ kapeh pour exprimer sa volonté d'acheter un café certifié UTZ Kapeh au Burundi. Ce produit n'existant pas encore, les deux se sont mis à chercher un partenaire-producteur pouvant répondre à la demande.

Les premiers contacts eurent lieu à Arusha en Tanzanie lors de la troisième conférence-exposition de l'EAFCA en février 2006 entre les partenaires suivants :

- Un représentant de la filière café burundaise ;
- Un représentant de la Sogestal Kirundo-Muyinga ;
- Un représentant de l'acheteur ;
- Deux représentants de l'UTZ Kapeh ;
- Un représentant du bailleur.

Après les échanges de faisabilité du projet au Burundi et les responsabilités revenant à chaque partenaire, il a été convenu un accord de principe pour l'élaboration d'un projet de certification du café UTZ Kapeh à la station de Kagombe de la SOGESTAL Kirundo-

Muyinga. Le choix de cette station est dicté principalement par le fait que cette station a été construite par la Sogestal Kirundo-Muyinga et le programme de certification pourra ne pas avoir des entraves car le programme de privatisation des stations construites par l'Etat commençait à prendre forme.

Un expert d'UTZ Kapeh est venu en avril 2006 pour une mission d'élaboration du projet et ce dernier a été approuvé par les organes habilités en septembre 2006.

L'objectif de ce projet intitulé : « Projet de production et de commercialisation d'un café certifié UTZ Kapeh à la station de Kagombe » a pour objectif principal de produire un café de qualité répondant à des normes internationalement reconnus pour donner au consommateur un produit de qualité et d'avoir un revenu meilleur pour le producteur.

### **3.2.1. 3. Objectifs de KAGOMBE UTZ Certified**

L'objectif général est d'assister les petits producteurs à intégrer les bonnes pratiques agricoles ( BPA) pour accroître leurs productions caféières en quantité et en qualité, donc leurs revenus en vue d'améliorer leur bien-être social.

Les objectifs spécifiques sont les suivants :

- Sensibiliser tous les caféiculteurs de cette commune de Mwakiro et d'autres qui sont autour de la station de Kagombe d'avoir une vision commune en ce qui concerne la production caféière ;
- Coordonner toutes les activités en rapport avec le café dans la station de Kagombe et tout autour d'améliorer la qualité et la quantité du café ;
- Rechercher le marché présentant les meilleurs marchés apportant la plus-value aux caféiculteurs ;
- Renforcer les capacités des caféiculteurs dans les bonnes pratiques agricoles qui respectent l'environnement (gestion des sols, agroforesterie, etc.) ;
- Encourager les enfants des membres pour aller à l'école et poursuivre leurs études depuis le primaire jusqu'à terminer les études universitaires ;
- Approcher les institutions de micro finance pour octroyer les microcrédits aux membres et donc, ils ne peuvent pas vendre leurs cerises à bas prix pendant les périodes de soudure.

### **3.2.1. 4. Conditions mises en place pour être certifiée**

- **Application des normes du code de conduite**

Application des normes contenus dans les codes de conduites (regroupement des caféiculteurs en groupes, formation des caféiculteurs en fonction des Bonnes Pratiques Culturelles élaborées

par UTZ CERIFIED, protection de l'environnement, la traçabilité du café depuis le producteur jusqu'à l'usine de déparchage, etc.

- **Système d'Audit**

Pour bien appréhender la traçabilité du café depuis la plantation jusqu'au lieu de conditionnement et constater l'applicabilité des normes contenues dans le code de conduite, des auditeurs d'UTZ Certified ou leurs représentants viennent, chaque année avant la délivrance du certificat, inspecter la SOGESTAL (administration), la SODECO (Hygiène, endroit de sécurité, système de sécurisation, etc.), la station de Kagombe et enfin les caféiculteurs. Pour ces derniers, la taille de l'échantillon est calculée en fonction de la racine carrée du nombre de caféiculteurs qui vendent leurs cerises au niveau de la station. Le choix du caféiculteur est aléatoire. La taille de l'échantillon ainsi déterminée sert de base pour le calcul des frais d'audits. Ces frais, qui sont tous à la charge de la Sogestal (Kirundo-Muyinga), comprennent : la logistique (le transport d'auditeurs depuis Nairobi jusqu'à Bujumbura aller et retour, indemnité de subsistance, coûts des tickets d'avions, etc.), UTZ inspection (QMS, Mill inspection, etc.)

Dans le cas où certains points ne sont pas remplis, les auditeurs accordent un délai supplémentaire pour les corrections de non-conformité. Il faut signaler que la station de Kagombe a déjà reçu quatre certificats (en 2008, 2009, 2010 et 2011) et que la maison qui envoie les auditeurs d'UTZ CERTIFIED est l'AfriCert qui a son siège à Nairobi / Kenya.

### **3.2.1. 5. Structuration de la Coopérative de KAGOMBE**

La coopérative de Kagombe est subdivisée en deux parties : l'usine (station elle-même) et la coopérative proprement dite.

#### **3.2.1. 5. 1. L'usine de Kagombe**

- Personnel de la station de Kagombe

Pendant la campagne, la station de Kagombe utilise au moins 300 temporaires. Comme permanents, elle compte 7 agents répartis comme suit (tableau 3) :

**Tableau 3. Description des fonctions et niveaux d'étude du personnel de la station de Kagombe**

Fonction	Niveau d'étude
Chef d'usine	A <sub>2</sub>
Chef Adjoint	A <sub>3</sub>
Agronome chargé du programme UTZ certifié	A <sub>2</sub>
Magasinier	Formé sur terrain
Proposé-moteur	Formé sur terrain
Chef d'équipe	Formé sur terrain
Chargé du gradage	Formé sur terrain

- Bâtiments

Bâtiment central abritant le bureau du chef d'Usine et son adjoint

Bureau de l'Agronome chargé de la production

Chambre de stockage des produits phytosanitaires

Toilettes pour les vendeurs des cerises

Place de triage manuel couverte de tôles

Salle d'achat et de pesage de cerises

Hangar de transit

Abri pour la trémie et le dépulpeur

- Processus d'usinage

Triage manuel des cerises



Flottaison sous eau puis l'enregistrement de la quantité de cerise apportée par le caféiculteur après leur pesage (on remet un reçu au caféiculteur dont une copie est destinée à la SOGESTAL et une autre copie reste au niveau de l'Usine)



Versement dans la trémie (séjour : 3 à 4 heures au maximum pour éviter la fermentation)



Dépulpage (dépulpeur : machine à 6 disques)

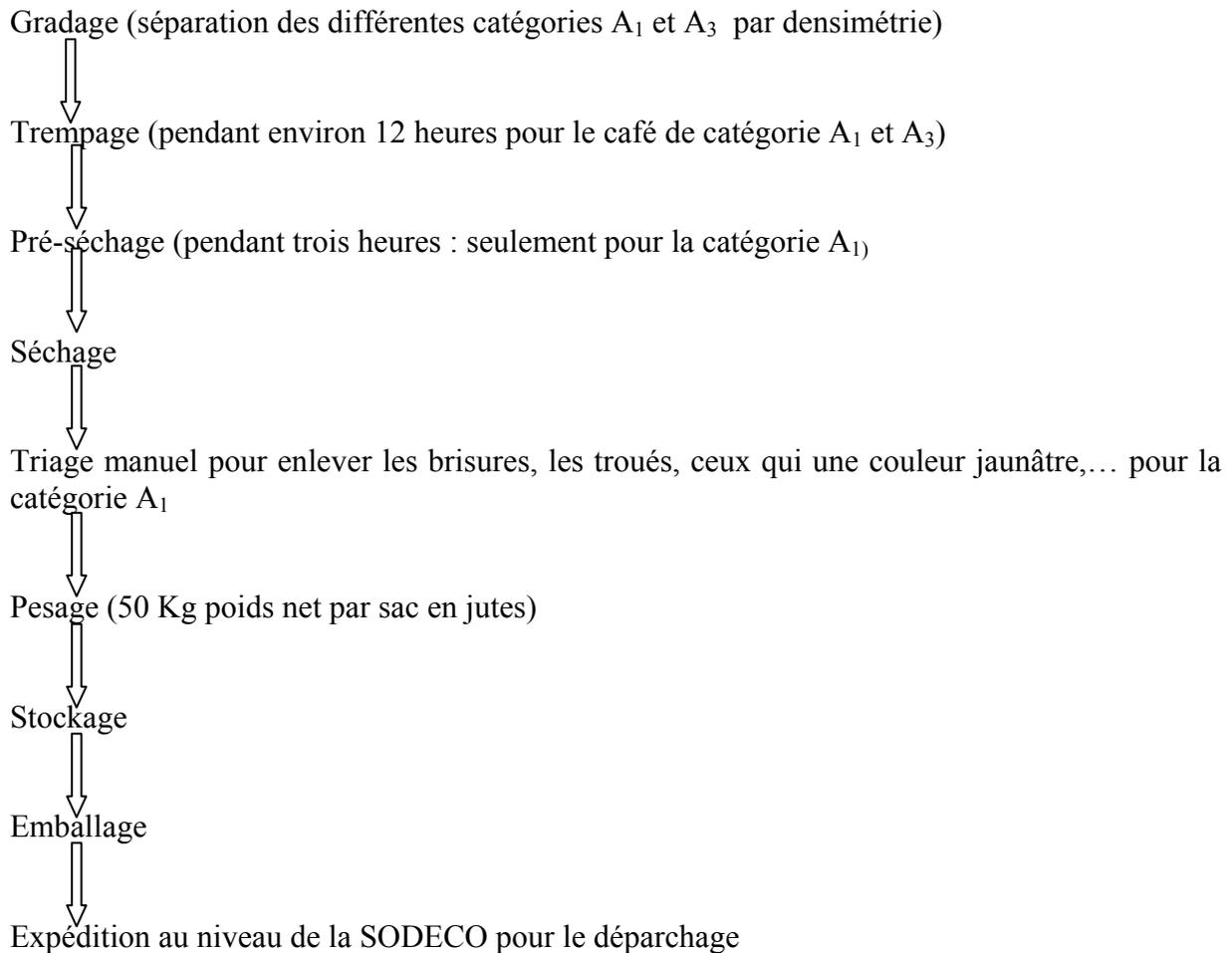


Bacs de fermentation avec mucilage (pendant 12 heures)



Lavage





*NB. La catégorie A<sub>4</sub> (flottant) passe directement avec l'eau et elle est récupérée plus bas et conduite directement au séchage. Pour bien suivre la traçabilité du café, chaque catégorie est expédiée à la SODECO séparément camion bien fermé.*

- Protection de l'environnement

Dans la station de Kagombe, pendant les opérations de dépulpage, le dépulpeur sépare les pulpes du café et l'eau issue du dépulpage et les pulpes sont dirigées vers une fosse à pulpe. Après le dépôt des pulpes, l'eau et le mucilage passent à travers un canal pour aboutir dans une fosse à mucilage. L'eau mélangée au mucilage termine dans un grand puit perdu remplis de pierres et du gravier. Il n'y a donc pas d'eau directement rejetée dans le marais en aval de la station.

