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Review

Supply and marketing of floriculture in Ethiopia

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The review of supply and marketing of floriculture in Ethiopia was conducted to analyses the production potential and to know the marketing share of the country. The data was collected from secondary and primary sources. Ethiopia has been operating in the floriculture industry for over 20 years. As is the case in many developing countries, the major export items of Ethiopia are dominated by few agricultural products that earn very small amounts in the international market. Moreover, most of the exports are destined to only few countries. Given the highly capital intensive nature of production and processing, rose farming is not a smallholder activity. It is also important to note the extremely tightly controlled time dimension of the logistics process, given the product attributes desired and the fragility and perishability of the roses. Another characteristic of the Ethiopian floriculture sector is the lack of domestically produced inputs that flower producers can access. The export volume and value of cut-flowers accounts for a small proportion of the total exports of Ethiopia. In recent years the sector is showing improvements in terms of the quality and quantity of exports to the international market.

Key words: Roses, production, value chain, floriculture, supply.

INTRODUCTION

Floriculture can be defined as a discipline of horticulture concerned with the cultivation of flowering and ornamental plants for gardens and for floristry, comprising the floral industry (Getu, 2009). Most developing nations which have geographic advantage take it as a solution to achieve rapid economic growth (Frank and Cruz, 2001). Ethiopia, like many other developing countries, is attempting to diversify its export base with a view to gaining new sources of income and foreign exchange and thus reducing its exposure to price volatility that typify international markets (Ethiopian Horticultural Strategy, 2007). Besides, the country is benefiting from this development through creating employment opportunity for unemployed citizens.

Because of these reasons, in the last five years, the floriculture industry in Ethiopia has become a fast growing export business. As a result of due attention given by the government to this sector and the unparalleled advantages that Ethiopia has in this sector compared to any other products, a substantial number of investors have started investing in the country. According to Ethiopian Horticulture Producers Exporters Association pamphlet (2007), investors are attracted by an improved investment code, a five year tax holiday, duty-free import of machinery and easy access to bank loans and land acquisition. In addition to the above incentives the favorable agro-ecological condition of the country, the abundant cheap and easily trained labor, proximity to EU and Middle East markets encourages so many foreign and local investors to invest in Ethiopia.

In recent decades, the global demand for cut flowers has grown considerably. This growth in market demands and its diversification value has attracted increasing numbers of developing countries to the global fresh flower trade.

European cut flower growers (especially Netherlands) have been looking to other continuities for more affordable conditions as experienced other East African countries like Kenya, Tanzania and Uganda (Laws, 2006). Though floriculture development in Ethiopia is blooming in recent years, it started for commercial purpose in 1980/81 which is now twenty six years ago. The first fresh cut flowers production was commenced in

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1981/82. The Derg regime had established Horticulture development corporations where government was responsible both for regulation and production even for marketing of horticultural products including flowers. During that time the production and export of cut flowers in Ethiopia was not established with the well-planned aim of profit seeking but foreign exchange earnings (Ethiopian Horticultural Strategy, 2007).

As a result of this, the industry was one of the highly subsidized sub-sectors during the Derg regime (Habte, 2001). Floriculture was started to show modest increase in 1990s by 2-3% from the agricultural output of the country. In 2001 it contributed $4.7 million to the country's foreign currency earnings.

A floriculture sector organization exists as Ethiopian Horticulture Produces Exporters Association (EHPEA), but needs further strengthening to effectively deal with the many issues related to a fast growing industry. Dialogue between government and private sector is taking place but is open to further intensification and increased efficiency. Ethiopian export horticulture is developing at a unique and unexpected high speed.

In 2000, only nine (9) ha of land were under flowers and this has increased to over 1,200 ha in 2008, with more than 80 flower growers. More than 90,000 jobs have been created in and around these flower farms. Some 70 percent of the country's flower products are exported to the Netherlands while 10-15 percent is exported to Germany. Russia, Japan and the Near East are other relevant markets. The rapidly growing flower sector in Ethiopia has now become the fourth foreign-currency generator of the country next to the top three: coffee, oilseeds and cereals. In addition to the positive impacts in terms of foreign exchange, economic development and creating employment, the floriculture sector provides an inspiring example of a successful introduction of advanced labor-intensive production technology. Ethiopian exports of fruits, vegetables and herbs have been limited but, with new investors coming in, these are now growing strongly. Both in Europe and the Middle East a growing interest exists for products from Ethiopia. Ethiopia's flower industry is a current example for how much potential the country has in agricultural production. Floriculture was identified as one of the target industries to be developed to generate agriculture-led employment in downstream processing industries. Government officials from various departments and a host of private initiatives have cooperated closely to establish a base for flower production (Gebre Sorsa, 2011).

Socio-economic and Environmental view of Floriculture Industries in Ethiopia

Floriculture industry is a new agro-industry activity in Ethiopia. The expansion and growth of the industry magnified the economic significance of the sector, but the social and environmental implication of the sector was not given due attention even though the sector was still blamed for some of its social and environmental shortcoming worldwide (Gudeta and Degytnu Tilahun, 2012).

Since the industry is at its infancy stage and the government as well as optimistic society of the country were very pleased at the beginning observing that it will increase the nation's foreign exchange and give a work opportunity of many jobless society. More than hundred thousands of citizens got a job directly or indirectly from the sector and most importantly women accounted for 70% of the total work force mainly located at rural areas. Due to the fact that women within such a developing country have some difficulties of having their own job it is turn out to be an important source of income and one way escaping from being dependent on their husband or family's shoulder.

Many Ethiopian environmental activists still argue that environmental policies or standards, labor regulations are not implemented by many companies within the industry as per the standards provided by the government. These concerns are related to labor right like working condition (Belwal et al., 2008). One of the issues which floriculture industries worldwide commonly blamed is unsafe working conditions of floriculture farm laborers associated to massive chemical usage of the industry. International environmental and workers advocacy groups charge the floriculture industry which grows cut flowers in greenhouses with exposing laborers to dangerous pesticides, with failing to provide health safeguards and with damaging the environment from over use of nature resources.

