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Horticulture Sub Sector Value Chain Studies

Tropical and Temperate Climate Fruits and Vegetables
Tropical and Highland Cut Flowers and Ornamental Plants

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Author: Luis Flores, Michigan State University
Adrien Sibomana, Consultant

17 Rue de Coton, Quartier GATOKE
BP 1643 Bujumbura, Burundi

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List of Acronyms

ATB	Agro-Trading Business (Rose Exporting Company)
BAP	Burundi Agribusiness Program/ Programme pour la Promotion de l'Agro-Industrie et des Entreprises Rurales
BBN	Burundi Bureau of Standards/'Bureau Burundais de Normes
DME	Exporting Company of Exotic Fruits and Vegetables
ETRO, S.A.	Exporting Company of Fruits and Vegetables
FBU	Burundian Franc
FRUITO	Juice processing company
GoB	Government of Burundi
Ha	Hectares
ISABU	National Institute of Agricultural Sciences
masl	Meters above sea level
MINAGRI	Ministry of Agriculture/'Ministère de l'Agriculture
NGO	Non-Governmental Organization
PAGE	Economic Management Support Program/'Programme d'Appui à la Gestion Economique
REGIDESO	Water and Electricity Production and Distribution Authority
SOBUGEA	Burundian Airport Management Authority/Société Burundaise de Gestion Aéroportuaire
STABEX	Système de Stabilisation des Recettes d'Exportation
TBD	To be determined
UAE	United Arab Emirates
UK	United Kingdom
US$	United States dollar
USAID	United States Agency for International Development
VC	Value Chain

1. Introduction

A decade ago, Burundi entered a period of economic and political turmoil during which trading of fruits and vegetable declined along with other products. The horticulture sector functioned within a closed market with limited international exchange of fresh imports or exports. Foreign exchange earnings from horticultural exports dried-up as did investment in the sector. In contrast, however, this was a booming time for Kenya, Uganda, South Africa and other countries in Northern Africa, the Middle East, Asia and Latin-America. By 1997 these countries had enjoyed close to two decades of formidable horticulture export growth supplying developed country markets mainly in Eastern Europe.[1] Today, these countries continue to develop their existing long-term relationships with their clients, leaving narrower windows of opportunity for new competitors, such as Burundi.

Today, Burundi is enjoying a time of improved political stability and the opportunity to revitalize what was considered to be a thriving horticulture sector in the late 1980's and early 1990's. This time, companies that have survived the prolonged period of economic and political instability, will need to make major adjustments in order for Burundi to leap from its current state of un-coordinated opportunistic horticultural exports linked to subsistence agriculture, to a more aggressive entrepreneurial production and export-based system. As Burundi "missed the ship" in the 1990s and early 2000s, it is important to realize that, not only were its comparative advantages in rich soils, diverse microclimates and abundance of water not exploited, but it also lost the valuable opportunity to grow the domestic skills and knowledge base that is necessary to support a thriving horticultural export industry. The areas where this lack of local know-how are most felt are product-specific agronomic capacity, harvest and post-harvest trained labor, supply and cold chain management and the capacity of the smallest horticultural companies to manage market access requirements.

This study addresses the potential for rapid growth in two value chains in the horticulture subsector: tropical and temperate weather fruits and vegetables, and tropical and highland cut flowers and ornamental plants. The identification of these two value chains was conducted after a careful preliminary analysis of the value chains where Burundi can succeed in international, regional and local markets.[2] Products under these categories share three major common characteristics: 1) they are short-cycle which mean that intensive production programs will yield rapid results; 2) they have demonstrated

[1] This report will not delve into those details as that has been addressed by previous horticulture sub sector reports.

[2] Initially, the report was to have been organized to address three value chains: fruit, vegetables and cut flowers/ornamentals. However, the very high degree of overlap between fruit and vegetable exporters and the still marginal nature of vegetable exports mean that, for analytical purpose, there is little difference between these two value chains. Therefore they have been grouped together for the purpose of this analysis.

profitability based on firm price parameters in targeted markets, despite current high airfreight costs; and 3) they make good use of Burundi's principal assets, which are favorable agro-ecological conditions and available labor for companies to increase scale of production over time.

Because of the state of development of the horticulture sector and the diverse nature of the two covered value chains, each of which contain several products, this analysis differs from other value chain assessments addressing individual products such as coffee or tea. Section 2 provides the rationale for this different approach. Section 3 provides a brief reflection on Burundi's comparative agro-ecological advantages as reflected in previous studies and reiterated during key informant interviews. Section 4 presents market demand analysis for the fruits and vegetables value chain with the market identification efforts carried out on a company-by-company basis at the international, regional and local level. Section 5 presents the value chain analysis and map of the fruit and vegetable value. Within section 5, the major constraints to growth are addressed. Section 6 presents the market demand analysis for the cut flowers and ornamental plants value chain continuing with a detailed assessment of primary and secondary activities and major constraints to growth. Section 7 gathers the most commonly shared opinions across interviewees on the vision the horticulture sector as a whole seen by the representatives of its two main value chains. This section presents the actor's view or 'vision' of realistic objectives that can be attained over the next 4 years in the horticultural sector as a whole. Section 8 presents a three-pronged action plan for the private sector and other horticulture stakeholders to work towards results during the lifetime of the BAP project and beyond.

Finally, annexes are included in Section 9 with the list of interviewees, a Bumper's Amendment analysis and other important support documents used in this assessment.

2. Methodology

This report focuses on the two value chains that are the pillars of the formal horticultural "industry" in Burundi. The horticultural sector itself contains at lest 11 functioning companies dealing in some 30 different products that are cultivated and traded on differing scales that range from subsistence agriculture, through informal growers and traders for the local markets, to formal export initiatives. The nature of the two value chains treated here is substantially different from more well defined value chains, such as coffee and tea. One major difference is that the wide variety of products treated in each means that there are a proliferation of product-specific technical requirements that create a high degree of functional diversity in each value chain. The approach taken in this report is to identify broader areas of constraints and opportunities among the different products in each value chain, not to enter into the technical details of each of the 30 potential products.

Secondly, because of the nascent and highly fragmented nature of the two value chains covered, many of the normal value chain type business service relationships that are common in the horticulture sector in other countries are absent in the Burundian environment. Thus the value chains are largely governed by firm-specific "coping strategies" with high degrees of internalization and the involvement of foreign service providers. This complicated the very notion of "value chain" since, to a large extent, the horticultural value chains tend less to be very simple vertically integrated systems with a small number of market transactions between production and consumption in destination markets.

As a result of the peculiar characteristics of the two value chains, while the report analyzes the two value chains separately, its "vision" and action plan are developed at the level of the horticulture sector as a whole. The decision to structure the analysis in this manner is a logical consequence that reflects the high degree of commonality in the constraints analysis between the two value chains and the interchangeability of many of the companies that are implicated in each of them.

Given the importance of firm-level strategies adopted by the eleven companies interviewed for this report, the approach taken here has been to develop value chains maps and constraint analysis based primarily on detailed interviews with company managers, which were complemented by surveys of producers. The interviews with managers were used to obtain detailed information on how each company has managed to organize production, assembly and export, largely in the absence of supporting infrastructure and specialized service providers. Producer interviews were used to assess basic production capacities.

Information gathered from these primary sources, together with literature review has been synthesized to identify in the final action plan, a common vision across companies, other stakeholders and the Government of Burundi (GoB) concerning the future of the companies in the two value chains. The objective of this vision is to aid all these actors in the preparation of a sustainable plan for modernization and increased market access at the international and regional level. We briefly review below the information collection actions undertaken during the consultant's mission.

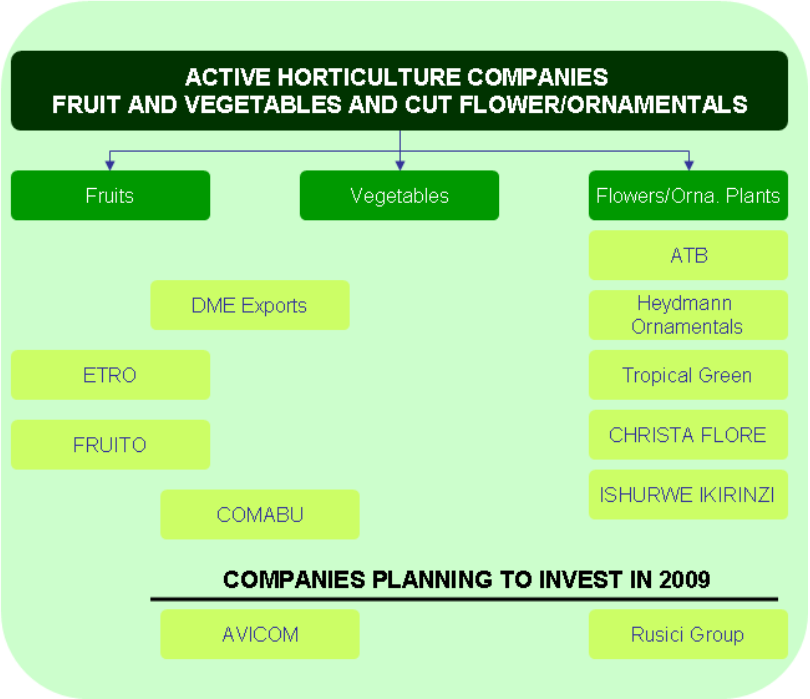
2.1 Literature and background review

The analysis incorporates the most recent assessments addressing the horticulture sector in Burundi. Rich baseline accounts were found addressing the challenges and performance of existing companies in supplying international markets. One of the most important sources has been the data from the Société Burundaise de Gestion Aéroportuaire (SOBUGEA). This information was first pooled into a mapping exercise to assess the characteristics of actors at the input supply, production, processing, distribution, marketing and export stages of the two value chains.

2.2 Key informant and horticulture company interviews

The consultant was concerned with gathering first hand information from key informants on the challenges faced in different components of the value chain. As such, different points of view on a number of issues affecting value chain organization were gathered from more than 15 interviews conducted from December 3, 2007 through January 31 2008. Among the interviewees were Ministry of Agriculture's (MINAGRI) officials working in agencies Burundi Bureau of Standards (BBN), provincial MINAGRI authorities in Muramvya (a prominent agricultural production area); GoB officials at the Régie de Production et de Distribution d'Eau et d'Electricité (REGIDESO); the National Institute of Agricultural Sciences (ISABU) and key officials of non-governmental organizations (NGO's) such as World Bank PAGE Project, the director of STABEX and the manager of STABEX's Maison de l'Horticulture.

Fig. 1 Burundi Horticulture Sector



Additionally, 9 owner/managers of 11 active companies with current investment and exports in horticulture were interviewed. An interview was also conducted with the chairman of an active agriculture cooperative supplying fruits and vegetables to the local market. This allowed us have the points of view of a producers cooperative with recent export activity. Also, three interviews with owner/managers of companies not producing at the moment, but planning to initiate investments in horticulture in 2009 were conducted. From all companies interviewed, four are active in the fruit and vegetable value chain, and five are active in the cut flower and ornamental plants value chain.

The information gathered from senior interviewees provided the benefit of hindsight back to the early 1990's to understand how companies managed the uncertainty caused by periods of conflict. Together with this information, company managers were also queried on the main elements of a larger horticultural sector vision and an action plan to attain it.