### 3.2.1. 5. 2. Structuration au niveau des caféiculteurs

Les caféiculteurs sont regroupés en 12 blocs et ces derniers sont subdivisés en 74 groupes. Chaque groupe comprend en moyenne 82 caféiculteurs (tableau 4).

**Tableau 4. Répartition des caféiculteurs dans les différents blocs et groupes et leurs nombre de pieds de caféiers respectifs**

Blocs	Nombre de groupes	Nombre total de collines	Total de planteurs	Nombre de pieds de caféiers	Superficie couverte en ha
I	8	4	620	206094	77,3
II	9	3	779	215014	80,65
III	5	1	395	113664	42,63
IV	4	1	374	94958	35,62
V	5	2	466	193503	72,58
VI	4	10	298	117682	44,14
VII	7	7	600	242976	91,14
VIII	2	1	179	95623	35,87
IX	10	4	663	316865	118,85
X	5	2	302	135804	50,94
XI	10	5	886	375721	140,93
XII	5	5	466	178247	66,86
Total	74		6028	2286151	857,51
Moyenne	Nombre moyen de groupes par bloc= 6	Nombre de planteurs par colline= 134	Nombre de planteurs moyen par groupe = 82	Nombre moyen de pieds par caféiculteur= 379,25	Superficie moyenne par caféiculteur= 0,14225 ha

*Source: station de Kagombe*

A la tête de chaque groupe, on a un président du groupe (Leader) et son adjoint. Les leaders de groupes reçoivent des formations de la part de l'agronome chargé du programme de certification ou d'autres venus du PAIR/ USAID et à leur retour ils forment les caféiculteurs. La formation est inscrite dans la mise en place du code de conduite d'UTZ CERTIFIED (Formation sur le secourisme, l'application des bonnes pratiques agricoles, la formation pour la lutte contre le VIH/SIDA, la formation en rapport avec la culture du caféier : lutte contre les maladies et ravageurs, la fertilisation, l'application des pesticides, la protection de l'environnement, la pépinière, la conservation des produits phytosanitaires, etc.

Chaque caféiculteur est tenu d'enregistrer dans son cahier de charges, toutes les pratiques agricoles effectuées dans chaque plantation caféière, les réunions auxquelles il a participé, les thèmes, la période d'application, nombre de personnes qui ont fait l'action, la durée, etc. (nombre de tailles effectuées, l'application des fertilisants et leurs coûts, la quantité de cerises vendues, l'argent reçu, etc.).

Pour bien suivre la traçabilité du café, chaque plantation du café est identifiée avec un numéro (code) inscrit sur des pancartes se trouvant dans chaque champ du caféier. Sur la pancarte est inscrit le numéro de groupe du caféiculteur, le numéro du caféiculteur sous lequel il est enregistré au niveau de la station (fiche d'enregistrement au niveau de l'usine). Ce numéro doit figurer aussi dans le cahier des charges détenu par le caféiculteur.

La fiche du caféiculteur comporte :

- ❖ Le nom de l'usine ;
- ❖ Le numéro du caféiculteur ;
- ❖ La colline ;
- ❖ L'année.
- ❖ La partie est réservée pour l'enregistrement des quantités de cerises apportées par le caféiculteur, le montant de la paie ainsi que d'éventuelles primes perçues par l'exploitant.
  - Répartition des caféiculteurs livrant la cerise à la station de Kagombe

Le tableau 5 fournit la répartition des caféiculteurs au niveau des communes et des collines.

**Tableau 5. Répartition des caféiculteurs en fonction des communes et provinces de provenance**

Province	Commune	Nombre de collines
Muyinga	Mwakiro	31
	Buhinyuza	1
Karusi	Mutumba	7
	Buhiga	6
Total		45

*Source : Station de Kagombe*

### **3.2.1. 5. Prime d'U.T.Z reçues par les caféiculteurs**

A part la prime octroyée par les Sogestals, les caféiculteurs reçoivent une prime UTZ CERTIFIED qui varie selon les années. Cette prime est payée par l'acheteur des fèves

certifiées mais elle est négociable, et elle varie de 12.5 à 16 CTS/Livre. Elle est en moyenne de 14 CTS / livre. Cette prime est répartie comme suit :

- ❖ 7 CTS/livre pour le caféiculteur ;
- ❖ 4-5 CTS/livre pour la Sogestal ;
- ❖ 2-3 CTS/livre pour la SODECO

*N.B. un livre est égal à 453,592 g*

### **3.2.1. 6. Coopératives attachée à la station de Kagombe**

La coopérative dénommée « KAWA NZIZA » proprement dite a commencé en 2007 avec le programme de certification UTZ Certified. Elle est structurée comme suit : un comité composé de 7 personnes dont un président de la Coopérative (homme), un vice-président (homme), un secrétaire (homme), une trésorière (femme) et 3 conseillers (2 femmes et un homme). Le mandat du comité est de trois ans renouvelables d'une façon indéterminée.

La coopérative a un statut notarié à Ngozi. Cette coopérative est membre de la Fédération « MFASHA NKUFASHE » dont le siège se trouve à Kirundo.

Tous les caféiculteurs qui apportent leurs cerises à la station de Kagombe sont automatiquement membres de cette coopérative KAWA NZIZA, mais les membres effectifs sont ceux qui ont des actions dans cette coopérative.

Pour être membre effectif, les conditions à remplir sont les suivantes : être parmi les caféiculteurs qui vendent leurs cerises à la station de Kagombe et avoir au moins une action équivalente à 5000 FBU.

Les objectifs assignés par les membres de la coopérative Kawa Nziza sont : augmenter leurs revenus par l'achat du café parche pour la revendre et construire ou acheter leur propre station de lavage.

Les actions déjà réalisées par les membres de la coopérative sont :

- Achat du café parche et ils ont réalisé des bénéfices ;
- Placement du capital dans la station de lavage de Kinyangurube (Kirundo) ;
- Mise en place des pépinières de caféiers ;
- Demande des microcrédits à leurs membres à partir de leur Fédération Mfasha Nkufashe pour éviter les banques Lambert ;
- En collaboration avec la Fédération Mfasha Nkufashe avec l'Intercafé et Arfic, ils ont distribués des sécateurs, des produits phytosanitaires pour de lutter contre la punaise.

### 3.2.2. Station de Rugerero

- **Statut**

La station de lavage de Rugerero se trouve dans la commune Gashoho en province de Muyinga. Elle a été construite en 1989 par le Gouvernement du Burundi et a débuté ses travaux en 1990 et gérée par SOGESTAL KIRUNDO-MUYINGA. Elle regroupe les caféiculteurs venant de 13 collines de la commune Gashoho.

- **Personnel de la station de Rugerero**

La station de Rugerero compte 5 agents permanents (tableau 6).

**Tableau 6. Répartition du personnel permanent de la station de Rugerero**

<b>Fonction</b>	<b>Niveau d'étude</b>
Chef d'usine	A <sub>3</sub>
Magasinier	Formé sur terrain
Proposé-moteur (machiniste)	Formé sur terrain
Chef d'équipe	Formé sur terrain
Chargé du gradage	Formé sur terrain

- **Bâtiments**

Bâtiment central abritant le bureau du chef d'Usine et son adjoint

Place de triage manuel non couverte de tôles

Salle d'achat et de pesage de cerises

Abri pour la trémie et le dépulpeur

- **Processus d'usinage du café (idem station Kagombe)**

- **Protection de l'environnement dans les stations de Kagombe et Rugerero**

La station de Rugerero n'a prévu aucun système de protection de l'environnement. Les eaux chargées du mucilage sont, au-delà de la fosse à pulpe, directement déversées dans les eaux du ruisseau en aval.

#### **Coopérative attachée à la station Rugerero**

L'année de démarrage des activités de la coopérative « **DUTEZE IMBERE IKAWA** » est de 2007, mais le comité a été mis en place en 2008. Ce comité de la coopérative est organisé comme suit : un président (homme), un vice-président (Homme), un secrétaire (Homme), un trésorier (Homme) et 7 conseillers (dont 3 femmes) parmi lesquels 3 sont chargés du suivi des activités (2 hommes et 1 femmes). Le comité est d'une durée de 3 ans renouvelable

La coopérative a comme objectif de vendre le café depuis l'usinage jusqu'au marché international (avoir leur propre station de lavage). Cette coopérative est membre de la Fédération « MFASHA NKUFASHE » dont le siège se trouve à Kirundo.

Les conditions d'entrer sont les suivantes : être caféiculteurs vendant les cerises à la station de Rugerero et placer une action dans la coopérative équivalente à 5000 F.

Les actions déjà menées sont les suivantes : achat de la parcelle pour la construction de leur station ; apport des actions dans la station à Kobero équivalent à 1.570.000 FBU ; transport des cerises depuis le centre de collecte en utilisant les vélos jusqu'à l'usine et en retour, le caféiculteur leur paie 10 FBU/Kg.

### 3.3. Changements apparus parmi les caféiculteurs

Cette partie débute par un test t entre le groupe contrôle et le groupe traité pour s'assurer que les ménages retenus ne diffèrent pas trop en ce qui concerne les caractéristiques de ménage. Ceci est nécessaire pour s'assurer que les différences entre les groupes ne sont pas liées aux caractéristiques de ménage, mais à l'affiliation ou non au système de certification UTZ. Particulièrement, l'effet de la certification sur des variables de productivité, le revenu du ménage, la qualité du café et les conditions de travail sont visées.

#### 3.3.1. Caractéristiques des ménages

Sur base des résultats d'analyse (tableau 7), il est clair qu'il n'y a pas beaucoup de différences entre les caractéristiques de base des ménages mise à part le niveau d'instruction du chef de ménage et l'âge moyen de la famille. En effet, il apparaît que le niveau d'instruction des chefs de ménage est significativement supérieur à Kagombe qu'à Rugerero. Ceci devrait influencer le niveau d'adoption des technologies en faveur de Kagombe. L'âge moyen de la famille est aussi très significatif entre les deux échantillons. Ces deux effets devraient être tenus en compte lors de l'analyse de régression éventuelle.

Tableau 7. Caractéristiques relatives aux ménages

Variable	Rugerero (effectif = 63)	Kagombe (UTZ) (effectif = 90)	t	Signification
Age du chef de ménage	48,13	50,96	1,221	ns
Niveau d'instruction du chef de ménage	2,48	3,96	5,810	***
Taille du ménage	6,62	6,08	1,391	ns
Taille de l'exploitation	210,97	194,38	0,450	ns
Age moyen de la famille	22,15	25,78	2,808	***
Sexe du chef de ménage	1,13	1,22	1,501	ns

Bien qu'il y ait des différences significatives entre les caféiculteurs pour ce qui concerne le niveau de formation et l'âge moyen de la famille, les autres caractéristiques diffèrent légèrement. En conséquence, les ménages semblent suffisamment comparables pour garantir que les résultats ne seront pas trop biaisés par des différences dans les caractéristiques.