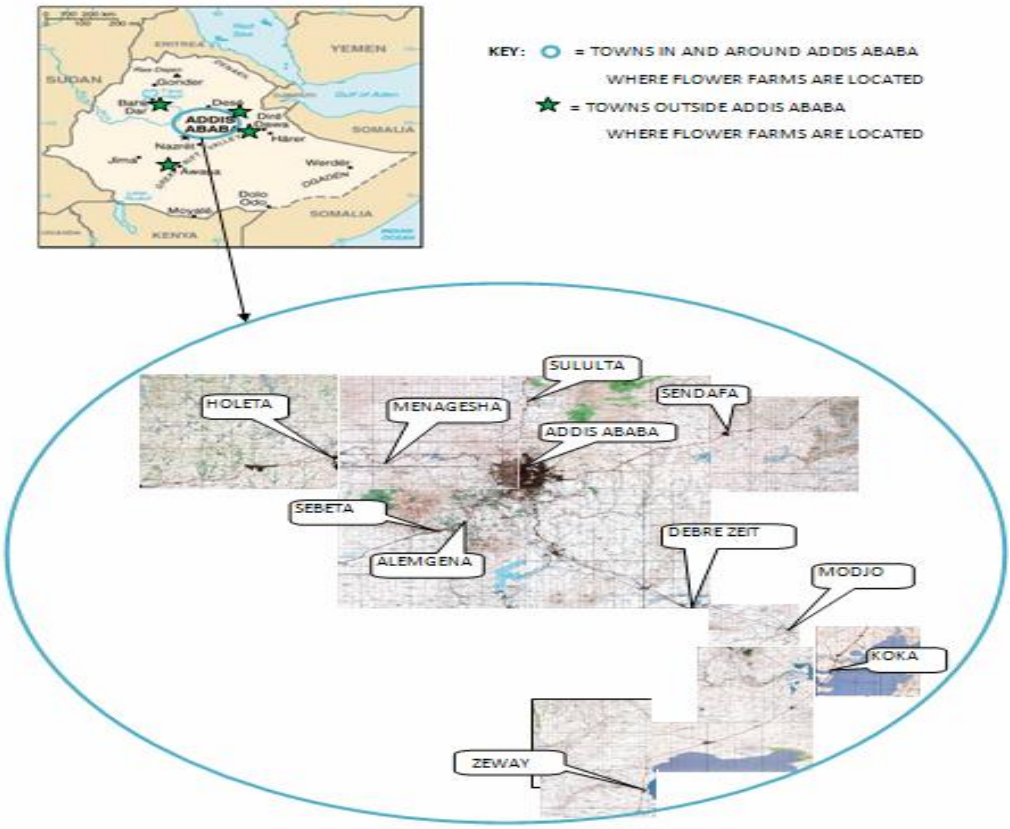
Production and Supply

Production

Given the diversity of climatic conditions and altitudes in Ethiopia, three basic types of rose varieties can be grown. These are sweetheart (30-40 cm stems and small buds), intermediates (40-60 cm in stem length) and tea hybrids (60-80 cm stems). The majority of Ethiopian production falls into the intermediates, with considerable variation between farms. The yields per square meter also vary, with stems per square meter for tea hybrids ranging from 120 to 140 stems per square meter and for intermediates from 140 to 180 stems per square meter.

Rose grown in green houses, are perennial shrubs that continuously grow from new shoots and may be harvested for a period of 4 to 7 years. Besides, under hot and humid conditions, for example during the Mediterranean summer, rose flowers have a poor economic value because of their short and thin stems which

Figure 1. Distributions and Location of Cut Flower Farms in Ethiopia, 2010.



carry small buds and have a short shelf life. As crop age increases, these features reduce flower quality in winter time too (Kool, 1996).

Under green houses, for most commercial varieties, the best quality of flower shoots, in terms of stem length, diameter of leaf area and flower bud size, is obtained at 180 ^{0}C. As temperature increases, the periods from cut back to flowering became shorter; stem became shorter, diameter and leaf area smaller, flower weight decreases and adjoins with fewer and smaller petals (Kishin et al., 2001).

Green house flowers can possibly be grown in both soil and soilless media whose physical and chemical properties are adjusted to obtain maximum productivity. Furthermore, properties such as, heat conservation, water holding capacity, fertilizer levels and pH can also be manipulated to reduce the amount of pests, pathogens and the probability of infection (Jarvis, 1992).

According to Ben Taylor (2011), each type of flower has different optimal conditions varying by light intensity, light exposure, soil acidity, water needs and temperature amongst other factors. This is mainly because, high light intensity increases photosynthesis and directs partitioning of assimilates to young shoots. This increased transport of assimilates to young shoots stimulates the growth and flower development. Hence, lighting increases yield by promoting bud break and decreasing flower abortion. In other words, adequate lighting increases the number of bottom breaks and accelerates the development of the flowering shoot, thus reducing the time between flushes.

Above 80 farms are currently involved in cut-flower production of which more than 30 are indeed also exporting. The export volume is still increasing significantly each year as gradually a larger areas coming under production. For example, near the town of Zeway, Sher-Ethiopia (subsidiary of Sher-Holland, the biggest flower producer in the world), is leasing about 1,000 hectares of land to develop what will be the largest flower farm in the country. Sher plans to build about 40 to 50 hectares of greenhouses every year up to a total of 250 hectares. The intention is to rent out most of the greenhouses to other growers in parts of 9 hectares plus handling area. Sher-Ethiopia may deploy its own transport and cargo plane to shuttle its exports between Addis Ababa and The Netherlands. Also in other parts of the country such as DebreZeit, Nazaret, Holetta and Sebeta new greenhouses are erected for production expansion (figure 1). The average farm size is between