3. Comparative advantages of Burundi

From an agro-ecological point of view Burundi is unusually well suited for horticulture. A wide range of microclimates and abundant water are found from the shorelines of Lake Tanganyika up to the highlands of Gitega. From a logistics and supply chain point of view the small size of Burundi, in contrast to Tanzania and Kenya, offers a comparative advantage with easy local transport both in terms of time and cost. Burundi's network of paved roads is still in good condition and represents a significant asset that needs to be preserved. From a human capital stand point, Burundi fares well with respect to other countries in the region, since it has a base of agro-entrepreneurs who have withstood the worse years of the internal conflict and have kept their companies running—a substantial achievement in and of itself. Furthermore, some key elements of infrastructure that remain in place from earlier times are now available for use. These include existing cold chain infrastructure either for rent or in maintenance cost-sharing partnership with two companies (EDM and ATB). A large packing shed near the airport and ATB's 80 cubic meters of cold rooms also represent a major advantage in comparison to nearby Rwanda. From a grower base point of view, Burundians are hard working people that have farmed lowlands and highlands with a variety of crops. Such genuine passion for agriculture is an advantage in potency when implementing outgrower schemes for horticulture crops.

4. Market demand analysis

> *"This is the most dynamic market development era and we can't avoid the ever creeping production, harvest and supply chain costs. The road to increased market access is steep for countries with 30 years plus of high-tech horticulture and it is considerably steeper for Burundi's unknown and probably inexperienced horticulture exporters."*
>
> *Mohammed Abbas*
> *Del Monte Fresh*
> *Dubai, UAE.*

This quote from an interview with the manager of Del Monte Fresh in Dubai depicts the difficulty of the challenge facing Burundi in developing its horticultural exports. Realizing the nature of the obstacles to be surmounted is the first step in the necessary evolution of the sector.

The section below presents our analysis of the potential demand in the two horticultural sector value chains. The methodology used to develop the analysis is based on a

business-to-business analysis conducted with company managers that reflects concrete opportunities for growth facing each company. This analysis also reflects prior assessments of European and regional market potential conducted by the consultant and a short market visit of the Dubai terminal market.

4.1 Market demand analysis for fruits and vegetables value chain

Western Europe has been traditionally the major international destination for Burundian exports of fruits and vegetables over the past 10 years. As Burundian exporters still consider this market as a promising opportunity, the foremost demand parameters, trends and likely evolution in the Western European markets are outlined in this report for specific products that can be shipped by Burundian entrepreneurs in the short term. A similar description of the Middle Eastern market is also developed, particularly detailing the advantages of diversifying exports away from Western Europe.[3]

Exotic fruits and vegetables for the Western European market

The strong positions enjoyed by competing countries in East and North Africa for mainstream fruits and vegetables such as berries and Mediterranean specialties such as eggplants and artichokes leave little market windows available to smaller less experienced producers like Burundi. Kenya and countries in the Middle East such as Egypt, Jordan, and Israel have managed to build strong relationships and joint-ventures with UK importers as well as major wholesalers in France and the Netherlands for flown-in specialties such as green podded beans, passion fruit, colored peppers and other specialties. Small niches are left for some of these mainstream products, but opportunities are largely based on capitalizing in extremely short term market supply gaps of 2 to 3 weeks during which Burundi could make significant profits. However, it would be challenging for exporters lacking experience in production of these commodities to hit such small windows with the needed harvesting precision.

However, price window analysis of the UK and Rungis wholesale markets shows that the opportunities for Burundi rest primarily on the exotic fruit and vegetable category where competitors flying products from longer distances such as Colombia, Peru and Ecuador have higher transportation costs.[4] Despite Burundi's current high airfreight costs ranging from $2.90 to $2.15/kilo from Bujumbura to Amsterdam, it was determined that Burundi still holds and advantage over these countries which currently pay from $2.50 to 2.90/kg (see section 4.2 comparing Burundi's airfreight costs with selected countries).

[3] No specific market demand opportunities were identified for mainstream highland vegetables (lettuce, celery, etc.) as originally planned in the value chain identification exercise. However, it is expected that, as companies acquire more experience, opportunities with other products will be identified.
[4] Data collected from Fresh Produce Journal Wholesale Prices in the UK and the Service des Nouvelles des Marchés of the Rungis International Wholesale Market in France.

Presently, Burundi exports consistent weekly shipments of *lenga lenga*, okra, *intore*, baby eggplant, cooking bananas, apple bananas, passion fruit, Gitega-grown avocadoes and local hot pepper varieties (*pili pili*). Two Burundian companies interviewed, DME Exports and ETRO, S.A., remain in export business to Europe with DME sending weekly shipments of circa one metric ton of assorted fruits and vegetables with an average value of $7,000. Ms. Jiwan Naznin, manager and owner of DME, believes that despite the complexity of supplying the European market, her major limitation is the lack of organization, training and supervision of her supplier base of around 60 growers and 4 major product agents in charge of gathering, sorting and transporting the product to her packing plant located nearby the airport in Bujumbura.

Mr. Leonidas Nduwumwami, owner and manager of ETRO, explained the challenges of sourcing up to 10 different items among which are white eggplant, pili-pili, passion fruit, mangoes, avocadoes and other specialties through 3 major agents, but an undetermined number of growers that could range from 10 to 30 depending on the season. ETRO ships about half a ton every month to buyers in Belgium and circa US$ 11,000 a month to the Ugandan market (circa two tons of produce bi-weekly). Since the shipping schedule to regional and international markets do not follow a pattern (e.g., weekly or biweekly fixed volumes), the relationship with outgrowers has not grown stronger. Therefore, ETRO is opting for growing products in company-operated farms while expanding his client base in search for formal and scheduled supply programs.

DME and ETRO are willing to continue investing in the diversification of exotic produce for the Western European market. Their strength rests on a 12-year partnership with buyers in Belgium, mainly with the company Tropical Taste, Belgium, which serves different African ethnic groups and supermarkets in Belgium where Burundian exotic products are currently sold. Specific data was not provided by the buyer, and major commodity price report agencies in Europe do not handle exotics price due to their small volume in comparison to other specialty items.

Regional market demand for fruits and vegetables

Regional market opportunities for Burundi are most promising in Uganda, Kenya and Rwanda. These are countries changing rapidly as supermarkets and food service operators grow in conjunction with an affluence of tourists, as well as regional and international companies. For instance, in just the last five years, Kigali has been transformed from a quiet village to a dynamic tourist and business center. Already, the changing demographics of the returned Rwandan population has created new consumer demand and sparked changes in tastes which have lead to the creation of an important fresh produce market that local growers and exporters from the region will soon begin to target.

Even if the presence of small supermarkets and hotels in Rwanda feeds only two percent of the population, this is the population segment with greater purchasing power and a desire for western food lifestyles. Supermarkets planning expansion in East Africa are

realizing the need for more sophisticated, self-service formats that also provide entertainment and convenience products in association with shopping mall. Supermarket participation in African countries is today at a15% market penetration level (population weighted average) in Kenya and South Africa. Growth in this segment is likely to continue on a steady path for the next five to ten years as it emulates the evolution of developed country supermarket growth. In the meantime, consumers are expected to increase their demand for fresher, healthier and more diverse fruits and vegetables.

What can Burundi do to capitalize on the emergence of these new trends in regional markets? Although Burundian horticultural entrepreneurs only see the existing similarities between what they and Uganda, Kenya and Rwanda can produce—there are real opportunities for developing regional complementarities. Two major advantages favor the Burundi horticulture sector. First, Burundi has the capacity of producing fruits and vegetables with high intake of water such as watermelons, melons and tomatoes under better conditions provided by a broader range of altitudes than in the lowlands and highland areas surrounding major urban areas in Kigali, Kampala and Nairobi. The second advantage is the capacity to install procurement systems of a variety of products packaged together for supermarkets and food service companies. Sourcing several products from one single origin decreases transaction costs and increases reliability in the supply chain. Reliability of supply concerning quality, timing and costs is of top importance to supermarket and the organized foodservice sector.

Taking into consideration these two advantages that can provide a competitive edge to Burundian producers, two companies have demonstrated interest in participating in the production of a number of niche exotic fruit and vegetables.

FRUITO: This company has expressed willingness to initiate melon, watermelon and pineapple production for the fresh and processing market in their 12 ha plot located in the Cibitoke valley. Currently, 16 more ha are cultivated with papaya and mango, which are complemented by melons and pineapples into a full tropical fruit supply package. While there is no evidence that Burundians or Rwandans have a melon consumption culture, it is expected that the variety now grown will have a good reception in different markets across the region due to its sweetness, aroma and other attributes already known to most tourists and expatriates living in the region. Additionally, both watermelon and melon varieties have a short 90 to 100-day growing period under warm conditions and water availability. The short production cycle is an attractive crop characteristic for FRUITO's juice processing line year-round demand of fruit.

AVICOM: The availability of land between 1200 to 1600 masl on the road to Gitega and other surrounding areas of Bujumbura make it possible to establish a berry production farm for the regional and potentially the Dubai market. Discussions with Del Monte Fresh-Dubai in November of 2007 led to the identification of soft fruit as a group of fruits that enjoy wholesale prices above the $4.00/kg, are already part of the shopping list of local Dubai residents and travelers, and are also a mainstream item in the fresh-cut operations of Del Monte Fresh. Strawberries and other short cycle berries are delicate

items that are not always suitable for small-farmer agriculture due to the amount of food safety considerations along the value chain and the supply chain. However, a company like AVICOM with the investment and management capacity, experience in agriculture and an understanding of formal supply contracts with international companies will provides the highest probability of success for Del Monte.

Box 1. Conclusions of Demand Analysis for Fruits and Vegetables

- Opportunities in international markets are primarily in the "flown-in" exotic fruits and vegetables category where Burundi airfreight costs are lower than potential competitors.
- Opportunities in regional markets, particularly in Kigali and Uganda, are mainly on the low-valley products where Burundian companies (ETRO and FRUITO could be able to supply several products under the tropical fruit category.
- Immediate expansion of DME and ETRO's sales with current clients is not limited by market size but by the informality of its outgrowers. Targeting better production and gathering technology at the grower level can allow these companies to increase their market share regionally and internationally.

4.2 Market demand analysis for cut flowers and ornamental plants value chain

The Western European market has been an important arena for world-wide producers of cut flowers and ornamental plants. With the largest cut flower and ornamentals wholesale terminal in the world located in Amsterdam, Holland, quality specifications, prices and trends are set here for this vast multi-billion dollar industry. In the last few years, the cut flower and ornamental plant industry leaders have been Western European countries accounting for over 3 billion euros. Colombia—the Latin American rose and tropical flower powerhouse—is second with 800 million euros; Ecuador follows with 500 million euros, while Kenya and Israel have strong floriculture sub sectors of 300 and 150 million euros respectively.

A number of smaller players follow, mainly located in Asia, Central and South America and a micro-level tropical flower industry in the Caribbean. Among all categories of horticulture products, cut flowers and ornamental plants are arguable the most "globalized" since it is typical to find production, distribution and wholesale operations coordinated and globally integrated among Dutch, Colombian, Australian, Ecuadorian and other Asian and Latin American countries.

The cut flower and ornamental plant industry leads the charts of innovation around the world from breeding techniques of new varieties to supply chain improvements. The challenge of transporting live plants or providing the longest shelf-life to flowers and foliage through improvements in maritime transit has resulted in several inventions used

today in other horticulture products. What this means to Burundi is an opportunity to gain knowledge that can be also applied to other perishable product categories.