#### 3.3.2. Productivité

Compte tenu que l'UTZ se focalise en priorité sur l'aménagement des exploitations et sur l'encadrement à travers la professionnalisation de la production, il est par conséquent supposé (Bitzer et al., 2008) que les exploitants sous UTZ enregistrent une productivité plus élevée par rapport aux non UTZ.

Dans ce genre de recherche, l'approche de la fonction de production, notamment celle de Cobb-Douglas, devrait être appliquée pour comparer les différences au niveau du rendement et de la productivité de la main d'œuvre entre les deux groupes. Les statistiques descriptives présentées dans le tableau 8 montre que les variables telles la densité de plantation, l'âge des plantations, les dépenses allouées à l'achat des plants et aux fertilisants ne sont pas

statistiquement différents entre les deux groupes. Par contre la production totale des cerises, la productivité en terme de kg/arbre, la productivité en terme de kg/are, le profit tiré de la production de café sont statistiquement différents en faveur de Kagombe. En outre, Rugerero recourt plus à la main d'œuvre extérieure que Kagombe, mais en même temps cette main d'œuvre consacre moins d'heures par jour à Rugerero qu'à Kagombe.

**Tableau 8. Paramètres relatifs à la productivité**

<b>Variables</b>	<b>Rugerero (n = 63)</b>	<b>Kagombe (UTZ) (n = 90)</b>	<b>t</b>	<b>Signification</b>
Production totale de cerise (kg)	243,94	341,41	1,672	*
Productivité (kg/arbre)	0,3909	2,3062	1,650	*
Productivité (kg/are)	10,38	16,28	2,392	**
Densité de plantation (arbres/are)	34,98	28,88	1,095	ns
Age des plantations (années)	28,35	29,86	1,146	ns
Coût des intrants (FBU/an)	295661,10	145524,71	2,006	**
Dépenses semences et plants (FBU/an)	2241,94	3755,25	1,071	ns
Dépenses fertilisants (FBU/an)	5108,82	2032,76	1,420	ns
Quantité main d'œuvre (heures/jour)	4,31	5,39	7,089	***
Profit production café (FBU/an)	119212,14	207438,78	2,399	**
Main d'œuvre louée (%)	131871,64	90951,65	1,783	*

\* : significatif pour  $\alpha = 10\%$  ; \*\* : significatif pour  $\alpha = 5\%$  ; \*\*\*: significatif pour  $\alpha = 1\%$  ; ns : non significatif

### 3.3.3. Connaissance

En terme de formation et par conséquent en terme de connaissances, les caféiculteurs de Kagombe sont mieux encadrés si on se base sur les pourcentages des membres ayant bénéficié de la formation dans plusieurs domaines (tableau 9).

**Tableau 9. Pourcentages des ménages ayant bénéficié de la formation**

<b>Domaine de formation</b>	<b>Station Rugerero (%)</b>	<b>Station Kagombe (%)</b>
Bonnes pratiques	36,5	71,9
Code de conduite UTZ	0	69,7
Usage des produits chimiques	28,6	94,4
Egalité du genre	4,8	34,8
Secourisme	1,6	16,9

L'analyse statistique comparative indique très clairement que les différences sont nettes entre les deux groupes (tableau 10) et ceci n'est que la résultante de l'action de l'UTZ de se focaliser en priorité sur l'aménagement des exploitations et sur l'encadrement à travers la professionnalisation de la production.

**Tableau 10. Comparaisons des formations reçues**

Variables	Rugerero (n = 63)	Kagombe (UTZ) (n = 90)	t	Signification
Bonnes pratiques	0,37	0,72	4,557	***
Code de conduite UTZ	0,00	0,70	14,215	***
Usage des produits chimiques	0,29	0,94	10,546	***
Egalité du genre	0,05	0,35	5,226	***
Secourisme	0,02	0,17	3,555	***

### 3.4. Analyse de l'évolution de la production caféicole

#### 3.4.1. Production de cerises avant et après le système de certification à Kagombe

Les résultats du tableau 11 montrent que la production moyenne de cerises après la mise en place du programme de certification UTZ CERTIFIED est plus élevée par rapport à celle d'avant la mise en place de ce programme de certification. De plus, on doit relever que la déviation standard enregistrée après la mise en place de la certification est plus réduite. En d'autre mot le système semblerait réduire la cyclicité du caféier et l'augmentation de la production de ce dernier par un apport de mesures incitatives.

**Tableau 11. Comparaison de la production moyenne de cerises (kg) avant et après la mise en place du programme de certification UTZ CERTIFIED**

Période	Nombre d'années	Minimum	Maximum	Moyenne	Déviations standard
Avant la certification	9	331474,5	3206629,5	1343964,833	1136495,4273
Après la certification	4	1047504	2144692	1610739,62	526792,231

#### 3.4.2. Production moyenne par caféiculteur à Kagombe et Rugerero de 2008 à 2011

Les résultats comparatifs des deux stations indiquent que la production moyenne des cerises des caféiculteurs apportant leurs cerises à la station de Kagombe est plus élevée que celle des caféiculteurs apportant leurs cerises la station de Rugerero (tableau 12). En plus, les écarts entre les productions sont réduits pour ceux qui vendent leurs cerises à l'usine de Kagombe que ceux apportant leurs cerises dans la station de Rugerero. Ceci ne fait qu'appuyer, l'hypothèse comme quoi les exploitants sous UTZ enregistrent une productivité plus élevée par rapport aux non UTZ, hypothèse confirmée par les résultats de l'enquête. Le programme de certification du café a donc permis aux exploitants de Kagombe de s'approprier des bonnes pratiques agricoles qui stimulent la production caféière.

**Tableau 12. Production moyenne (kg) par caféiculteur de cerises entre 2008 à 2011 dans les stations de Kagombe et Rugerero**

Station	Nombre d'années	Minimum	Maximum	Moyenne	Déviations standard
Kagombe	4	267,36	430,49	345,7375	85,14616
Rugerero	4	55,24	367,05	202,8900	150,88591

### 3.4.3. Evolution des primes reçues par kg de cerise

Les données du tableau montrent que les vendeurs de cerises à la station de Kagombe ont une prime élevée que celles vendant leurs cerises dans la station de Rugerero (tableau 13). Les deux reçoivent une prime de la part de la Sogestal Kirundo-Muyinga, mais en plus de cette prime, les vendeurs de cerises à la station de Kagombe reçoivent une prime liée à l'application du programme de certification UTZ.

**Tableau 13. Evolution des primes reçues par kg de cerises de 2008 à 2011**

Stations	Primes reçues en 2008 par kg de cerises	Primes reçues en 2009 par kg de cerises	Primes reçues en 2009 par kg de cerises	Primes reçues en 2010 par kg de cerises	Primes reçues en 2011 par kg de cerises
Kagombe	50	15	50	140	0
Rugerero	70	35	73	160	20

## 3.5. Evolution du nombre de membres aux stations de Kagombe et Rugerero

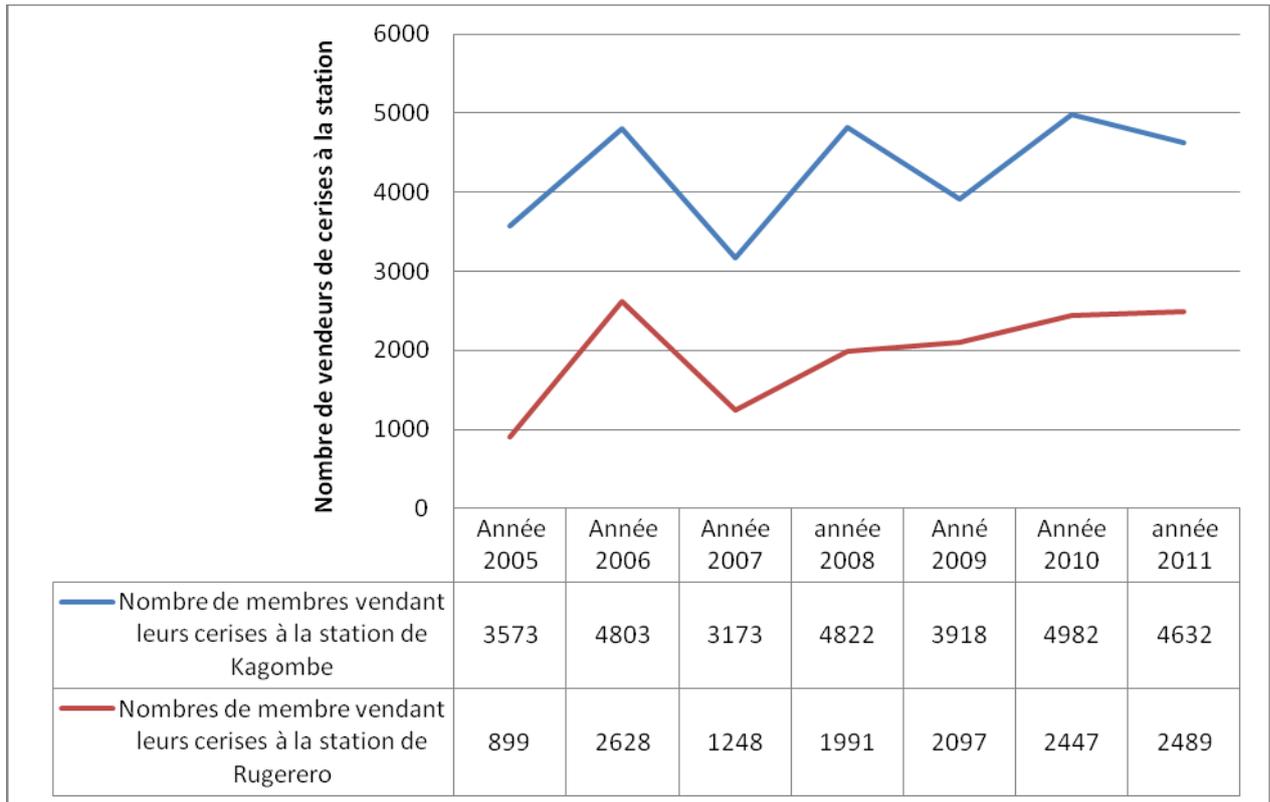
### 3.5.1. Caféiculteurs livrant leurs cerises à la station

Les données enregistrées du graphique indiquent au cours des années 2005 à 2007 une forte variation du nombre de membres qui apportaient leurs cerises à la station en liaison à de fortes variations dans la production de cerises. De 2008 à 2011 la variation est plus atténuée, particulièrement pour la station de Kagombe.