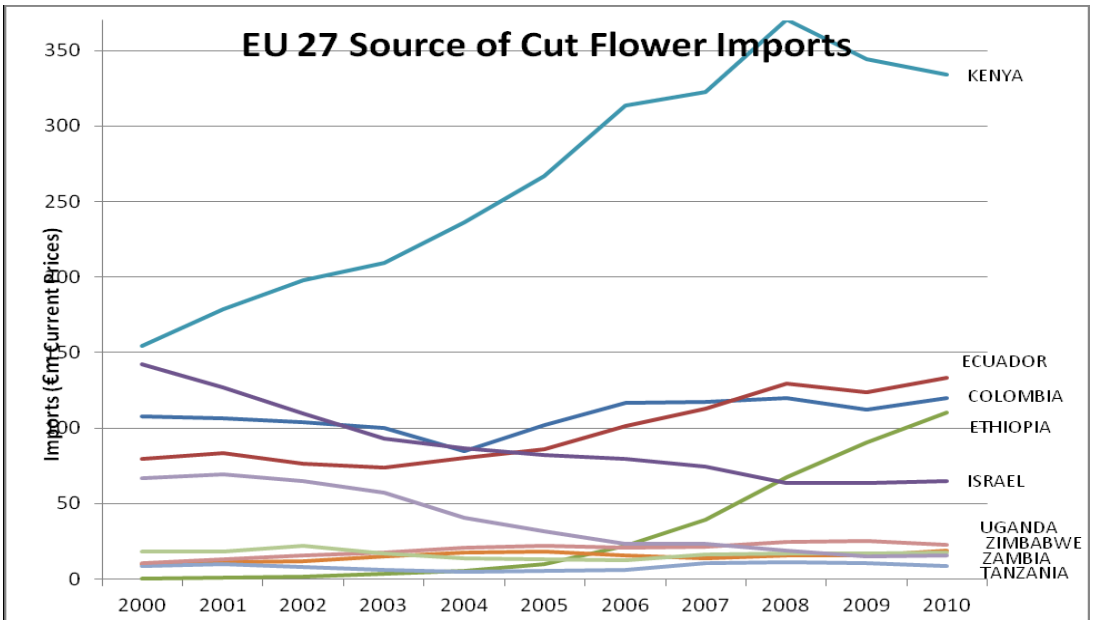


Figure 2. Cut flower imports by country; Data: Eurostat.

3.5 – 10 ha, with few larger producers have an area under cultivation of up to 20 ha. The majority of the farms grow only roses. Most of the farms grow multiple rose varieties, six to ten on average. The most important rose varieties currently in use are Pascha, Circus, Aloha, Milva, Shanty, Duett, T. Amazon, Paschamina, Jupitor, Indian Sunset and Sweet Candia. Most farmers grow their roses on soil, but a few rose growers have started to use hydroponics as growing medium. All exporters of floriculture products have their own cooled processing and packing warehouse where the roses are prepared for transport after harvest. Virtually all export growers also have their own refrigerated truck which is use to deliver the flowers to the airport. As in most other African exporting countries the international transport and marketing constitutes the largest part of the overall farm-to-market cost. A recently conducted value chain analysis for the Ethiopian rose sector provides an insight in the costs and benefits of using the growing mediums. It furthermore outlines in details the production, transport and marketing costs in the Ethiopian rose sector.

Supply

Market supply refers to the amount actually taken to the markets irrespective of the need for home consumption and other requirements where as the market surplus is the residual with the producer after meeting the requirement of seed, payment in kind and consumption by peasant at source (Wolday, 1994). In order to describe market supply words like marketable surplus and marketed surplus are usually used.

The rose supply chain involves several steps from production to export. In the production component, the process begins with selection and trials of varieties, propagation of varieties, planting cuttings in greenhouse, application of chemical inputs and irrigation, disease control and harvesting in the greenhouse. In the logistics/post-harvest component, there is initial cooling at 4 degrees centigrade, then grading, sorting and bunching, a second cooling at 2 centigrade, then packing in specialized cartons, loading to refrigerated truck, customs clearance, airport handling and air shipment. In the marketing component, there is identification and negotiation with buyers, searching market information and ensuring completion of sale. It is interesting to note that what clearly differentiates this sub-sector from the traditional agriculture model is that, not only is production year-round and highly industrialized, but the post-harvest processing is tightly coordinated with a three-day period from harvest to arrival in destination market abroad.

The supply chain is process-intensive in both the pre- and post-harvest phases, including strict requirements on chemical application and timing, temperature and humidity control, irrigation, cooling temperature and length, packing materials and quality differentiation and sorting. Given the highly capital intensive nature of production and processing, rose farming is not a smallholder activity. It is also important to note the extremely tightly controlled time dimension of the logistics process, given the product attributes desired and the fragility and perishability of the roses.

Another characteristic of the Ethiopian floriculture sector is the lack of domestically produced inputs that

Table 1. Performance of Ethiopian cut-flower export by volume from 2000 to 2006 G.C.

Volume year	Volume (in million stems)	Growth (%)
2000	1.64	-
2001	4.02	145
2002	6.72	67
2003	16.0	138
2004	32.0	100
2005	83.0	159
2006	112.0	34,9

Table 2. Volume of Ethiopian cut-flower exports (*In millions of K.G*) from 2010-2012.

Volume year	Volume (in million KGs)
2009/10	36
2010/11	41.6
2011/12	46.8

flower producers can access. Also flower producers tend to purchase imported input materials themselves rather than through traders.

This is partly due to the fact that certain specialized inputs such as specific floriculture pesticides are not (yet) formally registered under the Ethiopian pesticide registration regulation. As such these inputs may only be imported by growers under special permission of the Ministry of Agriculture and Rural Development and the Ministry of Trade and Commerce. Initiatives are underway to update the pesticide registration act in this respect to facilitate the production/import, trade and utilization of the required pesticides. However, costs seem to be also a factor; flower producers report savings of up to 20% when comparing importing agricultural inputs themselves with procurement through traders in Ethiopia. These savings, however, do not account for additional staff and administrative costs incurred by producers who engage in direct purchasing. The overall size of the sector should lead to possibilities to attain economies of scale in input supplies; this should lead the emergence of a specialized input supplies sub-sector that can provide the growers with quality inputs at competitive prices. Management of export farms could then focus more exclusively on their core activities. An example of such a development is the PSOM-funded initiative of Horti Coop to establish an input supply outlet and laboratory and testing services for the export horticulture in Ethiopia. More of these examples are required to enhance the competitiveness of the sector in this respect when compared to other main horticultural production countries in Europe and Africa.

As shown on figure 2 Ethiopian cut-flower export was increasing very fast since 2004. Even the floriculture industry in the country was at an infant stage, the production and supplies are promising and now it is at good period (Table 1 and 2). As shown below the flower export has great economic contribution to Ethiopia and including other commodities.

Ethiopia is an increasingly important player in the regional and global market for cut flowers. In 2005, the country exported US$12 million worth of cut flowers. By 2009, its cut flower exports increased by tenfold to US$131 million, which represented 13% of African exports and 2% of world exports. In the first ten month of 2010 alone, Ethiopia exported an estimated US$250 million of cut flowers.