As in the case of food items, the cut flower and ornamental plant industry is subject to strict phytosanitary regulations that vary depending on the species and the country of destination. Besides, the disease-free related standards, consumers also exercise pressure on the industry to be "greener" and "fair" to millions of workers in developing countries such as Kenya, Indonesia and Colombia. These trends are no longer seen in the European market alone, as recently published data provides evidence that the "fair trade" movement in flowers is growing in the US as well.

Cut flowers and ornamental plants are an important target category of horticultural producers because, unlike food items such as fruits and vegetables, most cut flowers and ornamentals are of short production cycle, are less perishable (with the exception of some varieties of roses), require fewer sanitary and phytosanitary controls, and generate an average of 35 direct employments per hectare per year, women being at least 80% or the required workforce.

Burundian roses

While Burundi has the climatic conditions and abundant water resources to produce top quality roses, comparable to Kenya, the cut flower industry has not taken off. With 4.7 hectares of land, the company Agro-Trading Business (ATB), owned and operated by Mr. Thierry Nzohabonayo, started production in the year 2000. Mr. Nzohabonayo explained how his investment was planned in a relative period of peace in Burundi, but that the conflict exploded again and spread to the area selected for production of long-stem roses. Since this unfortunate event coincided with the authorization of a $500,000 loan by the Regional Bank of Kenya, his planting location had to be moved within the Bujumbura city area at around 400 meters below the original location. This reduction in altitude affected the quality of the rose in terms of smaller heads and shorter stems two of the major quality factors in the Holland international flower auction. Nonetheless, the product attained tradable quality with independent, non-auction, direct buyers in Holland, although at prices under the auction prices.

ATB has consolidated its marketing channel and a long term business relationship with his buyer. As a price taker in a multi-billion dollar business, his emphasis is on reducing costs through higher productivity per square meter. This involves proper maintenance of green houses as the most effective pest control tool, periodic renewal of root stock and a recommended feeding schedule designed to obtain higher production per area.

As a relatively small player, even with significant growth, demand is not an important limiting factor for Burundi in the cut flower and ornamental value chain. Realizing growth potential will demand more on ATB's capacity to reduce its costs—which is mainly a question of airfreight. For instance, Colombia pays $2.80 per kilogram, Ecuador and Costa Rica $2.60 kg while Singapore and Malaysia's airfreight is between $2.60 and

$2.80/kg. Neighboring Kenya's thriving floriculture industry is currently the only significant competitor with airfreight cots that are below Burundi's. Currently whereas Kenya exporters pay $1.70/kg, ATB's rates fall between $1.90/kg to $2.15/kg depending on volume. In contrast to its higher airfreight costs, two other major costs can constitute advantages for Burundian ornamental exporters. The first of these is the cost of wooden green houses, which are approximately $1.00/square meter in Burundi using the widely accessible eucalyptus lumber, while Latin American's wooden greenhouses generally run for $3.50 to $5.00/square meter. Second, the cost of qualified labor in Burundi (at least as paid by ATB) runs at approximately $0.75/day slightly under Uganda and Kenya's rates, while Colombia's agriculture labor ranges from $3 to $5/day.

Despite this lower cost structure than the majority of the competitors, 65% of the total revenue of ATB goes directly to transportation costs. An interesting discussion point is the true impact of transportation costs in Burundi on the final cost structure of roses by comparison with other major competitors. If transportation cost runs 35% lower than in Colombia or Ecuador, why does transportation cost represent such high percentage of the overall cost structure in Burundi? The answer is partially found in the low levels of productivity and quality currently produced by ATB. This situation is recognized by ATB's owner, who agrees that low productivity is a function of old root stock, poorly maintained greenhouses with higher disease damage rates, and poor feeding programs. As shown in Figure 2, under the current productivity levels, Burundi cannot take advantage of the relatively lower cost of transportation par rapport to South American countries, and is in clear disadvantage when compared to Kenya and Uganda. Under this situation, and after searching for more affordable operational and expansion capital, ATB is poised to become more productive in order to spread its current high transportation costs over more heads of flowers per hectare.

Fig. 2 Rose Production and Shipping Cost Structure Comparison

General Cost Structure Analysis of Roses (CIF Amsterdam)

Country	Production	Harvest/ Post Harvest	Transportation
Colombia	45%	22%	33%
Ecuador	51%	14%	35%
Kenya*	39%	18%	43%
Burundi	23%	12%	65%

0% → 100%

*Kampala-based companies using similar technology show similar cost structure to Kenya's rose production according to a 2007 Flower Export Earnings Report.

ATB plans to expand the current 8 wooden green houses covering 4.7 Ha to 3 more hectares in the next two years. At current root stock prices of Euro 1.3 per plant, greenhouse, irrigation and spraying equipment costs this will total an investment value of $284,000/Ha or close to $850,000 in investment for Burundi. Mr. Nzohabonayo's purchasing partner in the Netherlands has committed to back this investment with continued purchases since 2005,

but the lack of affordable credit, currently at a rate of 18% to 23% in Burundi, has led ATB to delay inception of the expansion. ATB now plans to expand at a rate of 2 wooden houses per year (around 1.1 ha) beginning in 2009.

Tropical cut flowers (heliconias and birds of paradise)

Another burgeoning product in the cut flower international industry is tropical cut flowers—mainly heliconias and birds of paradise. With Colombia and Costa Rica being the major heliconia producers for the European market, and the Phillipines and Thailand making headway in the heliconia trade, it is noteworthy that production and transportation costs also favor Burundi for both categories. Heliconias are long-stemmed flowers with some 200 varieties of different colors and shapes. The major consuming country in Europe is Germany, although the flower is growing popular at a greater rate in France and the UK. Exporting countries around the world emphasize the production of thinner stem, and vertical flowers as they are lighter per flower unit, and are less likely to be damaged in transit than other heliconia varieties with downward inflorescence.

The bird-of-paradise, from the *Strelitziacea* family, has also enjoyed some popularity for its attractive wing-like petals and their longer shelf life than regular mainstream flowers. Wholesale prices ranging from $1.50 to $3 per flower throughout the year as confirmed at the Rungis Wholesale market in France with two distributors in Amsterdam during the February 2008 Fruit Logistica trade show in Berlin, Germany. This price range represents a promising opportunity for Burundi's horticulture.

Although Burundi has not shipped heliconias or birds-of-paradise to the Western European market other than the local market, two companies already produce three of the most popular and hardy varieties. These companies are CHRISTA FLORE and Heidmann Ornamentals. Both companies were interviewed and expressed interest in co-investing to increasing their plantations if the potential export business are identified.

A major supplier of social event flower arrangements, CHRISTA FLORE worked in the informal economy since the mid 1990's, but became a formally established company in 2003. With a loan of $50,000 from IBB that same year, CHRISTA FLORA established a retail shop, agriculture equipment, and provided financing to five small farmers under an outgrower scheme. A loan of $12,000 in 2007 allowed the company to purchase a 3-hectare farm where they grow the most popular varieties in Bujumbura. In 2007, CHRISTA FLORE planted 1.5 ha of heliconias and 1.5 Ha of other flowers for the increasingly growing local market becoming her own supplier of flowers. Presently its owner has no outgrowers since outsourcing from small growers became difficult regarding quality control, timely delivery and shelf-life time assurance to her clients.

Heidmann Ornamentals is owned and operated by a French-born computer specialists devoted who operates a two-hectare ornamental plant farm on a part time basis. This farm includes several ornamental plant species for the local market, and a small heliconia production that can be scaled up rapidly since heliconia grows well in open fields. Mr.

Heidmann supplies CHRISTA FLORE with flowers and ornamentals, but would like to invest in heliconia production once buyers are identified.

Ornamental plants

While the ornamental and foliage plant business represents only a fifth of the value of cut flowers globally, it is a profitable and growing sub sector. Companies that have supplied the Holland auction wholesale market for years have grown with the cut flower industry providing bouquet-ready assortments of heliconia leaves and potted ornamental plants such as peperommia, croton petra, shade and direct sun palm trees, philodendron, golden pothos and more. Indigenous species found in Burundi are also popular. For instance tropical plants and foliage having a wide assortment of red, green and bi-colored Dracaena, some Aglaonema species and other species of the genus Dieffenbachia characterized by their patterned leaves are widely available.

While Burundi has the climatic conditions to produce ornamental and foliage varieties and has an on going Dracaena export industry to Holland, most foliage exports, rooted and potted in approved media or as unrootted cuttings, are shipped by sea. Although this may pose a challenge for Burundian ornamental producers, there are varieties such as sanseiveria that can stand up to 40 days in transit. This means that under controlled atmosphere, 40-foot containers, the product can travel to the ports of Mombassa in Kenya via Rwanda, or Dar es Salaam in Tanzania, and be shipped by sea to Europe or Dubai within 16 to 20 days allowing several weeks for distributors to sell.

Dubai, in particular, is a market with a growing unsatisfied demand for ornamental plants, which is also true for other Middle Eastern cities. Indoor/outdoor landscaping in the business complexes of Dubai and Abu Dhabi are a target market in mind. A recent visit to Dubai led to two ornamental plant distributors with interest in procuring sanseiveria potted plants for this market on a year-round basis. The provision of know-how and potential co-investment opportunities have been discussed as long as the minimum plantation area can be no less than 5 ha.

The company, Oro Farms, which operates plantations in the US and Latin America expressed its willingness to explore such co-investment opportunities in Burundi for the production of three ornamental plant species that can withstand transit by land and sea for the Dubai market. These species are Yucca elephantypes, areca and sanseiveria. In the case of sanseiveria, other advantages are the short 5 week production cycle from unrooted cutting stage to pre-finishing stage and three more weeks from pre-finish to finishing. The production cycle from unrooted cutting to shipping at a mean temperatures of 27 degrees Celsius and altitudes from 700 to 900 meters is comprised within a maximum of 2 to 2.5 months. Sanseiveria production costs range from $55 to $60 thousand/ha using wooden structures and 60% shadecloth. Profitability figures shared by Oro Farms range from 15 to 20% over investment in 5 to 7 weeks.

Because of the minimum area needed to begin production of these ornamental plants, the Ruzizi Group seems to be the best fit for participation in this co-investment opportunity with Oro Farms. Ruzizi Group is a land holding of over 700 ha located at 15 minutes from the Bujumbura airport on the road to Bubanza. A former Robusta coffee farm, Ruzizi is located in the boundary between Bujumbura and the city outskirts where most of the rebel attacks took place in the late 1990s and early 2000s. Ruzizi's flat, arable land is 70% idle, around 10% is given to nearby villagers to grow their food, while some 20% is used for rice production. Abundant water is available across the farm through a series of small canals that transport the water from two small creeks flowing all year round.

Ruzizi does not produce any horticulture crop at the moment and does not have any recent experience in horticulture. However, it is in the phase of evaluating several investment projects including palm oil production. Other favorable factors are the availability of land for future expansion and the existence of the old coffee mill in the center of the farm that could be adapted as a sorting/packing shed and cold room.

Box 2. Conclusions of Demand Analysis for Cut Flowers and Ornamentals

- Market demand is not a limiting factor for Burundi's potential expansion of rose production. Low productivity, on the other hand, is the major deterrent for Burundi to compete better in this industry. By comparison, Burundi has the potential to produce and export roses at similar cost structures as Kenya and Uganda.
- Tropical flower demand, particularly for heliconia and birds of paradise, is a niche market opportunity for Burundi in Europe and the Middle East. At the current transportation cost levels, Burundi should be able to compete well against South-American and Asian current and potential suppliers.
- Production of several ornamental plants and foliage present an opportunity for Burundi. The immediate opportunity identified is the in and outdoor landscape market in Dubai and other cities in the Middle East and the Arabian Gulf. The extended in-transit shelf life (up to 40 days) of ornamentals and foliage can allow for land and sea transportation from Burundi to these markets and Europe, which is an advantage considered by at least one potential co-investor, Oro Farms.