Le nombre de membres à la station de Kagombe reste aussi stable à partir de 2008 sauf en 2009 où nous constatons qu'il ya une diminution du nombre de membre, cela est en corrélation directe avec la diminution de la production caféière (cyclicité). En d'autre terme, plus la production augmente plus le nombre de membres apportant leurs cerises à la station s'accroît également. Mais, quand la production diminue, nous avons constaté que ce nombre diminue car les caféiculteurs ont tendance de vendre les petites quantités sous-forme de café parche sans l'amener à la station. En 2010, ce nombre est presque maintenu malgré la diminution de la production de café et cela à cause des primes qu'on octroie aux caféiculteurs élevées (primes de la Sogestal et primes UTZ) et les encourageant à apporter même la petite quantité de cerises à la station.

A Rugerero, le nombre de membres ont augmenté à cause des centres de collecte de cerises qui sont installés dans les campagnes éloignées de la station, ce système de transport de cerises permet aux caféiculteurs qui devraient amener leurs cerises dans d'autres stations plus ou moins proches de leurs plantations de les apporter à la station de Rugerero. En plus de cela, la position stratégique de la station située au centre de la commune Gashoho permet aux caféiculteurs d'amener leurs cerises à la station de Rugerero.

**Figure 3: Evolution du nombre de membres aux stations de Kagombe et Rugerero**

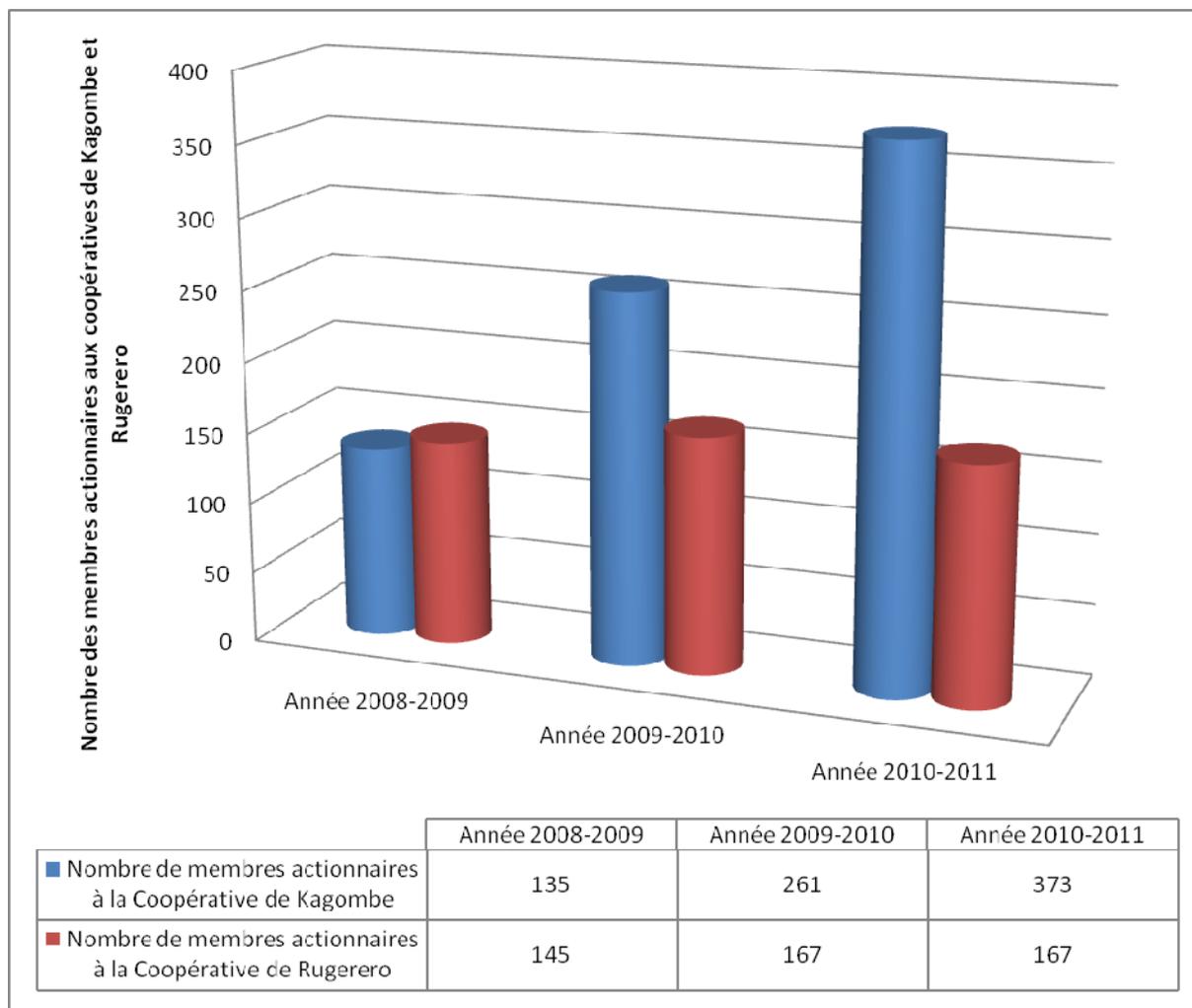


### 3.5.2. Caféiculteurs membres effectifs de la coopérative

Les résultats issus de l'analyse statistique des données relatives à l'évolution des membres actionnaires aux coopératives de Kagombe et Rugerero montrent que le nombre d'actionnaires à la coopérative de Kagombe s'accroît chaque année alors que les actionnaires de la coopérative de Rugerero se sont stabilisés à partir des années 2009-2011 (graphique).

L'accroissement des membres actionnaires de la coopérative de Kagombe s'expliquerait d'une part de l'accroissement de la production caféicole et donc de revenus et d'autre part, les sensibilisations menées chez les caféiculteurs pour entrer dans la coopérative facilitées par le regroupement de ces derniers en blocs et en groupes dirigés par des leaders choisis par les membres eux-mêmes.

**Figure 4: Evolution des membres des coopératives actionnaires dans les stations de Kagombe et Rugerero de 2009 à 2011**



### 3.6. Coûts de certification

#### 3.6.1. Analyse financière et économique du programme UTZ CERTIFIED à Kagombe

Pour déterminer la rentabilité, il faudrait considérer plusieurs paramètres :

- la somme ou le montant investi (coût du projet)
- la série des flux nets annuels de liquidités ou cash flows
- la durée de vie économique de l'investissement,
- les mécanismes d'actualisation,
- le profil de survenance des flux de liquidités dans le temps.

C'est à travers l'étude financière que l'investisseur devra apprécier la rentabilité des capitaux à engager pour le financement du projet, la rentabilité étant le surplus actualisé net dégagé par un investissement par rapport au montant investi.

A cet effet, plusieurs indicateurs sont utilisés notamment la valeur actuelle nette, le taux interne de rentabilité, le délai de récupération du capital investi, etc.

### **La Valeur Actuelle Nette (VAN)**

Cette méthode compare la somme actualisée des flux nets de liquidités au montant investi, c'est donc la différence entre les deux grandeurs. Elle est aussi appelée profit net, goodwill ou bénéfice actualisé.

La valeur actuelle nette est la différence entre les cash flows actualisés à la date 0 et le capital investi. Le taux d'actualisation utilisé est le taux de rentabilité minimum exigé par l'entreprise.

Tableau 14. Coûts initiaux et récurrents du programme de certification à Kagombe

Categories	Initial costs in \$	Recurrent costs by year	Categories	Amount in \$
First and kits	6986	Year 2008	Auditor costs	10399
Protective clothing	6081,6		Agronomist technician costs for certification programme	1200
Collectors of Empty chemical containers	1330		Sub/total year 2008	<b>11599</b>
Water analysis	245	Year 2009	Auditor costs	7114,91
Internal control system	4900		Agronomist technician costs for certification programme	1200
Construction of drying tables conditioning bins	10780		Sub/total year 2009	<b>8314,91</b>
Grouping of farmers and training	4310	2010	Auditor costs	9047
			Agronomist technician costs for certification programme	1200
Chain of custody	5000	Sub/total year 2010	<b>10247</b>	
<b>Total initial costs</b>	<b>39632,6</b>	2011	Auditor costs	8412
			Agronomist technician costs for certification programme	1200
			Sub/total year 2011	<b>9612</b>
<b>Total recurrent costs</b>			<b>39772,91</b>	

**Tableau 15. Avantages économiques liés au programme de certification UTZ CERTIFIED à la station de Kagombe**

Année	Catégories	Primes liées à la certification du café par UTZ CERTIFIED en \$	Total par année \$	Prime reçue en FBu par agriculteur / kg
2008	Agriculteurs	32200		20
	Sogestal	0		
	SODECO	0	<b>32200</b>	
2009	Agriculteurs	19580		20
	Sogestal	9420		
	SODECO	4761	<b>33761</b>	
2010	Agriculteurs	42302		23
	Sogestal	23809		
	SODECO	16790	<b>82901</b>	
2011	Agriculteurs	20484		20
	Sogestal	14934		
	SODECO	5973	<b>41391</b>	
<b>Total général</b>			<b>190253</b>	

**Tableau 16. Ventilation des primes liées à la mise en place du programme de certification UTZ CERTIFIED par catégorie (Recettes)**

Total par catégorie	Prime en \$
Agriculteurs	114566
Sogestal Kirundo-Muyinga	48163
SODECO	27524
<b>Total</b>	<b>190253</b>

**Analyse économique et financière du programme de certification UTZ CERTIFIED à la station de Kagombe**

$$VAN = \frac{\sum(R_t - D_t)}{(1+r)^t}$$

Où  $R_t$  = recettes totales au temps  $t$

$D_t$  = dépenses au temps  $t$

$r$  = taux actualisé

VAN = Valeur Actuelle Nette

## Méthode de la valeur Actuelle Nette

### Interprétation de la méthode de la valeur nette

Un projet est à retenir si la valeur actuelle nette (qui est entièrement dépendante du taux d'actualisation choisi) est positive. Une valeur actuelle nette égale à zéro signifie, en effet, que le projet étudié permet de rembourser et de rémunérer le capital investi mais ne laisse pas de surplus à l'entreprise, donc qu'il n'accroît pas sa valeur.

Lorsque la valeur actuelle est positive, elle représente le surplus monétaire actualisé que l'entreprise espère dégager de la série des revenus futurs, surplus qui correspond à la valorisation supplémentaire de l'entreprise.

### Cette analyse sera conduite au niveau de tout le système de certification (SOGESTAL-SODECO-Agriculteurs)

Si on considère le taux d'actualisation  $r$  = au taux du marché ( $r=17\%$  au niveau par exemple de la Banque de Crédits de Bujumbura / BCB)

**Tableau 17. Calcul de VAN pour le système de certification de Kagombe**

Année	Recettes (\$) (Avantages liés à UTZ CERTIFIED)	Dépenses (\$)	$(D-R)/(1+r)^t$
2007 (année 0)	0	39632,6	-39632,6
2008	32200	11599	17607,69231
2009	33761	8314,91	18588,71357
2010	82901	10247	45363,01841
2011	41391	9612	16958,86488
VAN	190253	79405,51	58885,68916

**Interprétation :** La VAN est positive, ce qui veut dire que le Système de certification UTZ est rentable car les cash flows générés par l'unité de production sont supérieurs aux dépenses d'investissement à effectuer, ce qui permettra de rembourser le capital emprunté et les intérêts éventuels.