The term vertical integration describes a style of management control. Vertically integrated companies are united through a hierarchy with a common owner. Usually

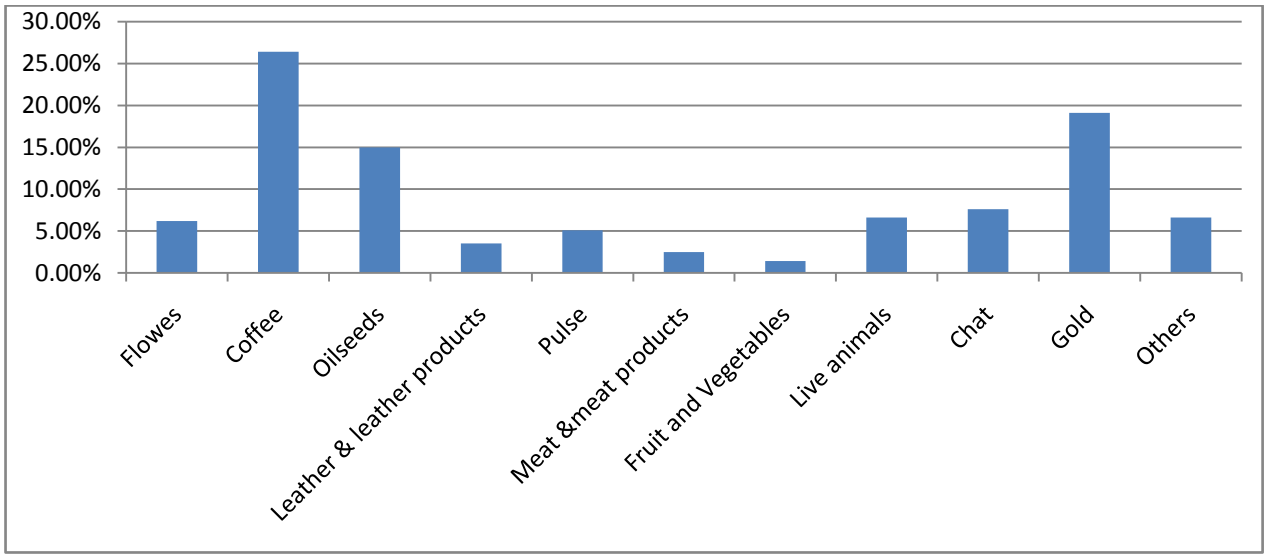


Figure 3. Ethiopian export share of selected commodities in 2011/12.
As shown in figure 3 above floriculture industry has a significant contribution in the Ethiopian economy.

Table 3. Cut Flowers Exports, Sub Saharan Africa, 2009 (US$ thousands).

Exporters	Exported value in 2005($)	Exported value in 2006($)	Exported value in 2007($)	Exported value in 2008($)	Exported value in 2009($)	% of world	% of Africa
World	5,617,103	6,811,428	7,121,896	7,705,355	7,305,167	100	-
Africa	346,263	1,134,251	636,271	804,636	1,012,821	14	-
Kenya	242,561	274,946	313,412	445,996	421,484	6	42
Zimbabwe	33,658	765,230	201,056	185,772	334,117	5	33
Ethiopia	12,128	25,137	68,827	104,740	131,518	2	13
Nigeria	-	-	4,585	9,905	67,725	-	7
South Africa	24,408	22,064	25,439	28,412	26,467	-	3
Tanzania	9,282	7,791	8,812	13,428	14,075	-	1

each member of the hierarchy produces a different product or (market-specific) service and the products combine to satisfy a common need. It is contrasted with horizontal integration.

Vertical integration is one method of avoiding the hold-up problem.

Vertical integration led business people to use the system to promote better financial growth and efficiency in their companies and businesses.

As shown below (figure 4) vertically integrated flower supply chain is the most important to acquire more benefit and to resist financial crisis.