5. Fruit and vegetable value-chain analysis

It is noteworthy to reiterate that formal operations in the fruit and vegetable value chain are of extremely small scale with only four active companies (Fruito, ETRO, COMABU and DME). Each of these companies was asked to identify the major constraints hindering its development at different levels of the value chain. The information from these interviews is synthesized below.

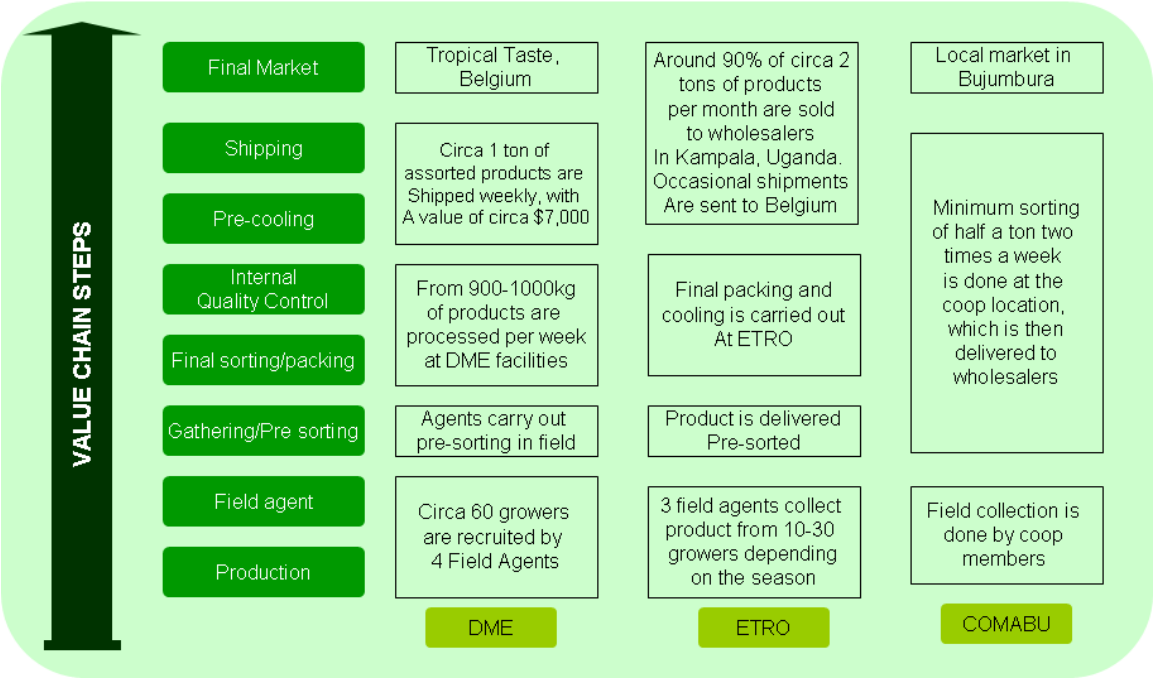
Table 1. Major Constraints in the fruit and vegetable value chain

Value Chain Activity		Major Constraints
Pre-Production	Credit/Working Capital	Credit in Burundi is too expensive, between 16 and 18% APR with good collateral, and up to 23% with poor collateral and credentials.
	Seed procurement	There is a shortage of varieties and seed quality is unreliable. Entrepreneurs are ill-informed on agronomic details.
	Procurement of chemical inputs	Commercial shops in Burundi carry a limited number of products, and do not provide credit
	Water quality analysis	Overseas buyers want water quality analysis, but it is uncertain whether the analyses available in Burundi are up to international standards
Production	Cash flow credit	While most product providers only work on a cash basis, it is difficult for fruit and vegetable companies to find credit to increasing purchases. Farmers under informal outgrowing schemes have no access to improved genetic materials, and may face resistance to try different seeds than what is available in their communities.
	Technical assistance for production, plant nutrition and pest control	Local knowledge for pest control is based on experience. Most of the plant material used is old and resistant to pests and diseases, but plant performance is low producing fruits small in size as well as other quality problems. As a result over 50% of the production does not quality for export.
	Water quality control	The service exists in Burundi but it is not enforced in food handling facilities.
Harvest	Procurement of labor	Labor is available, but uneducated and untrained. Middle management workers stay, but there is high rotation of the low level laborers at the packing plants.
	Cold-chain equipment	Procured from Holland
Post Harvest	Technical assistance	Cold chain equipment is maintained by a local company called Frigo Bruno.
	Post harvest equipment	Boxes have to be imported from Kenya.
Marketing	Market intelligence	Entrepreneurs do not attended tradeshows. Until February, only two companies (FRUITO and ETRO) had attended an international tradeshow (Fruit Logistica-Berlin, Germany).
Costumer Service	Communication with buyers	Internet/fax, email. The email service is reliable, and language barriers have been surmounted over

Value Chain Activity		Major Constraints
		time.
	Getting paid	Not difficult with current clients
	Improving relationship with client	Regular visits annually or biannually are paid by most companies to either regional or international buyers.

As can be observed in the summary table above, most of the value chain functions are internalized by the companies themselves with the minimum business services provided by other Burundian firms. Since there are only few companies, the lack of business offering services may be due to the low demand, forcing the existing fruit and vegetable companies to outsource their products and services from outside.

Fig. 3 Fruit and Vegetables Value Chain (fresh products)

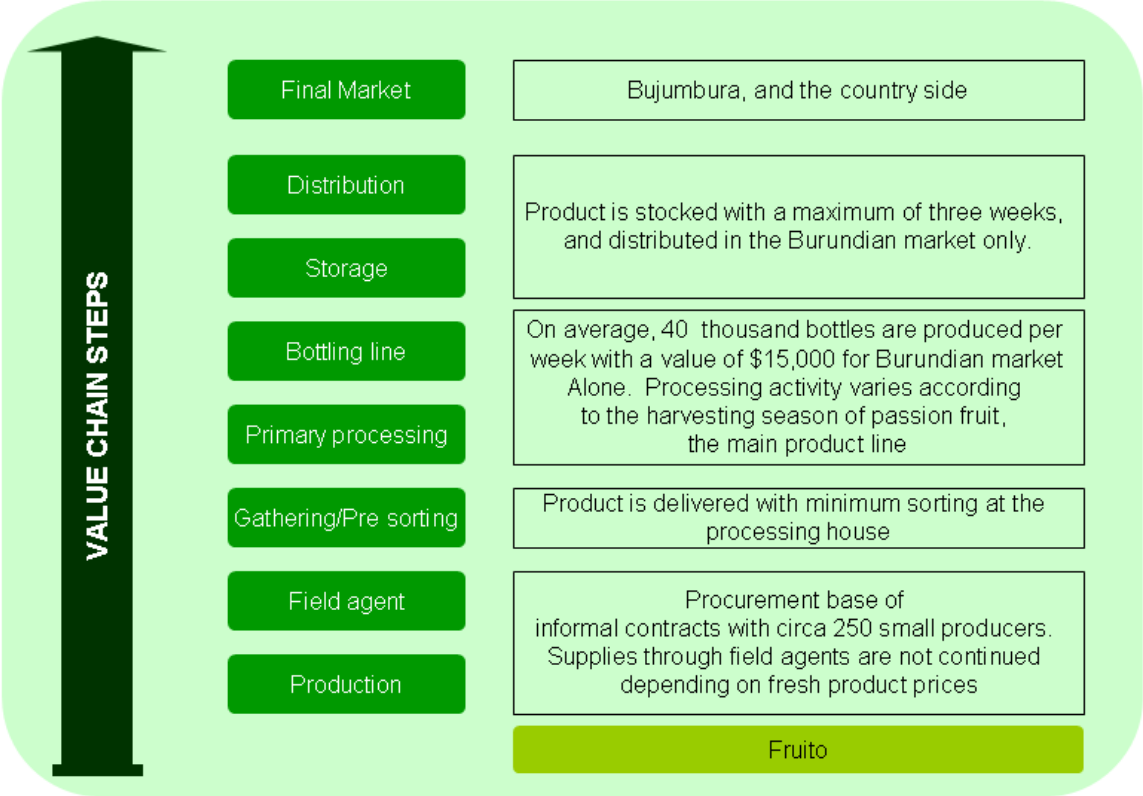


Given the smaller grower base, market channels are not well defined, volumes are low and intermittent, average price information is unreliable and there is absence of defined collection points (e.g., central gathering centers). For most active companies, this results in a value chain with only two major stops where value can be added: the first gathering point, where product is pre sorted by quality, levels of ripening and size. Second, the selling company which does further sorting, packing and shipping. In Figure 3, the DME, ETRO, COMABU value chain links and structure are portrayed, providing as much information as available concerning volumes and value of exports. Figure 4 is also added representing the Fruito value chain as a special case for the local market where fruit is transformed into fruit juices. Approximate numbers concerning farmers involved and

volumes produced and distributed have been partially shared by Mr. Joseph Kigoma, owner, and general manager of this company.

Since these are small companies with few actors involved, their integration and coordination levels are very straightforward. In this case, the four active companies have outgrower schemes. However, no formal implicit or explicit contracts exist to structure these agreements. The relation is informal, on an "as needed" basis with around 40% of the supply coming on a spot market basis. Under no formal contracts, farmers participating in the chain use price as the main determinant of market channel choice between supplying informal wholesalers and supplying the companies under study. The level of land and capital assets of the grower base of DME, ETRO and the cooperative COMABU was not determined, but company owners revealed during interviews that most of the suppliers are subsistence farmers.

Fig. 4 Fruit and Vegetables Value Chain (processed products)



Another aspect outlined during the interviews is that neither farmers nor companies recall receiving training from any agency regarding crop production planning, pest and disease control, pesticide management, seedling production, plant nutrition, composting, harvest and post harvest technology, food safety, perishable products management, or any other aspects concerning marketing of their agricultural products.

Fruito, a juice processing company, works mainly with intermediaries that gather the passion fruit and pineapple for his processing lines. Currently, Fruito's processing facilities do not work at full capacity due to the shortage of raw material during some weeks of the year. Although Fruito has attempted to establish a higher degree of coordination with growers by providing seedlings and training as incentives to avoid gaps in supply, the relationship with suppliers is still informal.