### 3.6.2. Analyse économique du système de certification à Kagombe

Ratio=A/C (Avantages/coûts)

Où A=Avantages ou recettes actualisées ( $A=\sum Rt/(1+r)^t$ )

C= Coûts ou dépenses actualisées ( $C=\sum Dt/(1+r)^t$ )

Si le Ratio > 1, le projet est économiquement rentable

Si le Ratio < 1, le projet n'est pas faisable ou rentable économiquement

## ANALYSE ÉCONOMIQUE DU PROJET

**Tableau 18. Calcul du Ratio au niveau de la station : Avantages/ coûts**

Année	Recettes (\$) (Avantages liés à UTZ CERTIFIED)	Dépenses (\$)	Recettes actualisées	Dépenses actualisées
2007 (année 0)	0	39632,6	0	39632,6
2008	32200	11599	27521,3675	9913,67521
2009	33761	8314,91	24662,868	6074,15443
2010	82901	10247	51760,9435	6397,92509
2011	41391	9612	22088,3091	5129,44426
	190253	79405,51	126033,488	67147,799
<b>Ratio</b>			<b>1,876956357</b>	

Le Ratio=1.88 et donc, Ratio> 1, ce projet est rentable économiquement.

Le système de certification permet non seulement aux exploitants agricoles de bénéficier des avantages économiques (prime reçue par kg de cerises), également à la SOGESTAL et SODECO d'en bénéficier également.

**Tableau 19. Analyse Avantages-Coûts chez les caféiculteurs**

Année	Recettes liées à UTZ Certified en \$	Recettes actualisées	Dépenses (\$)	Coûts actualisés
2007	0	0	39632,6	39632,2
2008	32200	27521,36752	11599	9913,67521
2009	19580	14303,45533	8314,91	6074,15443
2010	42302	26412,12328	10247	6397,92509
2011	20484	10931,28759	9612	5129,44426
<b>Total</b>	<b>114566</b>	<b>79168,23372</b>	79405,51	<b>67147,39899</b>
Ratio	1,179			

Dans tous les cas, l'analyse économique Avantages-Coûts reste bénéfique chez les agriculteurs même si ces derniers supporteraient les coûts de certifications car le Ratio= 1.17 et donc un Ratio > 1, cela veut dire que 100 francs investis par l'agriculteur rapporteraient 17 francs comme bénéfice.

D'où le programme de certification du café est bénéfique pour la SOGESTAL et les caféiculteurs car il permet aux caféiculteurs d'investir davantage dans ce secteur et d'accroître la production caféière et diminuer la cyclicité du caféier.

#### **4. Conclusion et recommandations**

L'étude menée à Kagombe avait comme objectif de savoir si le programme de certification UTZ permettrait l'augmentation de la production caféière et réduirait sa cyclicité afin d'envisager ainsi les possibilités d'extension de ce programme dans d'autres stations de lavage du Burundi. Pour bien mener l'étude, la station de Rugerero, station sans programme de certification, avait servi comme station de référence en vue de bien comparer les résultats.

A la station de Kagombe, le programme de certification UTZ a permis la mise en place d'un système de protection de l'environnement (protection contre la pollution des eaux des marais grâce aux systèmes de filtration des eaux chargées du mucilage issu des différentes opérations d'usinage du café), ce qui n'est pas le cas dans la station de Rugerero où le programme n'est pas encore introduit.

Le niveau d'instruction des chefs de ménages de Kagombe est très élevé par rapport à ceux de Rugerero, ce qui facilite la mise en place des bonnes pratiques agricoles et l'adoption de ces dernières par les exploitants. Ceci a comme incidence positive l'augmentation de la production caféière et la réduction de l'amplitude de variation de cette production.

La moyenne de la production de cerises par caféiculteur au niveau de la station de Kagombe est supérieure à celle trouvée à la station de Rugerero. L'amplitude de variation de la production dans le temps semble plus réduite à la station de Kagombe comparativement à celle de la station de Rugerero. En plus, la productivité par are et par arbre est plus élevée chez les caféiculteurs de Kagombe.

En comparant la moyenne de production de cerises au niveau de la station de Kagombe avant le programme de certification UTZ à celle obtenue après sa mise en place, cette moyenne de production de cerises a augmenté après la mise en place du programme UTZ.

Par ailleurs le temps (heures/jour) consacré aux plantations caféières est nettement plus élevée chez les exploitants de Kagombe que ceux de Rugerero. Ce qui indique que les exploitants de Kagombe s'investissent davantage dans le secteur café. Le profit tiré de la production du café est aussi très élevée chez les exploitants de Kagombe. L'analyse financière et économique du programme de certification UTZ montre que ce dernier est rentable non

seulement chez les exploitants de Kagombe mais aussi pour la SOGESTAL Kirundo-Muyinga et SODECO.

L'extension du programme de certification de café à toutes les stations du Burundi est recommandée, car ce système permet d'augmenter la production et de réduire la cyclicité du café d'une part, et d'autre part. Ce programme de certification UTZ du café est également rentable du point de vue économique et financier au niveau de tous les partenaires du secteur café (exploitants, SOGESTAL Kirundo-Muyinga-Caféiculteurs –SODECO) mais permet aussi la protection de l'environnement et la lutte contre la pollution des eaux via les stations de lavage.

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## ANNEXES

**Numéro du questionnaire :****Nom de l'enquêteur :.....Date : / / /2012****Enquête caféiculteurs****I. IDENTIFICATION**

1. Nom du chef du ménage :.....

2. Province -----

3. Commune -----

4. Sexe du chef du ménage |\_\_\_\_|

*1. Masculin ; 2. Féminin*

5. Age du chef du ménage (années) |\_\_\_\_|

6. Niveau d'instruction du chef du ménage |\_\_\_\_|

*1. Primaire 2. Secondaire 3. Université 4. Sait lire et écrire (Kirundi) 5. Aucun*

7. Etes-vous membre d'une coopérative des caféiculteurs ?

*1 = oui 2 = non*

8. Si oui, quel est le nom de votre coopérative ? -----

9. Quel bloc (si applicable) |\_\_\_\_|

10. Quel groupe (si applicable) |\_\_\_\_|

11. Numéro d'identification (si applicable) |\_\_\_\_|

12. Etes-vous au courant du système de certification du café ?

*1 = oui 2 = non*

13. Si oui, faites-vous partie de la chaîne de certification ?

*1 = oui 2 = non*

14. Profession du chef de ménage |\_\_\_\_|

*1= agriculteur 2= chauffeur 3=commerçant 4=fonctionnaire 5=élève/étudiant 6= artisan  
7=commerce 8= Aucune 9=autres (à préciser) -----*

## II. COMPOSITION DU MENAGE

### 15. Autres membres résidants au sein du ménage

N°	Relation avec le chef de ménage 1 = chef du ménage 2 = mari/épouse 3 = enfant (biologique) 4 = enfant (adoptif) 5 = gendre/belle fille 6 = parent 7 = bon père/belle mère 8 = frère/sœur 9 = bon frère/belle sœur 10 = petit enfant 11 = grand parent 12 = oncle/tante 13 = Neveu/niece 14 = cousin/cousine 15 = ouvrier 16 = autre lien de parenté 17= autre sans lien	Sexe <i>1=Masculin</i> <i>2= Féminin</i>	Age (années)	Niveau d’instruction <i>1=primaire</i> <i>2=secondaire</i> <i>3=supérieur</i> <i>4= sait lire et écrire</i> <i>5=aucun</i>	Profession principale <i>1= agriculteur</i> <i>2= chauffeur</i> <i>3=fonctionnaire</i> <i>4=élève/étudiant</i> <i>5= artisan</i> <i>6=commerce</i> <i>7 = enseignant</i> <i>8=autres (à préciser)</i> -----
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

### III. TYPE D'HABITATION DU MENAGE

10. La maison est-elle la propriété du ménage ? [ ]

1. En propriété – achat 2. En propriété – héritage 3. En propriété – construite  
4. En propriété – Don ONG 5. En location 6. pas en propriété mais ne paie pas le loyer

16. Etat de l'habitat

<b>Toit</b> 1 = toit en tôles 2 = toit en tuiles 3 = toit en herbes 4 = toit en sheeting 5 = autre (spécifier) -----	<b>Murs</b> 1 = Blocs ciment 2 = briques en argiles cuites 3 = briques en argiles non cuites 4 = briques adobe	<b>Pavement</b> 1 = ciment 2 = briques 3 = pierre 4 = terre 5 = autre (spécifier) -----
[ ]	[ ]	[ ]

17. Equipement de la maison

Type d'équipement	Nombre	Valeur actuelle	Mode d'acquisition 1 = cash 2 = crédit 3 = don
Radio	[ ]	[ ]	[ ]
Télévision	[ ]	[ ]	[ ]
Téléphone mobile	[ ]	[ ]	[ ]
Frigo	[ ]	[ ]	[ ]
Vélo	[ ]	[ ]	[ ]
Moto	[ ]	[ ]	[ ]
Meubles	[ ]	[ ]	[ ]

### IV. TAILLE DE L'EXPLOITATION

18. Taille et utilisation de l'exploitation pour la culture du café et d'autres cultures ?

Superficie réservée aux cultures (ares)	Superficie. réservée aux pâturages (ares)	Superficie réservée au boisement (ares)	Superficie réservée au caféier (ares)	Superficie totale (ares)
[ ]	[ ]	[ ]	[ ]	[ ]

19. Nombre de plantations de caféier : |\_\_\_\_|

Plantation	Nombre d'arbres	Année de plantation	Si l'année est 2005 à 2011, quelle est la motivation de l'extension 1. <i>Prix</i> 2. <i>Coopérative</i> 3. <i>Certification</i> 4. <i>Administration</i> 5. <i>Autre (à préciser)</i> -----	La dernière taille de régénération date de quand (ans)
1	____	____		
2	____	____		
3	____	____		
4	____	____		
5	____	____		
6	____	____		
7	____	____		
8	____	____		
9	____	____		
10	____	____		
11	____	____		
12	____	____		

20. Est-ce votre ménage possède ses propres animaux et combien?

N°	Type d'élevage	Combien en propriété
1	Vache	____
2	Chèvres	____
3	Mouton	____
4	Poule	____
5	Porc	____
6	Autre (spécifier)-----	____

## V. TECHNIQUES CULTURALES

21. Depuis quand cultivez-vous du caféier (années)? |\_\_\_\_|

Techniques adoptées dans les plantations

Plantation (ordre du point )	Techniques culturales utilisées	Réponse 1= <i>oui</i> 2= <i>non</i>	Si oui depuis quand (année)	A quelle période appliquez-vous cette technique (mois 1..12)
1	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
2	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
3	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
4	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
5	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
6	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>