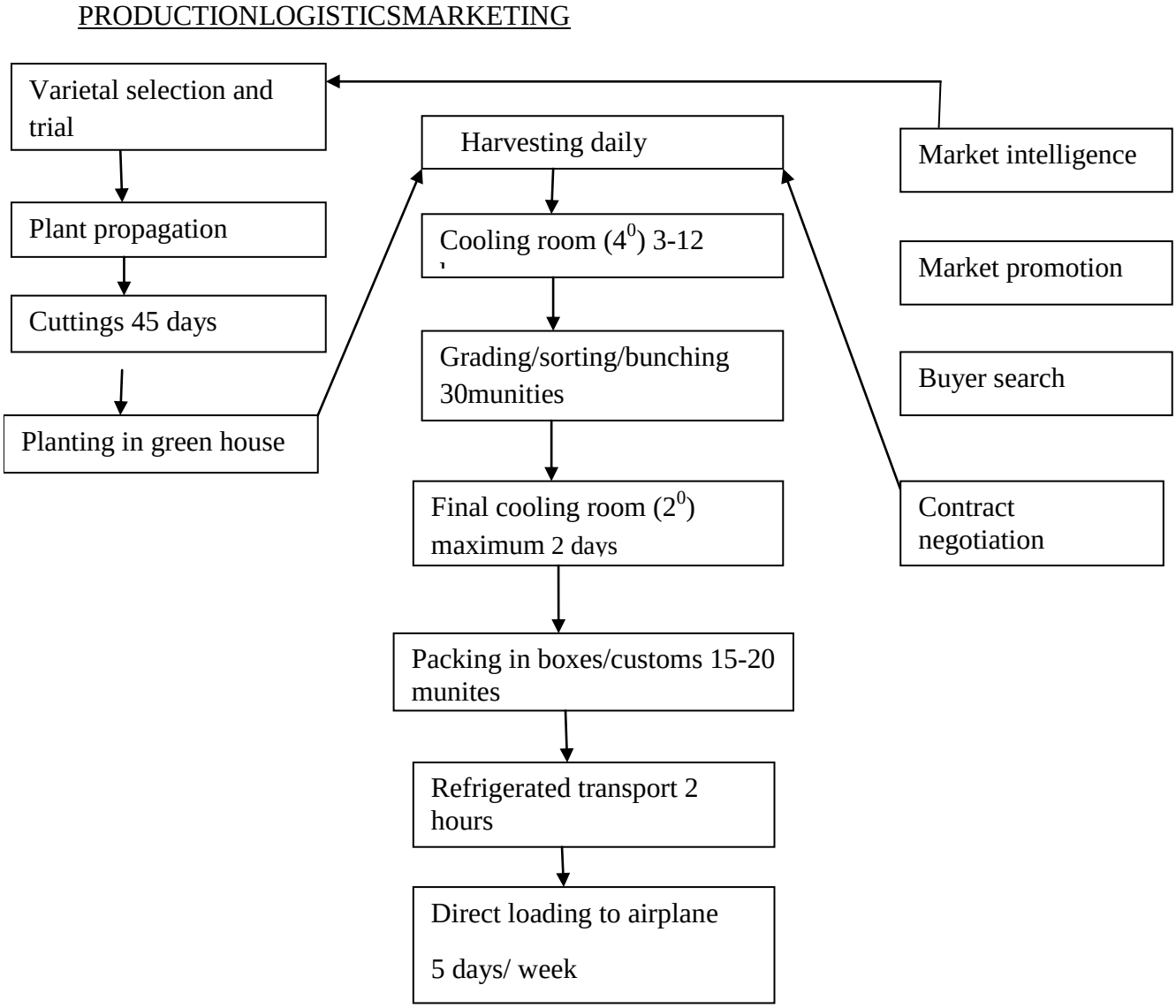
Marketing Functions, Stages and Agents

Marketing Function

Marketing function is a fundamental or basic physical process or service required to give a product form, time, place and possession utility a consumer desires.

According to Saccomandi (1998), functions can be classified based on objectives: logistical, marketing and economic functions. Logistical functions are related to the concentration, transport and preservation of products. Marketing functions are dedicated to classification, pack-

Figure 4. Vertically integrated Rose supply chain (Binyam Zewdie 2007).



aging, development of demand and market information. Economic functions include financing, risk bearing and facilitation of exchange.

The most important characteristics of a marketing function is that it is a physical process or facilitating service which must be performed one or more times within the marketing system. Eight general accepted functions are assembling, grading, storing, processing, packaging, storing processed products, distributing and transporting.

Marketing functions can be seen as essential link between producers and consumers in two different and yet simultaneous and connected ways. First, the marketing agents link producers and consumers physically, by actually buying, storing, transporting, processing and selling commodities. Simultaneously, however, because exchange of commodities is taking place, open or implicit price signals are being generated and transmitted to the active economic agents in the food system, influencing their production and consumption decisions (Timmer et al., 1983). Goetz and Weber (1986) stated dimensions before a commodity be available to the urban consumer to include: the temporal, spatial and form dimensions. The temporal dimension is regarding the storage and providing reliable supply, the spatial dimension regards the transport of the produce from point of production to urban centers and the form dimension discloses the processing, labeling, packaging, sorting and cleaning activities before the product arrive at the final consumer. The level of functions could differ from product to

product. A clear understanding of marketing function with an exploration of strengths and weakness help where to improve the marketing system.

Assembly

This activity enables us bring together products from a large number of farms scattered around the countryside to a central point where they can be gathered in large lots, sorted, graded and packaged according to the desired specifications in quantity ready for the market.

Storage

Most agricultural products storage is delicate, as specific temperature and proper packaging must be observed to maintain the desired humidity level. The humidity of the air surrounding the product affects its equilibrium moisture content. Storage requirements are different depending on the product form (packaged or loose) and storage type (long term or short term). Without proper storage, most agricultural products lose their taste. Poor quality product generally results from poor drying and poor storage facilities. This affects the marketability of the product as consumers will not engage in repeated buying behaviors following low quality. Storage also facilitates the adjustment of product supplies to its demand and reduces price fluctuations as the product can be kept for some period of time and supply can be evened out, respectively.

Standardization and Grading

Standardization refers to the determination of the standards to be established for different commodities. It is the establishment of quality and quantity measurement that makes selling and pricing possible. Standards are set on the basis of certain features such as size, weight, color appearance, texture, moisture content, amount of foreign matter present. Grading, however, refers to sorting of product attributes into uniform categories according to the quality specifications laid down. Grading follows standardization. It is a sub-function of standardization. Grades and standards assist market participants to determine the price because both of them will know specifically what type of product they are dealing with under a grading and certification system. Grading is important when the buyers demand products that meet specific standards and/or when producers want to be paid according to the quality of their products. It not only increases buyer's satisfactions but it also provides incentive to producers to improve qualities and improve overall efficiency of the prevailing market.

Transportation

Transportation provides desired changes in location. It allows the cultivating of a produce in areas particularly adapted to their production and then moving them to the buyers. However, the long distances over which a produce are transported often results in relatively high transportation costs and potentially lower quality, due to the damage during transport if the products are not properly packed. One of the issues for the floriculture industry in Ethiopia is the weakness of the international and the domestic transportation system although it shows significant improvement.

In addition, the refrigeration system at the airport is not sufficient enough and so the flowers cannot remain long at the airport. Therefore, each farm has to adjust the time when they cut flowers to the departure time of flights as well as the amount to be exported to the available space. Most of the farms are, as a consequence, located within 50km from the airport. The proximity of farms to each other, however, causes shortage of water, drainage facilities and labor. Lack of a comprehensive transportation system, that is absence of a transportation company from the farm to the destination, pushes up the transportation costs in Ethiopia as compared to other African countries.

Handling and Packaging

For transporting the product from seller to buyer, proper handling and packing are crucial. In order for the product to be transported, it must be handled and packaged properly. Proper packaging; preserves the moisture level and protects it from contamination, facilitates handling of the product, makes the final product more attractive to the buyers and gives instructions on how to handle, store and use it. The auction market is characterized by loose, market-based trading relationships, which are less strictly coordinated and less buyer driven. In contrast, in the direct sales market, buyers tightly coordinate the value chain. Unlike the auction market, buyers in the direct sales channel strictly apply public standards (such as safety, social or environmental) and impose additional value chain specific standards related to volume, quality and timing consistency (Riisgaard, 2009). The implication is that the required capabilities of suppliers should differ by the two marketing channels. Supermarkets and other retailers in the direct sales chain demand larger varieties of flowers, while auction markets can handle a large volume of one variety. Suppliers involved in direct sales, therefore, need to provide a number of varieties, which in turn necessitates in-house capacity for propagating varieties (Wijnands, van der Lans and Hoobbs, 2006). The need to supply a large number of varieties and fulfill various other requirements in the direct sales chain affects