Box 3. Conclusions of the Fruit and Vegetables Value Chain Analysis

In general, there are few links along the value chain where added value is created. All companies operate at very low levels of output, constrained by a complex array of challenges along the primary and secondary activities in the value chain. What this means in terms of the major hindrances to growth for a value chain as small as this can be better represented on a company by company basis, and is summarized as follows:

- DME: Lack of capacity to engage more farmers is mainly due to the levels of assistance needed to bring small producers together under organized procurement programs. Under the current lack of affordable inputs and technical assistance, DME does not believe it has the financial and technical capacity to disseminate inputs, train more farmers and ensure the production meets the quality criteria required by its clients. DME sees the risk of higher transaction costs, while there may not be an efficient mechanism to ensure the output produced are delivered to DME's field agents.
- ETRO: The company faces similar challenges as DME, with two major added difficulties. First, access to affordable financial support has been difficult. Second, current clients are still too informal to risk producing at a faster rate than small increments highly affected by seasonal variations.
- COMABU: The relationship between the cooperative management and the supplier base is highly informal. There are no services offered to growers other than gathering and selling. As a result, growers have not been trained on any aspect of production or post-harvest for the past seven years and neither have the members of the cooperative management team. Promoting growth of their business depends highly on the local market, which is categorized by a low purchasing power, and a weak culture of fruit and vegetable consumption. Their expansion to regional markets has been attempted, but capital constraints to acquire transportation, cold rooms and over all working capital to pay members on a cash basis have reduced market expansion efforts to fruitless ideas so far.
- Fruito: This company has the capacity to process three times more the current level of throughput. However, it is highly constrained by the lack of steady supplies of row material. To gradually eliminate this constrain, significant investments in the production and distribution of over 10,000 passion fruit plants have been made by Fruito since 2006. However, Fruito is not capable of tracking how much of those plants given away to growers have been properly maintained and if the company will be able to catch a significant proportion of the fruit produced as a result of this effort. A more aggressive outgrower recruitment campaign with field agronomists and company-hired procurement agents would mean a higher level of investment Fruito has not considered. On the other hand, Fruito hopes that fresh production initiatives of passion fruit will

5. Cut flower and ornamental plants value-chain analysis

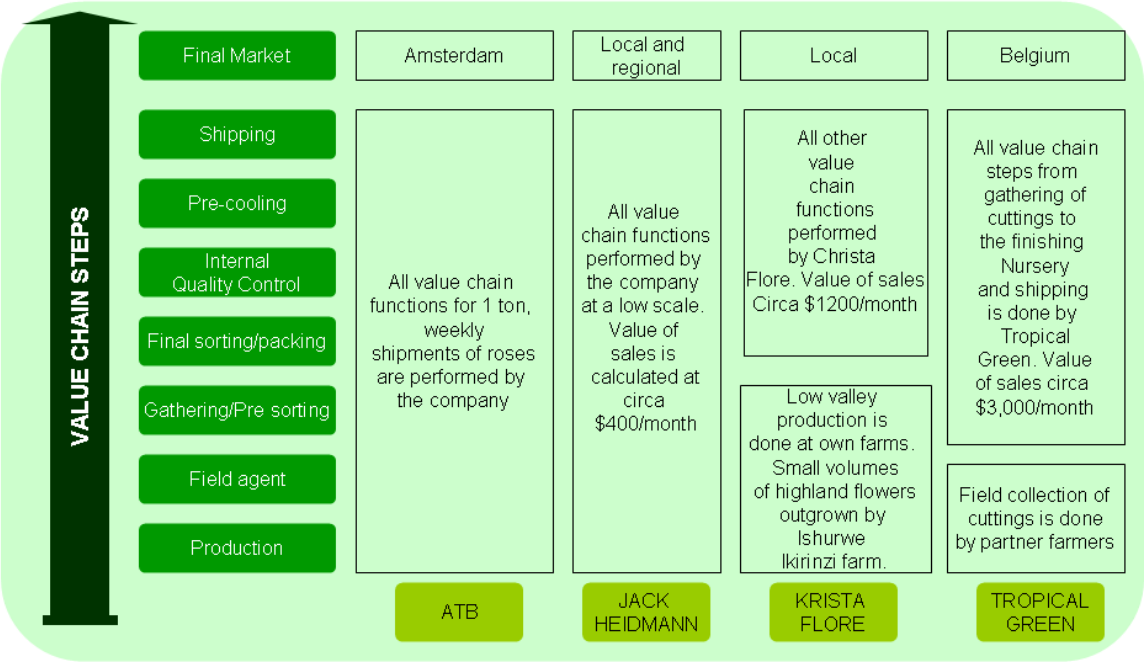
This value chain has five active companies. One salient point is that this is the most integrated value chain of the two under study. This is in part due to the type of investments necessary for large scale production, and the participation of most of the active companies both at the local and regional market level. Major constraints reported by each of the active companies are listed below in Table 2.

Table 2: Cut flower and ornamental value chain constraints

Value Chain Activities		ACTIVE COMPANIES			
		ATB	**TROPICAL GREEN**	**CRISTA FLORA and ISHURWE IKIRINZI**	**JACK HEIDMANN**
Pre-Production	Credit & working capital	Credit in Burundi is expensive at around 20%, in Kenya it is at 16%		Credit in Burundi is difficult to obtain, and expensive from 20-23%	
	Seed procurement	International laws affect the sourcing of root stock, which has to be purchased with an authorized distributor to make sure royalty laws and regulations are abided.	Local varieties of dracaena need to be reproduced at a faster rate since the availability of stem stock is becoming scarce.	Certified sources of tropical plant seeds are not available locally. Seed from West Africa or Latin America is expensive. Importing lili root stock from Holland was expensive in small quantities. This expense was nearly 80% of the farm establishment expenses	No knowledge about where to get palm seeds for the Dubai Market
	Procurement of chemical inputs	The chemicals need to be imported from Kenya, plus the freight cost, becoming expensive	No significant use of chemicals at the current production level	Burundi carries a limited number of products, but the vendors do not provide advise on how to use them	
	Spraying equipment and other equipment	Non existing in Burundi, which has to be imported from Holland, Israel or Kenya in the best case scenario.			
	Other equipment	The absence of a professional greenhouse builder is a major challenge for the flower industry. Carpenters in ATB have learned the			

Value Chain Activities		ACTIVE COMPANIES			
		ATB	**TROPICAL GREEN**	**CRISTA FLORA and ISHURWE IKIRINZI**	**JACK HEIDMANN**
		hard way and still have much to learn			
Production	Cash flow credit	Credit to pay labor needs to be more available since the credit period with buyers can be extended beyond one month		This is a constant struggle, and a major limitation when thinking of exporting on a credit basis	
	Pest control and plant nutrition	The expertise has to be flown in from Kenya		Current technicians do not have a network outside Burundi to ask what they do not know	
	Cold-chain equipment	With short distance it is not a problem, but if production expands beyond Bujumbura, there will be need for refrigerated trucks.			
Post Harvest	Technical assistance	Expensive, comes from Israel.			
	Post harvest equipment	Boxes have to be imported from Kenya and collection baskets as well.			

Fig. 5 Cut Flowers and Ornamental Plants Value Chain



While ATB is a fully integrated company under one owner. As such, the company performs all value chain activities from planting to shipping and sales. So far, no association with other producers has been possible.

Christa Flore, as described in previous sections, has been in the local flower business for nearly a decade. With its production base located at the altitude of Lake Tanganyika, her sales supply of highland flowers such as lilies relies on the grower Ishurwe Ikirinzi. The latter is owned and managed by Therese Harahagazwe, a business woman from Bujumbura. Ishurwe Ikirinzi started as a hobby for Mrs. Harahagazwe in her inheritance in the Muramvya region. Today, her lily production expands out to 2 hectares of flowers. The farm is currently running some research projects on highland vegetables. Her sales are still significantly under her expense levels, but the company hopes to increase volume as her team of 12 women laborers gains more experience.

Box 4. Conclusions of the Cut Flower and Ornamental Plants Value Chain Analysis
Similar to the challenges that constraint growth in the fruit and vegetable value chain as explained in tables 1 and 2 and Box 3, the cut flower and ornamental value chain has yet other constraints. These are related to the level of technology needed to succeed in the production of highly commoditized items such as roses and other cut flowers. A company-based analysis below indicated the hindrances to growth in this value chain:

- ATB: The major hindrance to growth is to renew his current production facilities from replacing the root stock to better maintenance of green houses. ATB's plans to double his production in a shorter timeframe are limited by access to capital. However, the company is convinced that at current productivity levels, it will be difficult to compete.
- Jack Heidmann: This company has operated as a side job for the owner. Jumping to a more entrepreneurial level of production and management will be principally constrained by access to capital.
- Krista Flore: This company has concentrated on supplying the local market. After moving from an outgrower scheme to a more vertically integrated value chain, its capacity to grow locally is highly constrained by market size. Growth into other markets is highly constrained by lack of information on genetic material and growing systems. The only outgrower at the present time is the company Ishurwe Ikirinzi. Krista Flore has provided the available knowledge on production technology of highland flowers, but a major challenge remains pest and disease controls.
- Tropical Green: After years of facing major hindrances to growth, the company has arrived to a valley in their growth behavior where the level of production and exports has remained at a constant one metric ton per week. Nonetheless, a hindrance that threatens even this low level of exports and future growth is the scarcity of dracaena root stock, which is collected in the highlands of Burundi. Another major hindrance to become a larger player in the dracaena market is transportation costs, but after repeated analysis looking for alternatives, it is concluded that this challenge may not be easily solved in the short term.

6. Analysis of major constraints in the horticulture sub sector

Given the similarities in the challenges faced by the two value chains, this section analyzes the major constraints to both value chains, who together basically form the entire modern horticultural sector of Burundi. Since the low level of production and overall value chain activity is a common denominator among the two chains, there has not been a considerable incentive to invest in experienced technical and management training for better higher scale production and exports. Even access to regional markets, has remained insignificantly small. Therefore, although it is difficult to establish causality, it can be said that the size of the companies is correlated to the size of the markets. This is also reflected in the amounts of credit accessed by the participating companies.

A common opinion across the companies interviewed was the difficulty to access affordable credit. Sources quote the interest rate at 16 to 18% on the lower end, but bank policies can raise the interest up to 23% depending on the risk rating that the bank assigns to the borrower. Companies with enough assets to offer as collateral may access credit from Kenyan financial institutions where the credit market is more developed with agribusiness projects and rates that are more competitive. Despite this limitation, about 6 out of 8 companies interviewed have accessed credits ranging from $50,000 to $5,000 in the last five years from Inter-Bank Burundi (IBB), with only company going back for a recurring credit. Considering that most of the participating companies are able to increase their market share with current clients, this leads to consider access to credit as the most important constraint to immediate growth in the sector.

Correlative to the scale of production and lack of affordable credit is also the limited access to technology in terms of inputs. Most of the companies interviewed argued that seeds, agrochemicals and specialized equipment have to be imported from Kenya, or places as far as Israel and Europe. While the prices in these countries are the same for all producers, Burundi has to add the cost of shipping and in some items, the import duties which makes them less competitive. It is important to consider, however, that relative to what is normal in the horticultural sectors of Kenya and Uganda, most agrochemical concerns in those countries would consider the Burundi market to be very small indeed. Limited access to inputs results in low technological production levels with conventional farm implements. Therefore, it is considered that lack of access to better technology-agriculture production inputs is the second most important constraint to growth.

Along the lack of inputs, companies and key informants interviewed have outlined the lack of qualified technical assistance in each of the primary activities of the value chains, but most importantly concerning agronomic knowledge. Technicians imported from outside come at a high cost that only ATB has been able to afford for the production of roses. Providing technical assistance to growers with imported technicians becomes even more expensive if companies such as ETRO or DME target geographically dispersed producing households, which on average may have less than one hectare of land. Under commercial levels of production, Burundi has to address the lack of domestic, qualified technical assistants in order to face the challenges of intensive agriculture at productivity levels that can allow its companies to compete internationally. Because of the cost of bringing experts from outside and the limited availability of experts in horticulture for export, this is considered the third most important constraint to the sector's growth.