## Techniques adoptées dans les plantations (suite)

Plantation (ordre du point )	Techniques culturales utilisées	Réponse 1= <i>oui</i> 2= <i>non</i>	Si oui depuis quand (année)	A quelle période appliquez-vous cette technique (mois 1..12)
7	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
11	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
12	Sarclage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Taille d'entretien	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Paillage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Fertilisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Traitement phytosanitaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Arbres d'ombrage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Engrais vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

22. Si la fertilisation est adoptée, complétez ce tableau

Champ	Fertilisant	Quantité (kg)	Période d'application (mois)	Méthode d'application <i>1 = Poquet</i> <i>2 = A la volée</i> <i>3 = P ulvérisation</i>	Opérateur 1 = Fermier 2 = Monagri 3 = Leader
1	Compost	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de vache	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de porc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DAP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	NPK	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Urée	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	KCL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Chaux	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	Compost	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de vache	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de porc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DAP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	NPK	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Urée	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	KCL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Chaux	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	Compost	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de vache	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de porc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DAP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	NPK	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Urée	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	KCL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Chaux	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	Compost	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de vache	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de porc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DAP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	NPK	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Urée	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	KCL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Chaux	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5	Compost	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de vache	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Fumier de porc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	DAP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	NPK	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Urée	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	KCL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Chaux	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



	KCL								
	Chaux								

23. Si la fertilisation n'est pas du tout adoptée, pour quelle raison ? |\_\_\_\_|

1. coût élevé 2. Non disponible 3. Sol fertile 4. Autre (à préciser) -----

24. Si le traitement phytosanitaire est adopté, pour quel maladie/ravageur

1. antrachnose 2. antestia 3. autre (à préciser)

25. Si le traitement phytosanitaire n'est pas du tout appliqué, pour quelle raison ? |\_\_\_\_|

1. coût élevé 2. non disponible 3. autre (à préciser)-----

26. Si le paillage est fait, quel type de paillis utilisez-vous ? |\_\_\_\_|

1 = Feuilles de bananier 2 =Eragrostis 3 = Hyparrhenia 4 = Paille de riz 5 = Paille de sorgho 6 = Paille de maïs 7 = Autre ( à préciser) -----

## VI. PRATIQUES POST RECOLTE LIEES A LA QUALITE

27. Pratiques particulières post récolte adoptées pour augmenter la qualité du café (noter pour chaque plantation si possible)

Plantation	Récolte 1 = Récolte de cerises mures 2 = Sélection de la cerise sur la table 3 = Sélection de la cerise par flottaison 4 = Emballage dans des sacs neufs et propres 5 = Livraison de la cerise récoltée le même jour 6 = Autre (spécifier) -----	Quantité de cerises défectueuses (%)	Faites-vous du dépulchage parfois à domicile  1 = oui 2 = non	Si oui, comment le café est séché 1 = Par terre 2 = Sur ciment 3 = Plastique 4 = Ne sèche pas le café 5=autre (spécifier) ----- -
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

## VII. CONDITIONS DE TRAVAIL

28. Combien d'heures par jour vous, votre épouse, les autres membres de la famille et les autres consacrez-vous dans les parcelles de café

Personne	Saison A (Septembre- Janvier)	Saison B (Février-Mai)	Saison C (Juin – Août)
Chef ménage	[ ]	[ ]	[ ]
Epouse	[ ]	[ ]	[ ]
Enfants	[ ]	[ ]	[ ]
Autres membres de famille	[ ]	[ ]	[ ]
Travailleurs	[ ]	[ ]	[ ]
Autre (spécifier) -----	[ ]	[ ]	[ ]

## VIII. COUTS DE PRODUCTION

29. Quels sont pour l'année dernière les coûts de production de la culture de café (estimation des coûts annuels si possible)

N°	Rubrique	Coût
1	Plants	[ ]
2	Fertilisants	[ ]
3	Produits phytosanitaires	[ ]
4	Emballage (sacs, plastic, etc)	[ ]
5	Main d'œuvre	[ ]
6	Transport	[ ]
7	Location	[ ]
8	Autre 1 (spécifier) -----	[ ]
9	Autre 2 (spécifier) -----	[ ]
10	Autre 3 (spécifier) -----	[ ]
	<b>Total des dépenses</b>	[ ]

## IX. VENTE DE LA PRODUCTION

### 30. Destination de la production de café

Plantation	2008				2009			
	Destination	Forme	Quantité	Prix	Destination	Forme	Quantité	Prix
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

Plantation	2010				2011			
	Destination	Forme	Quantité	Prix	Destination	Forme	Quantité	Prix
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

#### Destination

- 1 = Station de dépulpage
- 2 = Commerçant
- 3 = Usurier
- 4 = Centre de collecte

#### Forme

- 1 = Cerises mélangées (cerises mûres et cerises vertes)
- 2 = Cerises mûres seulement
- 3 = Cerises nettoyées
- 4 = Parche
- 5 = Sur pied

**X. LOYAUTE**

31. Depuis combien de temps êtes-vous membre de la coopérative (station de lavage)?

[\_\_\_\_\_]

1. Moins de 6 mois 2. Entre 6 mois et une année 3. 1 – 2 ans 4. 2 – 3 ans 5. 3 – 4ans

32. Les éléments qui suivent concernent votre engagement. Pouvez-vous nous indiquer ceux en quoi vous êtes d'accord ?

	Totalement désaccord	Désaccord	Neutre	D'accord	Totalement d'accord
Je suis très attaché à la coopérative (station de lavage)	[_____]	[_____]	[_____]	[_____]	[_____]
J'ai envie de continuer la relation avec la coopérative(station de lavage)	[_____]	[_____]	[_____]	[_____]	[_____]
J'aimerais rester avec la coopérative pour au moins 3 ans	[_____]	[_____]	[_____]	[_____]	[_____]
Il est plus probable que je quitte la coopérative quand une meilleure opportunité se présentera ailleurs	[_____]	[_____]	[_____]	[_____]	[_____]
Je vais quitter la coopérative le plutôt possible	[_____]	[_____]	[_____]	[_____]	[_____]
Je ne voudrais pas recommander à quelqu'un d'autre que cette coopérative est une bonne place pour travailler	[_____]	[_____]	[_____]	[_____]	[_____]
Je ne crois pas que je continue la relation avec la coopérative	[_____]	[_____]	[_____]	[_____]	[_____]
Je n'ai pas envie de résoudre les conflits à l'intérieur de la coopérative	[_____]	[_____]	[_____]	[_____]	[_____]
Je souhaiterais trouver des solutions aux problèmes	[_____]	[_____]	[_____]	[_____]	[_____]
Je recommanderais cette coopérative au non membre comme société avec laquelle on peut travailler	[_____]	[_____]	[_____]	[_____]	[_____]

33. Vendez-vous toute votre production de café à la coopérative ? [\_\_\_\_\_]

1 = Oui 2 = non 3 = Veux pas le dire

34. Imaginez pouvoir avoir un meilleur prix pour votre café. A quel prix décideriez-vous de vendre votre café à quelqu'un d'autre qu'à votre coopérative? [\_\_\_\_\_]

1 = Quand le prix est de 50 FBU supérieur à celui de la société

2 = Quand le prix est de 100 FBU supérieur à celui de la société

3 = Quand le prix est de 150 FBU supérieur à celui de la société

4 = Quand le prix est de 200 FBU supérieur à celui de la société

5 = autre (spécifier) -----

35. Quelles sont les raisons en dehors du prix qui vous pousseraient à vendre votre café à quelqu'un d'autre qu'à votre coopérative (station de lavage)? -----  
-----

## XI. REVENU DU MENAGE

36. Au cours des douze derniers moi, vous ou un autre membre du ménage aurait-il travaillé pour une autre personne, exploitation ou société ? |\_\_\_\_|

1 = oui 2 = non

37. Si oui, enregistrer les données dans le tableau suivant

N°	Description de l'emploi 1. <i>Fermier</i> 2. <i>Enseignant</i> 3. <i>Transport</i> 4. <i>Vendeur</i> 5. <i>Travailleur d'usine</i> 6. <i>Artisan</i> 7. <i>Commerce</i> 8. <i>Sans emploi</i> 9. <i>Autre (spécifier) -----</i>	Temps consacré (jours)	Salaire (FBU/jour)
1	____	____	____
2	____	____	____
3	____	____	____
4	____	____	____
5	____	____	____
6	____	____	____
7	____	____	____
8	____	____	____
9	____	____	____
10	____	____	____

38. Quelle est la principale activité (source) qui a procuré à votre ménage le plus gros revenu monétaire l'année dernière ? |\_\_\_\_|

1 = cultures vivrières 2 = café 3 = Elevage 4 = emploi 5 = commerce 6 = vente de main d'œuvre 7 = autre (spécifier) -----

39. Quels sont les articles sur lesquels votre ménage a consacré des dépenses l'année dernière ?

Dépense/article	Valeur estimée
1. Nourriture	____
2. Matériel autre que la nourriture	____
3. Education	____
4. Investissement	____
5. Construction	____
6. Soins médicaux	____
7. Transport	____
8. Loisir	____
88. Autre (spécifier) -----	____

40. Qui prend généralement la décision sur les dépenses (frais) à faire ?

N°	Objet de la dépense	Qui décide 1 = chef de ménage 2 = épouse 3 = les deux
1	Production du ménage	____
2	Nourriture	____
3	Investissement	____
4	Education des enfants	____
5	Demande de crédit	____
6	Autre (spécifier) -----	____

41. A quel montant estimez-vous votre revenu annuel ? |\_\_\_\_|

42. Est-ce que votre ménage a un quelconque emprunt à l'extérieur [ \_\_\_\_\_ ]

1 = oui 2 = non

43. Si oui, complétez le tableau suivant

Chez qui ?	Réponse 1 = oui 2 = non	Montant	Intérêt (%)	Utilisation 1 = nourriture pour le ménage 2 = investissement dans l'agriculture 3 = construction d'une maison 4 = école des enfants 5 = achat des animaux 6 = autre (spécifier) ----- --	Comment rembourser 1 = monnaie 2 = main d'œuvre 3 = monnaie et main d'œuvre 4 = autre (spécifier) ----- --	Capable de rembourser dans les délais  1 = oui 2 = non 3 = pas de termes d'accord 4 = veux pas le dire
Banque commerciale						
Micro finance						
Parenté						
Ami						
Voisin						
Coopérative						
Autre (spécifier) -----						