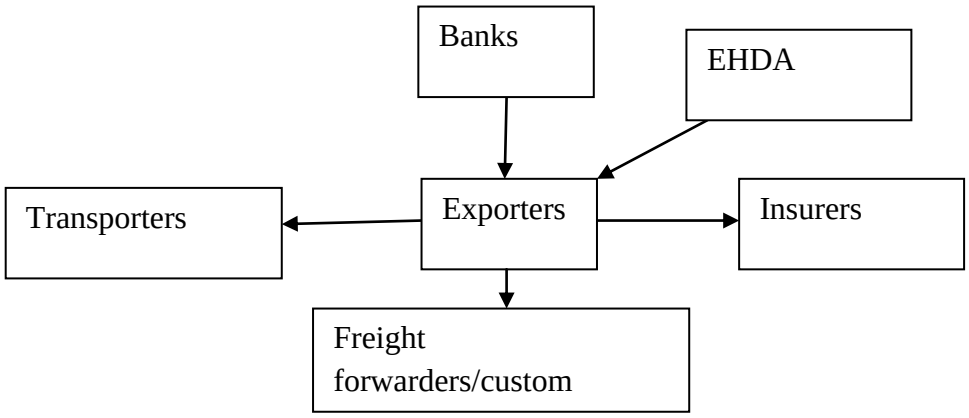


Figure 5. Facilitating agents in international cut flower trade.

the size of the firm. Involvement in direct sales also demands higher capabilities in expertise, logistics and marketing intelligence than the auction given the specific requirements for consistency in volume, quality and timing.

In addition, there are also facilitating marketing functions in flower market as shown in the (figure 5) below.

Marketing stages

In Ethiopia, the main market of flower production is export. Export accounts for about 97% of total sales revenue of the sector in 2007. The domestic market is more or less residual market for the exporters. For example, in 2007 only 11 firms sold no more than 10% of their products in domestic market, with the exception of one cutting farm that sold 100% of its product in the domestic market. Cut-flower exports to the EU market are made in two ways: auction and direct sales to supermarkets and other retailers. The relative ease of accessing the auction market means that new entrants tend to begin exporting through this channel. However, at the initial stage, the lack of marketing knowledge created a lot of uncertainties for firms. Even the foreign-owned firms among the early entrants, such as Golden Rose, had no any prior experience in the flower business and had to pass through a difficult learning curve. Foreign investors that were established players in the cut flower international market and which had broad connections, such as Sher-Holland, only came to Ethiopia later, after 2003. The auction market still remains an important entry point into the EU export market for the Ethiopian industry. About 62 per cent of firms started exporting through Dutch auction as their major marketing channel (70 per cent or more) and continue to export this way.

Flower export is highly time and process dependent. It requires improved infrastructure and logistical capabilities including air transport, post-harvest cold chain facilities, forwarding and handling services, packaging materials, information and communication technology (ICT) and quality control and certification services. Some of these capabilities are national or sectorial in nature and cannot be built or possessed by each firm or bought from the market and thus require coordination. Below we discuss how such capabilities were formed (both at the firm and sector level) or redirected (if it existed) to support the sector market formation process, focusing on air transport, cold chain management and handling and forwarding services.

Assembly (Cool chain management and handling/forwarding services)

A cool chain management plays important role for maintaining the quality of cut-flower exports, given their perishable nature. It consists of a farm level pack-house, cold truck and airport cold storage. All farms had to construct pack-houses within their premises and incurred substantial investment costs to do so. The packed flowers need to be transported through refrigerated trucks to the airport cold storage where they stay until re-loaded into the plane. However, there were no such service providers in the market until recently. As a result, about

three-quarters of the farms had to buy their own cold trucks to transport their produce to the airport, while the remainder of the farms rented them from other farms. The lack of refrigerated transport service providers raised the investment requirements of individual exporters. Initially there was no such service in the market. The first forwarding/handling company EthioHorti-Share Company was established in 2004 by the industry association to collectively arrange airfreight and handle administrative issues with the airlines. A second export facilitating company called Flower Port Cargo Plc was established in 2009 by Sher-Ethiopia and Trade Path International. The forwarding and handling business is, however, still underdeveloped.

Transportation (Air Freight Cargo Service)

The existing major cargo transport service provider for floricultural products is Ethiopian Airlines. Other airlines like Lufthansa operate in transporting cargo to European markets. Ethiopian is operating two direct flights a week to Amsterdam (The Netherlands) where significant proportion of flowers of UAAIE, HDE and Ethioflora are sold through auction. At present air freight charge of Ethiopian Airlines is determined annually through an agreement with Etfruit on behalf of producers in the presence of them and other concerned government institutions like EEPA (Ethiopian Export Promotion Agency). Companies like Golden Rose sign agreement by themselves taking into account the consensus reached at the national level.

Air transport

Given that cut-flowers must be exported by air, sufficient and guaranteed cargo space is critical. In the flower industry, the largest running cost component is airfreight charge. To accommodate the increasing flower export, Ethiopian Airlines leased cargo planes for exporting cut-flowers and relocated its cargo activities from Amsterdam to Liege (Belgium) in 2008. The majority (for example 87 per cent in 2007) of the flower farms use Ethiopian Airlines. Through time, the Ethiopian flower industry attracted more foreign carriers such as Emirates, KLM and Etihad. This is to transport the cut flowers from the grower's premises/farm to the airport. Specially designed refrigerated trucks are used for this purpose. Many farms have their own refrigerated trucks, but there also are many local transporters with over 84 trucks in very good condition available to provide transport services.

Storage

An important feature of the Ethiopian floriculture supply chain is that very little freight forwarding services or cold storage services at the airport are purchased by the rose growers. Export growers instead prepare their own documentation and load roses from their own cold trucks directly into palletized loads for air shipment. During the logistics the flowers remain property of the grower, who thus bears the risk in case the flowers loose quality or value as a result of delays or mistakes by any of the links in the logistical chain.

Packaging

Ethiopian export flowers are packed by locally manufactured corrugated cartons. The quality and strength of the cartons available in the local market have shown improvement in the recent time after the establishment of Burayu, oxford and other packing material factories. Ethio pulp and paper factor has been main supplier of cartons to the floriculture industry for a long time with a lot of complains from exporters on the strength of the material.