Burundi is a country with a tradition of coffee and tea production in the hands of thousands of growers. As such, small farmer organizations in these two value chains have years of experience and each household has grown participated in them for generations. The same does not apply to horticulture, where nearly 300 varieties of fruits, vegetables, flowers and ornamental plants are commercially known and none of them are consumed or exported in large quantities by Burundi. As a result, the numbers of households that are dedicated to one, two or more horticultural products are largely dispersed, grow small

quantities as a secondary or tertiary crop, access seeds from different genetic pools, produce different quantities during different years, and overall do not identify themselves as strong growers of a fruit or vegetable. As a result, the majority of farmers are not organized around horticultural crops. This explains in part the degree of informality between buyers and suppliers. For Burundi to make headway in horticulture, the fostering of farmer organizations is necessary. Such organization has been witnessed in other parts of the world, where horticulture growers are represented, channeling better the group needs and becoming more attractive to private and public sector initiatives. Promoting better farmer organizations starting from the most prominent production zones will be key to the strengthening of the horticulture production base of Burundi. Under the current degree of atomization of the horticulture sub sector and its lack of organization, this is considered the fourth most important limitation to growth.

Another level of organization currently missing in Burundi is at the private sector level. While some limitations to growth are hard to eliminate, such as the cost of airfreight, other limitations can be addressed with the representation of an organized private sector. One example is the purchase of inputs such as agrochemicals and packaging materials. Also, an organized private sector is a better interface for exporters to negotiate or guide the use of public and international development support funding. It is important to justify the existence of functioning of an organized private sector in horticulture in the same way private and public entities have considered coffee and tea in the long agricultural tradition of Burundi. Because of the benefits accrued to organized horticulture private sectors around the world, and the potential benefits for Burundi, the lack of such organization is considered the fifth most important limitation for the growth of the horticulture sub sector.

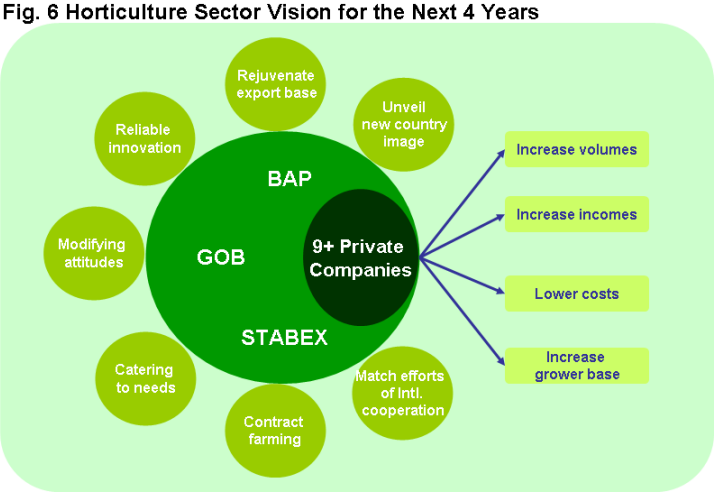
Other challenges exist, but the platform to surmount them will depend highly on the success in eliminating the above constraints.

Box 5. Major constraints to growth in the horticulture sub sector

1) Difficult access to affordable credit locally
2) Limited access to agricultural production inputs utilized under better technological production systems
3) Lack of local expertise on primary activities of the value chains
4) Lack of farmer organization as a supply force
5) Missing private sector organization

7. Opportunities and vision for the horticulture sub sector

Fig. 6 Horticulture Sector Vision for the Next 4 Years



Discussions with industry representatives provided a number of insights on what the future should hold for the development of the Burundi horticulture sector. The comments gathered and discussions held with the sub sector lead us to the following 7-element strategy as shown in Fig 6. The specific results expected from each element of the vision are offered in a table at the end of every element description.

7.1 Improving Burundi's image with the horticultural industry

The private sector fears that the memories of the internal conflict are still fresh in the minds of national and international investors, visitors and potential buyers and consumers abroad. For potential international buyers, Burundi is at best an unknown country. Even worse, when these potential business partners or tourists do read something about Burundi, it is highly likely that they read only bad news. Typing Burundi in Google or any other search engine in the internet will take a person to the first link "Tensions in Burundi" (www.crisisgroup.org). The next nine links describe Burundi's history and recent bleak past with at least two travel advise/warning notifications.

A fresh look of Burundi as a post-conflict country working diligently to rebuild and develop the country is necessary to foster business relationships and to launch the country as a source of horticulture products, particularly in the case of food items. Rwanda has done this and their image is gaining momentum. The motion to do this in an organized manner with the support of the GoB will need to be discussed in collaboration with the international community.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
A web site detailing a package of incentives to invest in Burundi	Website done				Web site operational
Number of tradeshows attended with Burundian products and investment incentive packages	Two per year	Two per year	Two per year	Two per year	At least 8 tradeshows are attended

7.2 Rejuvenating the production and export base

Ten years ago, the market differentiating mechanisms such as ethical trade, organics and food miles were discussed mainly in academic circles. Today, suppliers to global markets are thinking about organic production alternatives for their customers and try to keep up with the pace of increasing regulations and standards. In the mean time, Burundi's horticulture still struggles with small export volumes with little value added, limited credit even for the most elemental agricultural cultural practices such as irrigation and has lagged behind in the application of more efficient and productive technological packages from field to packing houses.

The need to rejuvenate the production and export base still standing is critical to take advantage of a limited number of opportunities brought to Burundi by the assistance of donor countries. This rejuvenation will involve shortening the technological gap between Burundian companies and those in Kenya, Jordan, Iran or South Africa. It will also involve taking farm managers out to witness the management of farms in respected competitor countries such as rose farms in Colombia, Ornamental plants in Costa Rica, and horticulture producers in Kenya. And it will finally involve injecting the necessary capital investments to diminish the impact of the top five constraints to growth identified above. The rejuvenation of the Burundian horticulture production and exporting base needs well thought out investments that are plan of a longer term growth strategy beyond the term of the current donor programs and the government officials in power.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
Each of the 8 existing companies increases investments in infrastructure and production systems	At least 50% of total company net worth is increased as direct investment by banks or donor programs	At least 100% of total company net worth on year one is increased as direct investment by banks or donor programs	At least 100% of total company net worth on year one is increased as direct investment by banks or donor programs	At least 50% of total company net worth on year one is increased as direct investment by anks or donor programs	The net worth of each existing company is tripled by the end of Year 4.

7.3 Investing on reliable innovation

Burundi can choose to start the learning curve where other competitors started 10 or 20 years ago, or can strive to begin a head-on competition with the help of join-ventures. Most companies agree that the latter is a better option. Burundi has the water, climate and hopefully now the political stability to be an attractive location for investors wishing to

get an edge on airfreight costs for flowers or other food commodities. The innovation these potential joint-ventures will bring to Burundi can be deemed reliable because those companies would have already proven it for years.

Companies such as Ruzizi Group, AVICOM and ATB are not small entrepreneurs by any developing country standard. They are serious companies willing to invest on ventures with the highest probabilities of success and with an aim to join global supply chains. These companies are managed by US and Europe-educated entrepreneurs are between 30 and 45 years of age and look towards a time horizon of 20, 30 and more years. They have chosen to stay in Burundi with the hope that the business environment will improve and Burundi's comparative advantages can be finally be put to use.

Working by the hand of a company such as Oro Farms or Del Monte may bring many challenges, but does not scare these companies away. They believe that once success stories are available domestically, other groups with equal or more investing power in Burundi will generate more opportunities to adopt innovative ways of doing business that are reliable and sustainable.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
At least four multinational companies join-venture with local companies	At least one company	At least one company	At least one company	At least one company	4 companies at the end of the fourth year

7.4 Modifying industry attitudes

At the urban level, years of informal, non-technical employment, neglected education systems, poor alimentation and health care have affected the productivity of men and women alike. In the opinion of several companies interviewed, the morale of many entrepreneurs and workers alike is only compatible to the low labor wages paid in this country.

A culture of payment for productivity is something considered by most interviewees as an effective way to modify attitudes toward work. While low labor cost is sometimes erroneously conceived as an advantage for horticulture, it is in reality a disadvantage if a payment so low is perpetuated for many Burundian workers. Therefore, leading the workforce to a higher labor payment based on productivity will have more benefits in the long run than the minor savings low wages represent to companies in the short term. One case where this has been tested is at ATB through a program of rewards to the most

productive personnel with almost twice the official daily rate of FBU 700. This is a measure that has helped not only the workers but also ATB by elimination high worker turn over. Today, the workers at ATB are the same of last year, and the same of three years ago.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
At least 8 horticulture companies pay labor based on productivity at least at twice the officially approved wages.	2 per year	2 per year	2 per year	2 per year	8 companies in total

7.5 Catering to market needs

Market intelligence to identify specific needs of clients is sought after as another element of the sub sector's vision. This task goes beyond reviewing time series price reports to identify opportunities. The goal of this element is to strengthen communication channels between producers and local, regional and international trading partners so that procurement needs are catered with the highest degree of flexibility. This will entail major efforts in mastering supply chain techniques, but it will be part of the overall goal of catching up with world class competitors abroad. The specific result of this activity will be to position Burundian suppliers as "preferred suppliers" in a number of product categories for solid international companies at the retail and wholesale level.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
At least four Burundian companies are considered preferred suppliers of supermarket and food service companies in international markets	1 per year	1 per year	1 per year	1 per year	4 Burundian companies

7.6 Contract farming

A country with nearly 5 million small horticulture household farmers needs to think of increasing the horticultural production base. A careful assessment of the crops that better

produced and controlled in small plots will be carried out as well as the definition of the geographic areas with the best agro-ecological conditions.

To avoid the failure of other initiatives in controlling quality from many participants at the production and gathering level, explicit supply contracts will be established following the model of entrepreneurial initiatives in Kenya and Madagascar. This practice, generally known as contract farming, has proven to be a successful small scale horticulture management system. An example of a contract utilized by the company Lecofruit in Madagascar is attached.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
Increasing the supplier base under contract farming with Burundian exporters for a variety of fruits, vegetables, cut flowers and ornamentals gets established.	100 contract-farmed producers	600 contract-farmed producers	1200 contract-farmed producers	1500 contract-farmed producers	3400 contract-farmed producers

7.7 Matching international cooperation efforts

The vision for the next four years is conceived thinking of the timeline of the strategies of a major donor programs in Burundi, STABEX, programmed to last until 2012. This coincides as well wth BAP's work plan. The active companies interviewed are conscious that not all investments to revitalize the horticulture sector can come from donor funding, instead, this is an opportunity to form stronger partnerships through matched investments --whether in cash or in kind-- from donors at least a 1 to 4 basis,.

Expected outcome	Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Cumulative Target
At least 25% of all project investments come from farmers and private sector companies.	Tentative amounts TBD.	Tentative amounts TBD.	Tentative amounts TBD.	Tentative amounts TBD.	Cumulative amount matched TBD.

8. Action plan

In order to attain the expected outcomes of the vision, three strategic actions that address the most pressing constraints to the horticulture sub sector will be implemented. The

support of a number of partners is necessary for the strategic actions to deliver the expected results outlined in the sub sector's vision, with BAP interventions playing a coordination and action-oriented role. These three strategic actions will (1) provide business development and market intelligence services; (2) develop the scalability strategy of each individual firm; and (3) organize the existing production companies into the Association of Producers and Exporters of Burundi to work an industry group able to procure goods and services at a more affordable rate for each individual company and to maximize other donor program investments and actions.