44. Votre ménage a-t-il de l'épargne ? [ \_\_\_\_\_ ]

1 = oui 2 = non 3 = ne veut rien dire

45. Si oui combien ? [ \_\_\_\_\_ ]

46. Votre ménage aurait-il prêté de l'argent à quelqu'un ? [ \_\_\_\_\_ ]

1 = oui 2 = non 3 = ne veut rien dire

47. Si oui combien ? [ \_\_\_\_\_ ]

**XII. PARTICIPATION**

48. Combien de fois avez-vous assisté aux réunions de la coopérative pendant l'année |\_\_\_\_|

49. Combien de réunions organisées par la coopérative au cours de l'année |\_\_\_\_|

*1 = un 2 = deux 3 = trois 4 = plus de trois 5 = ne sais pas*

50. Combien de fois avez-vous assisté à la réunion de votre groupe de caféiculteurs |\_\_\_\_|

51. Combien de réunions organisées par votre groupe de caféiculteurs cette année |\_\_\_\_|

*1 = un 2 = deux 3 = trois 4 = plus de trois 5 = ne sais pas*

52. Les éléments qui suivent concernent votre participation. Pouvez-vous nous indiquer ceux en quoi vous êtes d'accord ?

<b>Eléments</b>	<b>Totalement désaccord</b>	<b>Désaccord</b>	<b>Neutre</b>	<b>D'accord</b>	<b>Totalement d'accord</b>
J'assiste à toutes les réunions de l'association	[ ]	[ ]	[ ]	[ ]	[ ]
Si j'assiste je ne parle jamais	[ ]	[ ]	[ ]	[ ]	[ ]
Je ne trouve pas qu'il soit nécessaire de donner mon opinion	[ ]	[ ]	[ ]	[ ]	[ ]
Quand des décisions sont prises j'en suis toujours informé après	[ ]	[ ]	[ ]	[ ]	[ ]
Je veux toujours savoir quand des décisions doivent être prises	[ ]	[ ]	[ ]	[ ]	[ ]
Quand j'assiste à une réunion mon opinion est toujours prise en compte	[ ]	[ ]	[ ]	[ ]	[ ]
Quand j'assiste à une réunion mon opinion n'influence jamais les décisions	[ ]	[ ]	[ ]	[ ]	[ ]
Je trouve qu'il est important que je donne mon opinion	[ ]	[ ]	[ ]	[ ]	[ ]
Je trouve qu'il est important d'influencer les décisions	[ ]	[ ]	[ ]	[ ]	[ ]
Je prends toujours des initiatives pour entreprendre des tâches	[ ]	[ ]	[ ]	[ ]	[ ]
Ma voix influence toujours les décisions du groupe	[ ]	[ ]	[ ]	[ ]	[ ]
Je me considère très important pour la coopérative	[ ]	[ ]	[ ]	[ ]	[ ]
Je me considère avoir beaucoup d'influence sur les décisions à être prises par la coopérative	[ ]	[ ]	[ ]	[ ]	[ ]

### XIII. CONNAISSANCES

53. Si vous êtes membre d'une coopérative de caféiculteurs (si oui à la question ), pensez-vous que votre ménage a bénéficié de certains avantages à être membre de la coopérative ?

|\_\_\_\_|

1 = oui 2 = non 3 = ne sais pas

54. Si oui complétez le tableau suivant

N°	Bénéfice	Réponse 1 = oui 2 = non	Si vous aviez à payer ce bénéfice, combien paieriez-vous (FBU)
1	Assistance technique	____	____
2	Formation	____	____
3	Crédit	____	____
4	Soins médicaux	____	____
5	Infrastructure	____	____
6	Autre1, spécifiez -----	____	____
7	Autre2, spécifiez-----	____	____
8	Autre3, spécifiez-----	____	____

55. De qui détenez-vous l'information ?

N°	Information au sujet de	____
1	Prix du café	____
2	Décisions prises dans la coopérative	____
3	Production de café	____
4	Formation	____
5	Code conduite Utz	____
6	Autre (spécifier) -----	____

1 = coopérative 2 = assistant technique 3 = voisins 4 = membres de la famille

5 = exportateur 6 = le leader du groupe de fermiers 7 = ONG

8 = autre (spécifier) -----

56. Pouvez-vous indiquer si les questions suivantes sont vraies ou fausses

Questions	1 = vrai 2 = faux 3 = ne sait pas
1. Les décisions sont prises la direction générale de la SOGESTAL	____
2. SODECO achète le café de la station	____
3. Le comité est élu tous les 3 ans (si coopérative)	____
4. La SOGESTAL pré – finance	____
5. La qualité des cerises influence le prix du café	____
6. SOGESTAL vend le café directement au consommateur	____
7. Le degré de maturité des cerises n'est pas important quand je vend mes cerises à la station	____
8. Les caféiculteurs sont payés après l'exportation du café	____

57. Est-ce qu'il y a quelqu'un de la famille qui aurait suivi une formation au cours de l'année écoulée ?

Type de formation	Réponse 1 = oui 2 = non	Si oui, qui a assuré la formation ? 1 = SOGESTAL 2 = Agent de vulgarisation 3 = ONG 4 = autre (spécifier) -----
Bonnes pratiques agricoles	<input type="checkbox"/>	<input type="checkbox"/>
Code de conduite UTZ	<input type="checkbox"/>	<input type="checkbox"/>
Utilisation des produits chimiques	<input type="checkbox"/>	<input type="checkbox"/>
Egalité du genre	<input type="checkbox"/>	<input type="checkbox"/>
Secourisme	<input type="checkbox"/>	<input type="checkbox"/>
Autre (spécifier) -----	<input type="checkbox"/>	<input type="checkbox"/>

#### XIV. PERCEPTIONS DU BIEN ETRE SOCIAL

58. Les éléments suivants concernent les perceptions du travail en relation avec le bien être social. Pouvez-vous nous indiquer ceux en quoi vous êtes d'accord ?

	Totalement désaccord	Désaccord	Neutre	D'accord	Totalement d'accord
<b>1. Perception relative du standard de vie</b>					
Je suis satisfait avec les conditions de vie de mon ménage	[ ]	[ ]	[ ]	[ ]	[ ]
<b>2. Satisfaction de l'emploi</b>	[ ]				
Je n'aime pas être caféiculteur	[ ]	[ ]	[ ]	[ ]	[ ]
Je suis très satisfait d'être caféiculteur	[ ]	[ ]	[ ]	[ ]	[ ]
Etre caféiculteur m'offre suffisamment d'opportunités	[ ]	[ ]	[ ]	[ ]	[ ]
Je veux faire autre chose que la culture du café	[ ]	[ ]	[ ]	[ ]	[ ]
<b>3. Sécurité de l'emploi</b>	[ ]				
Je suis capable de rester caféiculteur aussi longtemps que je voudrais	[ ]	[ ]	[ ]	[ ]	[ ]
Je suis sûre que je peux vendre mon café après chaque récolte	[ ]	[ ]	[ ]	[ ]	[ ]
Etre caféiculteur n'est pas sécurisant du tout	[ ]	[ ]	[ ]	[ ]	[ ]
La société m'offre un marché sûr	[ ]	[ ]	[ ]	[ ]	[ ]
<b>4. Redistribution du revenu (équité)</b>	[ ]				
Je reçois un revenu juste pour le travail que je fais	[ ]	[ ]	[ ]	[ ]	[ ]
Je ne reçois pas assez de revenu pour l'expérience que j'ai	[ ]	[ ]	[ ]	[ ]	[ ]
Je reçois un revenu satisfaisant pour le temps que je dépense au travail	[ ]	[ ]	[ ]	[ ]	[ ]
Je reçois assez de revenu pour vivre avec ma famille	[ ]	[ ]	[ ]	[ ]	[ ]
Je reçois un prix juste pour la qualité de café que je produis	[ ]	[ ]	[ ]	[ ]	[ ]
Si vous étiez amené à mettre le prix de la cerise au producteur du café qui pourrait être vendu, à quel prix le mettriez-vous ? [ ]					

## **ETUDE DE KAGOMBE : Guide d'entretien**

### **1. Entretien avec le personnel de la station de lavage de Kagombe**

- Début de la station de lavage (année) et année où la station a été certifiée ;
- Le personnel de la station (affectation du personnel selon les tâches, leur niveau d'étude, nombre, etc.) ;
- Rayon d'action de la station et la structuration des membres (collines couvertes par la station, zones et communes, répartition en blocs et d'autres subdivisions des caféiculteurs, le nombre de caféiculteurs par bloc et par sous-unité et leur gestion administrative et technique) ;
- Conditions exigées pour être membre vendre les cerises au niveau de la station (principaux éléments du code de conduite, disposition des bâtiments, l'arrangement de certains produits, matériels et équipements, techniques culturales exigées,...) ;
- Encadrement des caféiculteurs (nombre de formations techniques, qui les forme, combien de fois par mois, par an, etc. sur quoi et comment vérifiez-vous si les caféiculteurs pratiquent réellement les techniques culturales apprises) ;
- Description des processus d'obtention du café parche depuis le champ du caféiculteur jusqu'à la station de lavage, différentes méthodes de séparation, grading, différentes techniques de séchage,... (traçabilité du café certifié) ;
- Comment sont obtenus les plantules de caféiers utilisés dans les champs des caféiculteurs ;
- Types de produits prohibés pour la fertilisation et les lister (pourquoi) ;
- Nombre de fois on reçoit les évaluateurs d'UTZ et les principaux points vérifiés ;
- Dispositifs mise en place pour protéger l'environnement ;
- Raisons incitant les caféiculteurs à adhérer massivement au programme de certification et adoption du code de conduite d'UTZ certifié ;
- Quantité de cerises produites en fonction d'années avant la certification et après la certification, le nombre de membres avant la certification et après la certification, les différents bonus obtenus, les quantités d'intrants reçus, Production de café parche en fonction des années et de grade) voir la fiche en annexe

### **2. Personnel de la coopérative de Kagombe**

- Début de la mise en place effective de la coopérative de Kagombe (année de commencement d'activités) ;
- La structuration de la coopérative de Kagombe (gestion administrative et financière) ;
- Conditions d'adhésion à la coopérative de Kagombe (si les conditions d'adhésion sont différentes de celles de vendre les cerises au niveau de la station de lavage et si les autres caféiculteurs ne vendant leurs cerises à la station de Kagombe peuvent devenir membre de cette coopérative, montant de cotisation, ...) ;
- Evolution des membres effectifs en fonction d'années
- Avantages tirés dans le fait d'adhésion à la coopérative (bénéfices financiers, avantages sociaux : carte d'assurance maladies, etc.).
- Conditions d'octroi des crédits et le plafond à ne pas dépasser

- Nombre de membres ayant reçus les crédits, le taux d'intérêt annuel et les conditions de remboursement, les garantis exigés, etc.
- Pourquoi le nombre de membres de la coopérative diffère-t-il de celui vendeurs de cerises à la station de Kagombe, etc.
- Autres activités exécutées par la coopérative de Kagombe (génératrices de recettes ou non réalisées par la coopérative de Kagombe) ;
- Les liens existant entre la coopérative MFASHA NGUFASHE et celle de Kagombe.