Marketing Agents/Actors

Marketing agents of floriculture marketing in Ethiopia includes producers, exporters and facilitative organizations such as transporters, EHDA, Ethiopian Customs Authority, insurers. At present, there are around seventy major rose farms that are producing and exporting roses to Europe and other markets. These rose farms are majorly located in Oromia National Regional state and few of them are also located in SNNP and Amara National Regional states and production is undertaken on commercial farms. The farms generally employ both permanent and temporary labor and operate year-round, with trained supervisors who are agricultural college graduates and at least one expatriate manager. In terms of production, the yield per square meter is roughly similar, ranging from 120 to 180 stems per square meter, which converts to roughly 1.5 million stems per year per hectare. In dollar terms, Ethiopia's roses obtain roughly $0.18 per stem at the European market on normal season and $0.8-1 during the time of holidays like Valentine day, Mother's day, and so on.

Market Structure-Conduct-Performance of Floriculture

Market structure

The structure of the market refers to characteristics of the organization of the markets that seem to exercise strategic influence on the nature of competition and pricing within the market (Pomeroy and Trinidad, 1995).

In food marketing, very large number of producers and consumers at each end of the marketing chain is suggestive of competitive conditions and therefore, the focus in analyzing market structure is on the numbers and sizes of enterprises within the system and the potential access of additional participants to it. A high number of buyers and sellers along the marketing chain, ease of entry into all functions and widely available market information, together carry a strong presumption of competitive conditions (Timmer et al., 1983). Estimating the numbers, size and spatial distributions of each category of intermediary provides an indication of both the local structure of the market and the range of alternatives faced by participants in the marketing chain in their buying, selling and hiring functions (Scarborough and Kydd, 1992). The market share of a country' export in the world trade depends on its export to the rest of the world.

The market share of Ethiopian cut flower export both at the world and African levels is increasing over time, especially since 2003/04. It is estimated that the share of Ethiopian cut flower has far improved from its 2001 level of 0.3 and 0.024 percent to 3.5 and 0.5 percent in 2005 in Africa and the World, respectively.

But very recent data shows as Ethiopian market share in the world cut flower has surpassed 1 percentage point. In addition to the domestic enabling environment for investors and favorable climate, the improvement in the Ethiopian share in the world cut flower is attributable to external factors including: the rising costs of labor in the EU leading to the decline in production of cut flowers in the EU, declining production area in the EU, decreasing number of growers and a shift away from cut flower to vegetables. In the Netherlands, for instance, the area under green house has decreased from 3757 hectares in 1998 to 34 27 in 2003 (CBI, 2005).

Competition

In terms of market competition, exporters indicated that there is limited competition at the moment due to supply constraints to meet demand of their buyers. On the other hand, however, Kenyans are their major competitors. Their competitiveness is through the availability of an organized and strong supply chain. Although Ethiopia has competitive advantages in terms of cheap labor (50% to 60% lower than Kenya), favorable weather condition and a saving of 30% freight cost, it will not beat its competitors like Kenya due to lack of a strong supply chain. Floriculture investors are increasingly behaving like global business players chasing comparative advantages in terms of incentives and costs for the developments of new projects. In recent years Ethiopia has demonstrated tremendous increases in investment (see chapter 2 above) and export production levels. The natural resources land, water, climatic conditions and the availability of cheap labor in combination with the investment climate have all contributed to this development.

Product Differentiation

Differentiation in the flower industry is mainly achieved through increasing or changing the flower varieties. The production of new varieties is highly knowledge intensive and as a result, monopolized by a few breeders in the developed world, mainly in the Netherlands. In order to meet the rapidly changing consumer demand, flower farms in developing countries need to have access to these new varieties. Product differentiation and productivity in the floriculture sector is determined to a large extent by the choice of variety.

Barriers to Entry

Transportation and promotion costs, the absence of a strong domestic market, a number of tariff and non-tariff barriers, the initial capital investments to start production (hardware, general infrastructure, planting material), lack of skills, professional education and experience in the export floriculture can be a negative factor and hamper the successful expansion and/or entry into the market and can be considered as a barrier. Investment levels in Ethiopia seem to indicate, however, that capital is not a major restricting factor.

Market Conduct

If horizontal relationships between similar marketing enterprises are the basis for examining the structure of the market, the nature of vertical relationships of exchange shades light on the conduct of market participants. Conduct refers to firm behavior like pricing and selling policies and tactics; overt and tacit inter-firm cooperation, or rivalry and research and development activities (Scarborough and Kydd, 1992). It is the pattern of behavior of enterprises in determining prices, sales promotion and coordination policies and the extent of predatory or exclusionary tactics directed against established rivals or potential entrants (Pomeroy and Trinidad, 1995).

There are no agreed up on procedures for analyzing the elements of market conduct. Rather, few points are considered to systematically detect indications of unfair price setting practices and conditions under which such practices are likely to prevail.

Market Performance

Market performance refers to the impact of structure and conduct on prices, costs and volume of output (Pomeroy