Once discussed with industry representatives, these strategic actions will be the core of the specific action plan to be developed targeting the major constraints to growth. This action plan will have a short term set of activities for the active companies in the sub sector, and a medium term set of activities for other companies in the near future.

8.1 Strategic Actions

Strategic Action 1. Business Development and Market Intelligence Services

Interviews held with private entrepreneurs show that the Burundian horticultural sector has not had access to customized services addressing information on potential opportunities – product categories and product segmentations, new products, emerging markets, price trends, needs of potential buyers in the target markets. To fill in this gap, this strategic action will entail:

- BAP and individual companies will identify and analyze requirements for successful exports to target markets. Quality and safety standards and other specifications such as packaging requirements will be summarized in market opportunity reference sheets or business profiles.
- BAP and STABEX have already discussed the value of partnering on the training activities concerning customized field training that can allow individual firms to seize opportunities identified. Jean-Marie Bibara, director of La Maison de l'Horticulture is the identified contact point at STABEX to initiate actions under this partnership as soon as funds are available in the field.
- The PAGE formed *Comité Horticulture* and BAP will work together to disseminate non-private information on the success stories and lessons learned of individual companies. This will be an important part of motivating potential investors to support the 7-element vision of the horticulture sub sector, which will start with the existing 8 companies identified. *Comité Horticulture* director, Mr. Melance Ntiranpeba, has expressed his support to this initiative as it will contribute to the addition of more active companies in the sub sector.
- *Comité Horticulture*, STABEX and BAP will analyze the performance towards results of this strategic action in order to develop a National Horticulture Strategy. This exercise will also expose the findings on challenges faced to guide

MINAGRI officials on the customization of ISABU, REGIDESO and BBN services to the existing mass of industry representatives.

Strategic Action 2: Center for Business Expansion and New Business Incubation

Consistent with the vision element of rejuvenating the horticulture private sector and promoting reliable innovation, Strategic Action 2 will be in charge of evaluating joint venture possibilities on an individual company basis. This activity is beyond buyers and sellers getting together in tradeshows, but rather a joint-venture seeking shop with a clear package of incentives minimizing risk for foreign investors. This is necessary and consistent with the vision element of improving the image of Burundi in the horticulture business circles.

Four years of project execution will permit BAP and partners to identify and court potential joint-venture companies, whether for a few thousand dollars or larger investments. Given the current country image it is possible that potential partners would prefer a relationship based on trade, but the long term goal of this strategic action is to bring the know-how on value chain and supply chain management to individual companies that can later address joint investment, risk-sharing agreements with purchasing partners.

Since this activity will involve the implementation of business practices of confidentiality, common in the international private sector, this Strategic Action will be further discussed with USAID so that BAP is responsible for maintaining confidentiality as is appropriate. The sensitive information to be managed will involve among others:

- Technical knowledge protected by copy right (e.g. Del Monte Fresh cut technology)
- Financial statements to be exchanged between companies
- Business trips to areas not disclosed to the public
- Management of genetic material protected by copyright
- Contract-farming agreements
- Price and profitability analysis information

This strategic action is envisioned as the most modern business-to-business matching service needed to meet the expected vision for the sub sector.

Strategic Action 3: Organization of the Burundi Horticulture Producers and Exporters Association (BUPEA)

The time is ideal for Burundi to organize the horticulture exporters and producers as a platform to acquire goods and services for more affordable prices. Other benefits of being

formally organized as a private sector group are the capacity to remain "business-oriented" when it comes to representation and advocacy with GoB agencies or providers of key services to the sub sector.

Even though there are only 8-11 companies identified, this small number represents an advantage in the development of the organization's statutes and operational criteria. Great benefits have accrued to similar organizations that started small 10 or 30 years ago in countries like Chile, New Zealand, Colombia, Indonesia, Kenya, etc. The natural evolvement of this private sector structures is to grow in size as more companies join the industry.

BAP, in cooperation with STABEX, PAGE and other donor programs will research the lessons learned in other countries regarding the organization and evolution of similar organizations to propose the best structure and modus operandi adapted to Burundi. Particularly, it is expected to learn about those private sector organizations that have become self-sustainable through direct charges of "pennies per box" of product exported such as the case of the Colombian Cut Flower Association, the Key Lime Growers Association in Colima, Mexico and several more.

The formulation of such organization should commence as soon as BAP's horticulture value chain actions are approved.

9. Annex

9.1 Interview guide for producers and exporters

PROMOTION DE L'AGRO-INDUSTRIE ET DES ENTREPRISES RURALES (PAIR)
17 Rue de Coton, Qtr GATOKE
BP 1643 Bujumbura, BURUNDI

Interview Structure for the Horticulture Value Chain Studies in Burundi

Interviewer: please read this to the interviewee.

This interview is intended to collect information regarding your household, network and environmental assets that will allow PAIR to make well informed project investment decisions in the horticulture sub sector. The information collected will be analyzed systematically to determine the possibilities of taking advantage of market opportunities locally, regionally and globally. As a result, a work plan will be developed specifying the activities what will be carried out in partnership with you, and with the support of other partners in Burundi, including public agencies and NGO's.

By interviewing you we do not commit to providing you any resources, but to work together to identify challenges and opportunities that will allow us to penetrate new markets effectively, or to increase you're your supplies to current markets. You are not obliged to answer any of our questions, and if you need more information regarding our project, you may contact our Chief of Party, Mr. Ben Lentz, at Tel: +257.22.25.79.52 and Fax: 257.22.25.79.51. Please write date of interview here _____

Can we begin the interview?

General information

Target market _____

Target product(s) or category of products _____

Target producer _____

1.0 General household characteristics

1) Household location:	2) Village_____ _____ Commune_____ Province_____
2) Distance to paved road (km)	3) Distance to Bujumbura airport (km)

3) Number of household members:
3.a)Head of household name: _____ _____3.b) Head of household age (years): _____
3.c) Head of household education (years): _____3.d) Head of household off-farm employment _____
Interviewer: please note if head of household has completed college education_____
And write his contact information Phone: E-mail:

4. Other members of household (if not enough space, continue in the back of this page):

4.a) Name	4.b)Age	4.c)Gender	4.d) Education	4.e) Occupation (on/off farm)

2. Household assets

Asset	2007		2003	
1) Quantity of land (has)	Cultivated:_____ Pasture: _____ Idle:)_____ Total: _____		Cultivated:_____ Pasture:_____ Idle:)_____ Total: _____	
2) Quality of land	Type of irrigation	Area (has)	Type of irrigation	Area (has)

3) Own farm traction equipment (specify type, model and make) or animal traction availability (specify number of steers/horses, other)				
4) Own transportation vehicles (specify type, model and make)				
5) Own greenhouse, tunnels, other covered production technology				
6) Own livestock (specify type of livestock and number of heads)				

3.0 Production characteristics

1) Current Crops in 2007					
Crop	Variety	Area (has)	Maturity (years)	Current yields	Markets
		Total land Has			
2) Crops cultivated in 2003					

4. Procurement of production inputs

1) Source of inputs: describe as follows		
Inputs	For current crops 2007	For crops five years ago
1.a) Seeds		
1.b) Fertilizers		
1.c) Pesticides		
1.d) Packaging material		
1.e) Other		

5) Network assets

Asset	2007		2003	
1) Organization/coop membership (specify the name of the organization and years as a member)				
2) Access to production technology technical assistance (specify from what NGO, organization or what public agency)				
3) Access to credit (specify from what entity, whether from private business, community lenders, banks, NGO, etc.)	From who?	Amount (US$)	From who?	Amount (US$)
4) Access to marketing services (specify how producer receives/received support to market his product)				
5) Current marketing channels (specify where producer sells his product and get name and contact information of buyer).				

6. Environmental assets
6.1 Water and water drainage

	(a) 2007	(b) 2003

1) Source of household water (check all that apply, and provide distance to household) 2) How is the household drainage disposed of?	Artesian well ☐ Depth:_____ Dist Km____ Deep well ☐ Depth:_____ Dist Km____ Pond ☐ Depth:_____ Dist Km____ River ☐ Depth:_____ Dist Km____ Municipal (piped) ☐ Depth:_____ Dist Km____ Other specify _____ Municipal drainage ☐ Septic tank ☐ Non-septic tank ☐ Other	Artesian well ☐ Depth:_____ Dist Km____ Deep well ☐ Depth:_____ Dist Km____ Pond ☐ Depth:_____ Dist Km____ River ☐ Depth:_____ Dist Km____ Municipal (piped) ☐ Depth:_____ Dist Km____ Other specify _____ Municipal drainage ☐ Septic tank ☐ Non-septic tank ☐ Other
3) Source of water for production (check all that applies, and provide distance to farming location)	Artesian well ☐ Depth:_____ Dist Km____ Deep well ☐ Depth:_____ Dist Km____ Pond ☐ Depth:_____ Dist Km____ River ☐ Depth:_____ Dist Km____ Municipal (piped) ☐ Depth:_____ Dist Km____ Other specify	Artesian well ☐ Depth:_____ Dist Km____ Deep well ☐ Depth:_____ Dist Km____ Pond ☐ Depth:_____ Dist Km____ River ☐ Depth:_____ Dist Km____ Municipal (piped) ☐ Depth:_____ Dist Km____ Other specify
4) Where does the farm water run-off go?	Other farms ☐ Pond ☐ River ☐ Other	Other farms ☐ Pond ☐ River ☐ Other
3) Quality of water (check all that applies and provide dates of tests made. (Interviewer: please ask who tested water and if it is possible to have a copy of the results)	From the above, which water you consider potable, and which has been tested in 2007. Artesian well ☐ Tested in Month___Yr___ Deep well ☐ Tested in Month___Yr___ Pond ☐ Tested in Month___Yr___ River ☐ Tested in Month___Yr___ Municipal (piped) ☐ Tested in Month___Yr___ Other specify:	From the above, which water you consider potable, and which has been tested in 2003. Artesian well ☐ Tested in Month___Yr___ Deep well ☐ Tested in Month___Yr___ Pond ☐ Tested in Month___Yr___ River ☐ Tested in Month___Yr___ Municipal (piped) ☐ Tested in Month___Yr___ Other specify:

6.2 Soil, climate and topography (interviewer: ask producer to speak for his experience in the area)

1) What crops have grown well in	

the farm in the past?	
2) What is the depth of the soil?	Shallow? Approx cm? Deep? Approx. cm?
3) What is the profile of the soil?	
45) When does it rain here? low (L), medium (M) high (H), nothing (N)	Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dic ☐
5) Is the humidity low (L), medium (M) high (H)?	Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dic ☐
6) Please explain what is the slope of the land in general? (% or moderate, medium, steep)	
7) Please describe what fruit crops are located around outside your farm?	
8) Please describe what short cycle crops are farmed around your farm?	
9) What has been produced around the farm in the last 5 years?	
10) Has the farm ever been flooded?	
11) Are any creek or geologic fractures around the farm?	
12) What do your neighbors do for a living?	
13) Request access to the drainage system of the farm household	
Interviewer: Describe nearby housing, nearby dirt roads, nearby livestock or pasture land, evidence of animal or fecal material, nearby dumpsters or any potential source of environmental contamination. Take pictures of the location and draw a localization map of the farm	

7. VC Situation for the target crop(s)

VC Primary and Secondary Activities	Describe your major challenges along the value chain activities?
1) Pre Production: describe availability of:	Where do you get: Credit: Seeds/seedlings: Chemical inputs (fertilizers, pesticides): Equipment: Ensure water quality: Other:
2) Production	Where do you get: Credit: Seeds/seedlings: Chemical inputs (fertilizers, pesticides): Technical assistance for disease control: Equipment: Water quality for irrigation, spraying and workers' hygiene:
3) During harvest	Where do you get: Available labor: Harvesting technology: Harvesting equipment and supplies: Cold chain equipment: Other
4) Post harvest	Do you have: Available and functional gathering center Availability of cold chain or other temperature management equipment/technology Technical assistance Post-harvest equipment (trays, baskets, boxes, etc.) Other?
5) Commercialization	How did you find your market? How do you communicate to your market? How do you transport your product to your market? Can your market access increase?
Costumer service/management of account receivables	How do you communicate with your buyers? In person____ By phone____ By email _____ Fax____ Do work on a credit basis with buyers? Do you always get paid?