### **3. Directeur Général de Sogestal Kirundo-Muyinga**

- Description de différentes démarches de l'obtention de certification de la station de Kagombe ;
- Conditions exigées par UTZ certified pour certifier une station
- Types de contrats signés ;
- Temps pour l'obtention du contrat de certification (durée des démarches pour l'obtention des documents, durée entre l'introduction du dossier et la signature du contrat) ;
- Coûts engagés pour avoir la certification (Coûts initiaux : coûts relatifs aux différentes visites d'inspection pour les consultants d'UTZ, frais payés pour introduire les dossiers de demande de certification, frais d'adhésion à UTZ certified, coûts relatifs à la formation (paiement des formateurs, des formés, aux travailleurs de la station pour entrer dans la ligne de conduite d'UTZ, aux caféiculteurs, visite probable à l'étranger pour signer les contrats, etc. ;
- Les dons reçus ou supports financiers de la part d'UTZ certified (matériels, équipements, frais pour la formation, bonus) ;
- Donnez les différents coûts annuels supportés par la station après la certification (coûts récurrents payés annuellement: abonnement annuel, frais de renouvellement de contrats et frais payés aux consultants d'UTZ lors de l'évaluation : frais de logement, de restauration Per Diem, transports, autres frais) ;
- Différentes étapes suivies du café parche venu de la station de Kagombe (déparchage, ensachage (type de label utilisé pour le différencier des autres cafés venus des autres stations), lieu de vente (destinations) ;
- Techniques de déparchage, de grading et des conditions de conservation du café certifié au niveau de la SODECO avant la vente si elles diffèrent avec le café non certifié (si c'est le cas, le prix payé pour déparcher le café certifié et celui du café non certifié) ;
- S'il y a des visites de la part des consultants UTZ certified au niveau de la SODECO ;
- Données de vente des fèves issues de la certification et non certifiées (Prix de fèves (café déparché) issues de la station de Kagombe et origine des acheteurs ainsi que celui des autres stations et origine des acheteurs ;
- Difficultés ou facilités rencontrées lors de la vente du café certifié (issu de la station de Kagombe) et non certifié (issu des autres stations) ;

- Bénéfices tirés du programme de la certification par UTZ certified par rapport aux stations non certifiées ;
- Autres avantages comparatifs obtenus lorsque la station est certifiée par rapport à celle qui n'est pas certifiée (chez les caféiculteurs, au niveau de la SOGESTAL) ;
- Défis de mise en place du programme de certification et d'autres contraintes empêchant l'extension de la certification à d'autres stations de lavage au niveau de la Sogestal Kirundo-Muyinga ;
- Remarquez-vous l'augmentation de la production du café et / ou la diminution du goût de pomme de terre dues à la mise en place du programme de certification à Kagombe;
- Raisons incitant les caféiculteurs à adhérer massivement au programme de certification et adoption du code de conduite d'UTZ certified ;
- Comment assurez la traçabilité du café certifié à Kagombe ;
- D'autres suggestions (si la vente du café certifié est libre et / ou ouverte à d'autres acheteurs non membres d'UTZ certified).







## Annex 2

Hort Annex A: Training topics and attendance in preparation for demo fields management and grants									
Theme	# provinces	Province	# groups	Attendance			# sessions	X Att by session	% of women
				H	F	T			
Raised beds	2	BUBANZA MAKAMBA	4	16	27	43	4	10,75	62,79
Planting density	4	BUJA RUR. MUYINGA BUBANZA MAKAMBA	8	37	70	107	10	10,7	65,42
Trellising	2	MWARO BUJA RUR.	2	1	33	34	2	17	97,05
Management of Demo plots (trellising, weeding,)	6	GITEGA MWARO NGOZI BUBANZA MAKAMBA BUJA RUR.	15 Ass+indiv.	128	102	230	16	14,37	44,34
Nurseries	6	NGOZI BUBANZA BURURI MAKAMBA GITEGA MWARO	22 Ass+indiv.	114	266	380	22	17,27	70
hygiene, solar drying and food canning	4	BUBANZA MAKAMBA KIRUNDO CIBITOKÉ	1 Ass+indiv.	64	96	160	4	40	60
Irrigation	4	MAKAMBA MUYINGA BURURI BUJA RUR.	5	23	31	54	5	10,8	57,40
Spraying and applying fertilizers	4	MAKAMBA BUBANZA MURAMVYA GITEGA	7	27	50	77	8	9,62	64,93
<b>TOTAL</b>	<b>11</b>		<b>64</b>	<b>410</b>	<b>675</b>	<b>1085</b>	<b>71</b>	<b>15.28</b>	<b>62.21</b>

**Hort Annex B: Training on Good Agricultural Practices**

Theme	# provinces	Province	# groups	Attendance			# sessions	X Att by session	% of women
				H	F	T			
Harvest	4	MURAMVYA BUJA RUR. GITEGA MUYINGA	9	42	102	144	14	10,8	70.83
Data collection on Demo plots	3	BUBANZA KIRUNDO BURURI	4	9	42	51	4	12.75	82.35
Wooden boxes	1	KIRUNDO	7 Ass+ part.	45	49	94	7	13,42	52.13
Branding and marking	1	MAKAMBA	1	3	4	7	1	7	57.14
<b>TOTAL</b>	<b>4</b>		<b>21</b>	<b>99</b>	<b>197</b>	<b>296</b>	<b>26</b>	<b>11</b>	<b>66.55</b>

**Hort Annex C: Follow up of field activities by ADCs and BAP Hort team**

Theme	# provinces	Province	# groups	Attendance			# sessions	X Att by session	% of women
				H	F	T			
Assessment of activities by ADCs	11	KAYANZA NGOZI KIRUNDO MAKAMBA MUYINGA BUJA RUR. BURURI BUBANZA MURAMVYA GITEGA MWARO	41	195	475	670	68	9,85	70,89
<b>TOTAL</b>	<b>11</b>		<b>41</b>	<b>195</b>	<b>475</b>	<b>670</b>	<b>68</b>	<b>9.85</b>	<b>70.89</b>

Hort Annexe D: Special events attendance									
Theme	# provinces	Province	# groups	Attendance			# sessions	X Att by session	% of women
				H	F	T			
Radio broadcast on field visits and the use of revenues from horticultural activities since 2010	1	MWARO	3	0	34	34	3	11,33	100
Open Field days	1	MAKAMBA	4	8	7	15	1	15	46,66
	1	Muramvya	1	2	18	20	1	20	90
	1	Bururi	5	5	17	22	1	22	77.27
<b>TOTAL</b>	<b>4</b>		<b>13</b>	<b>15</b>	<b>76</b>	<b>91</b>	<b>6</b>	<b>15.17</b>	<b>83.52</b>

## APPROVED GRANTS

## I. Coffee sector

N	Requesting Organization	Date Received	Project Location	Project Activity	Total Cost (USD)	Beneficiary Contribution (USD)	%	Financing Requested (USD)	%	Status
1.	APROCO	2/5/2012	Bujumbura Province	Participation in 24th Conference and Exposition of the Specialty Coffee Association of America (SCAA) in Portland Oregon from 18-23 April 2012	\$ 4,687	\$ 1,172	25%	\$ 2,944	63%	Approved
2.	SEGEC	2/5/2012	Bujumbura Province	Participation SCAA 2012 – Portland, Oregon	\$ 4,077	\$ 1,059	26%	\$ 3,018	74%	Approved
3.	SIVCA	9/3/2012	Ngozi province	Participation SCAA 2012 – Portland, Oregon	\$ 4,687	\$ 1,737	37%	\$ 2,950	63%	Approved
4.	Express Coffee	12/3/2012	Bujumbura Province	Participation SCAA 2012 – Portland, Oregon	\$ 4,546	\$ 1,172	26%	\$ 3,374	74%	Approved
	<b>Total</b>				<b>\$ 17,997</b>	<b>\$ 5,140</b>		<b>\$ 12,286</b>		

## II. Microenterprise Development (Cross cutting)

N	Requesting Organization	Date Received	Project Location	Project Activity	Total Cost (Fbu)	Beneficiary Contribution (Fbu)	%	Financing Requested (Fbu)	%	Financing Requested (USD)	STATUS
1.	PADS	10-Nov-11	Muyinga Province	Production of high quality honey	10,043,860	2,476,600	25%	7,567,260	75%	\$5,444	Approved
2.	GPAP	22/06/2011	Muyinga Province	Production of high quality honey	5,678,000	929,000	16%	4,749,000	84%	\$3,392	Approved
	<b>Total</b>				<b>15,721,860</b>	<b>3,405,600</b>		<b>12,316,260</b>		<b>\$ 8,836</b>	

### III. Dairy sector

N	Requesting Organization	Date Received	Project Location	Project Activity	Total Cost (Fbu)	Beneficiary Contribution (Fbu)	%	Financing Requested (Fbu)	%	Financing Requested (USD)	Status
1.	Burundi Bio Agricultural Community (BBAC)	15/08/2012	Muramvya province	Improvement Dairy production through a veterinary inputs pharmacy	14,222,000	2,540,000	18%	11,682,000	82%	\$ 8,404	Approved
	<b>Total</b>				<b>14,222,000</b>	<b>2,540,000</b>		<b>11,682,000</b>		<b>\$8,404</b>	

### GRANT REQUESTS IN PROCESS

#### I. COFFEE SECTOR

N	Requesting Organization	Date Received	Project Location	Project Activity	Total Cost (Fbu)	Beneficiary Contribution (Fbu)	%	Financing Requested (Fbu)	%	Financing Requested (USD)	STATUS
1.	SIVCA	28/06/2012	Ngozi Province	Coffee quality Center	163,041,072	44,707,030	27%	118,334,042	73%	\$84,500	In process
	Total				<b>163,041,072</b>	<b>44,707,030</b>		<b>118,334,042</b>		<b>\$84,500</b>	

#### II. DAIRY SECTOR

N	Requesting Organization	Date Received	Project Location	Project Activity	Total Cost (Fbu)	Beneficiary Contribution (Fbu)	%	Financing Requested (Fbu)	%	Financing Requested (USD)	STATUS
1.	Fromagerie Saint Ferdinand	9/07/2012	Ngozi Province	Equipments of cheese processing	68,671,412	27,255,252	40%	41,416,160	60%	\$ 29,583	In process

2.	Collectif des associations des éleveurs- Dukamirehamwe	19/01/2012	Ngozi Province	Improve milk quality by purchasing collection and quality testing equipment	45,964,000	35,400,000	77%	10,654,000	23%	\$ 7,610	In process
<b>Total</b>					<b>114,635,412</b>	<b>62,655,252</b>		<b>52,070,160</b>		<b>\$37,193</b>	

N.	Requesting Organization	Date Received	Date Rejected	Project Location	Project Activity	Total Cost (Fbu)	Beneficiary Contribution (Fbu)	Financing Requested (Fbu)	Financing Requested (USD)	Status
1.	Sogestal Kirundo - Muyinga	26-Aug-11	25-April-2012	Commune Mwakiro/ Province Muyinga	Upgrade waste water effluent control infrastructure/ rain water collection system	8,958,700	3,998,700	4,960,000	\$ 3,741	Rejected
2.	ADENAK	25-May-11	23-March-2012	Kayanza Provicne	Installation of a Fruit processing plant to create fruit juices	420,065,000	63,815,000	356,250,000	\$254,464	Rejected
<b>Total</b>						<b>438,009,400</b>	<b>3,998,700</b>	<b>361,210,000</b>	<b>\$258,205</b>	