	Do you trust your buyers? Are your buyer(s) satisfied? How would you improve the relationship with your customer? Can your buyer buy more of your product? How would you increase your current production and exports?

8. Farmer's experience and training needs

1) How long have you farmed this land?				
2) What training have you received and when:				
3) Training area	Yes	No	If Yes, When	If yes, by whom?
Crop production planning				
Soil and water management				
Pest and disease control				
Pesticide management and safety				
Pesticide container disposal				
Seedling production				
Seedling transplanting				
Plant nutrition and fertilizers				
Composting				
Harvest and post harvest technology				
Environmental safety				
Food safety				
Organic agriculture				
Good agricultural practices				
Good harvesting practices				
Good manufacturing practices				
Cold chain management of perishables				
Export packaging and logistics				
Labeling requirements of Intl markets				
Marketing of fresh produce				
Other specify:				

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9.2 List of contacts interviewed

KEY INFORMANT AND INDUSTRY REPRESENTATIVE INTERVIEW LIST

#	Date	Organization/ Person/products	Position	Contact :Tel/e-mail
1	Nowrooz Naderi Trading Company	Abdullah Naderi	Purchasing Manager	[redacted]
2	Al Sughaiyer Trading Co. LLC	Shariff Awiwi	Export and Import manager	[redacted]
3	Jordan-Lebanse Co. LLC	Al Hariff	Import Export Commission Agent	[redacted]
4	Al Harbi Food Stuff Trading Company. LLC	Khorsed Altaf	Fruit and Vegetables wholesale agent	[redacted]
5	Del Monte Fresh/Dubai	Mohammed Abbas		[redacted]
6	12/05/07	DME Export Mme Douillet Jiwan Naznin Ethnic products for export to Europe	Director	[redacted]
7	12/05/07	ATP Mr Thierry Nzohabonayo Roses	Director	[redacted]
8	12/06/07	Mr Jacques Heidmann 9Ornamental plants for the local market	Director	[redacted]
9	12/10/07	PAGE Mr Melance	Chairperson of the Horticulture	[redacted]

#	Date	Organization/ Person/products	Position	Contact :Tel/e-mail
		Ntirabampa	Committee	[redacted]
10	12/10/07	BBN Mr Gervais Nzinahora	Director a.i.	[redacted]
11	12/10/07	Mme Therese Harahagazwe	Manager and owner	[redacted]
12	12/10/07	STABEX Mr Jean Claude Noblet	Director	[redacted]
13	12/11/07	REGIDESO MR Jean Marie Ndarurinze	Director	[redacted]
14	12/12/07	Maison de l'Horticulture Mr Jean- Marie Bibara	Director	[redacted]
15	12/17/07	Province Muramvya Mr Athanase Bucumi	Responsible for PRASAB Project	[redacted]
16	12/17/07	Province Muramvya Mr Oscar Ndayizeye	Governor	[redacted]
17	12/17/07	Province Muramvya Mr Albert	Director DPAE	[redacted]

#	Date	Organization/ Person/products	Position	Contact :Tel/e-mail
		Babona		
18	12/17/07	Province Muramvya Association of vegetables small growers of Mubarazi Group Responsible: Mr Zuberi	Group Responsible	[redacted]
19	12/26/07	CHRISTA FLORA Mme. Christine Ngaruko	Director	[redacted]
20	12/26/07	Mr. Placide Nyeretse. Passion fruit Production	Producer	[redacted]
21	12/28/07	REGIDESO Mr Joseph Ndayegamiye	Laboratory Responsible	[redacted]
22	01/06/08	Paul Ntunwenimana Association Abahizi	Representative	[redacted]
23	01/15/08	ISABU Mr Salvator Ntihabose	Managing Director	[redacted]
24	01/26/08	COMABU The members of the cooperative	Cooperative Chairman and members	[redacted]
25	02/01/08	Mr Pascal Nyabenda	Governor of Bubanza Province	[redacted]

9.3 Bumper's Amendment analysis

This table summarizes the crops, the target market, and argues that none of the target crops under BAP conflict with the Bumpers Amendment.

Crop	Target market			Reference
	Western Europe	Middle East	Regional and Local Market	
Fruits				
Mangoes			X	1, 2
Papayas			X	1, 2
Pineapples			X	2, 6
Watermelon			X	2, 6
Cantaloupe			X	2, 6
Honey dews			X	2, 6
Strawberries		X		2, 3, 6
Raspberries		X		2, 6
Blackberries		X		2, 6
Vegetables				
Green Podded Peas		X	X	6
Specialty Eggplant	X			6
Cut Flower/Ornamentals				
Roses	X			1
Sanseiveira	X	X	X	1
Dracaena species	X	X		5
Other foliage	X	X		5
Heliconias	X	X		5
Musaceas	X	X		5
Palmaceas	X	X		5
Other tropical flowers		X	X	5

Reference list:
1. Not produced in the US in commercial volumes
2. Target market not an important destination for US producers/exporters
3. Major competitors are Middle Eastern countries such as Iran, Egypt, Lebanon, and Asian countries such as India, Philippines and China
5. US production in commercial volumes from Hawaii and Florida is a minor share of US market, and no evidence of shipments to Europe and the Middle East was found
6. Produced in large commercial volumes in the US, but not shipped to market(s) of interest

References:

Data supporting this table was obtained from Fresh Produce Journal UK 2006 and 2007, FAO Stats 2006, Agricultural Marketing Service, USDA and US International Trade Commerce Department. Consultations were also made with the *Fruit and Tree Nuts Outlook of the USDA/ERS of several years* from 2003 to 2007.

Further Analysis on Selected Products

The following provides a market outlook summary for selected crops and the market share of US producers. Most crops with a reference number 6 or produced in Hawaii are included to demonstrate that target crops under BAP do not represent an issue concerning competition against US growers/shippers.

Green Podded Peas
California-central production of green peas represents 12% of the total consumption of green peas available in the US (2003). The other 88% corresponds to imports: 63% of total imports into the US come from Guatemala and 26% from Mexico. US exports to Europe, the Middle East or Africa are not significant and vastly undocumented.

Melons (cantaloupe, honeydews)
Costa Rica (25%), Guatemala (28%), Honduras (20%) and Nicaragua (0.7%) together have 74% of the US market of melons (2003) while local production share is 13%. However, US production peak is from June to August while the peak of imports into the US from Costa Rica and Honduras are from January to April, and from Guatemala from December to April. US exports of any product under the melon category to the target markets is not documented.

Mango
Since 1999, AMS does not register significant volumes of mango produced in the US (Hawaii). Mexico is the main supplier to the US market (62%), while Brazil is the main supplier to the European market (68%).

Papaya
Even though Hawaiian production of papaya has grown 25% from 2003 to 2007, its participation in the US market has being between 13% and 18% during the same periodm and its participation in Europe, the Middle East and Africa is not documented.

Pineapple
About 60 percent of the world's fresh pineapple exports come from Costa Rica, the Ivory Coast, and the Philippines. Hawaiian production of pineapple has increased 5% from 2003 to 2007, while US imports have increased 66% during the same period.

9.4 Contract farming agreement example

LECOFRUIT

CONTRAT POUR LA CULTURE DE CORNICHON (semis n°…)
SAISON CULTURALE 20… / 20

1. Ce contrat est établi entre :

M./Mme : …….
Résidant à : ……. Village de :……..
Commune de : ……. District de : ……
Titulaire de la carte d'identité nationale N°……. établi à ……...

ci-après désigné « cultivateur »,

et la société Lecofruit représentée par M./Mme …….. auprès des cultivateurs.

Le cultivateur fait partie d'un groupe et possède une « compostière ».

2. Le cultivateur s'engage à réaliser la production suivant les conditions énumérées dans le présent contrat :

2.1. Les directives qu'il lui faut suivre, et qu'il admet accepter en apposant sa signature sur ce contrat.

2.2. Le calendrier cultural et l'itinéraire technique sont comme suit :

- 2,5 charrettes de compost doivent être apportés sur la parcelle avant la date du ……
- Labour de la parcelle de 1 are avant la date du ……
- Semis à faire avant la date du ……
- Le repiquage doit être fait au plus tard 3 jours après que le responsable de la Société Lecofruit ait annoncé la date de repiquage.
- Destruction des cultures par le cultivateur sur décision de Lecofruit suivant l'état de la production (il en sera de même pour la destruction de la parcelle de semis après le repiquage).

2.3. Lecofruit fournit à l'avance au cultivateur :
- Semences (gratuitement)
- Engrais minéral et produits phytosanitaires valant …. MGA ou équivalent à ..... Kg que le cultivateur remboursera au moment de la récolte.

2.4. Le cultivateur rendra à Lecofruit les plants d'arbres qu'il n'aura pas cultivé, et ce gratuitement.

2.5. Il est interdit de réaliser une association de cultures sur les parcelles où les cornichons sont cultivés

2.6. Seuls les produits phytosanitaires fournis par Lecofruit devront être utilisés sur les parcelles sous contrat.

2.7. Le cultivateur accepte de rendre à Lecofruit l'emballage des produits phytosanitaires qui lui ont été donnés aux dates qui seront précisées à l'avance.

3. Lecofruit achètera au cultivateur les cornichons qui sont conformes à la « jauge » et à la qualité demandée par Lecofruit suivant les indications qui sont affichées au « Centre d'Agréage », qui ont été lavés, qui ne sont ni coupés ni entaillés, qui sont droits et qui ont une apparence saine. Le cultivateur apportera sa production au centre d'agréage de ……. au prix de 340 MGA le kilo.

4. Lecofruit s'engage à acheter les cornichons qui sont conformes aux normes mentionnées plus haut à l'article 3 au prix de 340 MGA le kilo.

5. Le cultivateur s'engage à vendre à Lecofruit toute sa production qui suit les normes mentionnées plus haut (et à ne pas la vendre sur les marchés).

6. Lecofruit déduira du prix total de la vente de la production du cultivateur le montant de l'avance qui lui a été accordée au début.

7. Le prix de la vente des cornichons que Lecofruit a acceptés (défalqué de l'avance) sera payé au cultivateur au Centre d'Agréage mentionné à l'article 3, toutes les semaines, après la quatrième semaine de récolte.

8. Si le prix total de vente des cornichons est inférieur à l'avance accordée par Lecofruit, il est de la responsabilité du cultivateur de payer à Lecofruit la différence, au plus tard le dernier jour de récolte.

9. Le non respect des articles 5 et 8 de ce contrat pourra entraîner Lecofruit à porter l'affaire devant les tribunaux.

Fait à ……, le ……

Signature du cultivateur

Signature du représentant de Lecofruit