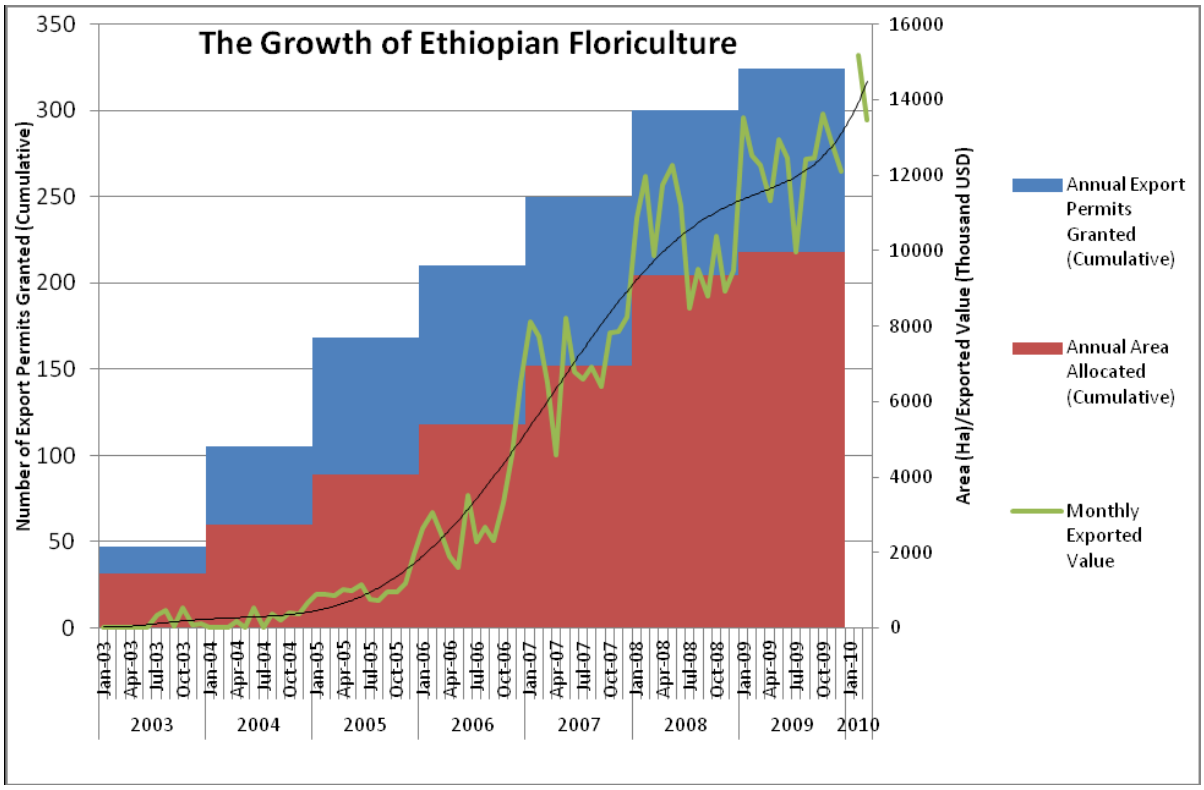


Figure 6. Performance of Ethiopian cut-flower by value from 2003 to 2010 .

and Trinidad, 1995). Investigations of market efficiency are one approach to evaluate the degree of market performance. Marketing efficiency has the following two major components: (i) effectiveness with which a marketing service would be performed and (ii) the effect on the costs and the method of performing the service on production and consumption. These are most important because the satisfaction of the consumer at the lowest possible cost must go hand in hand with maintenance of a high volume of farm output (Ramakumar, 2001).

Marketing Margin

In a commodity subsystem approach, the institutional analysis is based on the identification of the marketing channels. This approach includes the analysis of marketing costs and margins (Mendoza, 1995). A marketing margin can be defined as a difference between the price paid by consumers and that obtained by producers; or as the price of a collection of marketing services that is the outcome of the demand for and supply of such services (Tomek and Robinson, 1990). It measures the share of the final selling price that is captured by a particular agent in the marketing chain (Mendoza, 1995). It, in its simplest form, can be defined as the difference between prices paid for a commodity (for example bread) by consumers at a retail level and prices received by farmers when they sell their commodity (for example wheat) to assemblers or other first handlers. Measured in this form, the margins reflect the amount of services added to a commodity once it leaves the farm and sits on a shelf in a retail outlet in a form that is acceptable, useful and appealing to consumers (Goetz and Weber, 1986). Marketing margin is most commonly used to refer to the difference between producer and consumer prices of an equivalent quantity and quality of a commodity. However, it may also describe price differences between other points in the marketing chain, for example 29 between producer and wholesale, wholesale and retail, prices (Scarborough and kydd, 1992). The size of marketing margins is largely dependent upon a combination of; the quality and quantity of marketing services and the efficiency with which they are undertaken and priced. The quality and quantity of marketing services depends on supply and demand of marketing services and/or the degree of competition in the market place. The costs of service provision depend on both exogenous and endogenous factors and the efficiency is determined by the extent of competition between marketing enterprises at each stage.

According to Trotter (1992), the benchmarks to which results of marketing margin to be compared with are, the

assumption of the margin to be equivalent to transfer cost as well as the constancy of margin per unit of product. Large gross margins may not express high profit but rather; increased qualities and quantities of service; low labor, capital and management productivity. Conversely, small gross margins may co-exist with inefficient use of resource; poor coordination and consumer satisfaction; and disproportionate profit elements. Thus, higher marketing margins resulting from increased services, including better coordination, may leave producers and consumers better off and low margins may be due to low productivity. Therefore, in using market margin analyses to assess the economic performance of markets, it is always preferable to deconstruct them in to their cost and return elements (Scarborough and Kydd, 1992). However, the challenges of data availability on costs make impossible the deconstruction though marketing margins are still good indicators of market performance. Notwithstanding the considerable variation between markets, if a high proportion of sale price is attributed to purchase cost, it indicates that traders add relatively little value, in terms of transport, storage, or transportation of a commodity in question. Traders undertake only spatial arbitrage and not temporal or form arbitrage (Eleni, 2001). So the computation and use of margins need critical attention. The scope for government interventions in markets is determined by the efficiency and costs of performing the basic marketing functions. In addition to a concern for lowering the real costs of marketing, governments need to focus on the efficiency with which marketing services are provided. If high costs exist, government investments can lower them. In market economies, inefficiency means excess profits and excess profits mean monopolistic intermediaries or collusion in price formation. If serious inefficiency exists, therefore, government policies might improve competitiveness or provide direct competitive standards (Timmer et al., 1983).

Figure 6 displays the growth of the Ethiopian flower industry according to a number of different metrics. The exported value shows the rapid growth of the industry since 2005, the seasonal fluctuations in sales and the reduction in the growth rate during the Global Financial Crisis.

This gives African producers an advantage for the varieties they are able to produce as the climate is relatively stable. Conversely, supply of flowers grown in cooler climates may have to be sourced from different hemispheres at different times during the year provided the demand exists (Ben Taylor, 2011).

CONCLUSION

As is the case in many developing countries, the major export items of Ethiopia are dominated by few agricultural products that earn very small amounts in the international market. Moreover, most of the exports are destined to only few countries. This fact calls for export diversification in an effort to increase the kinds of export items and searching new markets for both the existing and new items. Ethiopia has been operating in the floriculture industry for over 20 years. To this effect, so as to promote economic growth through diversifying agricultural production and broaden foreign exchange earnings, the government of Ethiopia, which now pursues a market-led economic policy, needs to place proper emphasis on the potential of the floriculture industry. An Ethiopian cut-flower exporter goes through a lengthy customs and bank clearing procedures discussed in the previous chapters. Given the perishable nature of the cut-flowers, these bureaucratic customs and bank formalities are hindering the quality and competitiveness of Ethiopian cut-flowers in the international market.

The floriculture value chain in Ethiopia is process intensive in both the pre-and post-harvest phases, including strict requirements on chemical application and timing, temperature and humidity control, irrigation, cooling temperature and length, packing materials and quality differentiation and sorting. It is interesting to note that what clearly differentiates this sector from the traditional agriculture model is that, not only is production year-round and highly industrialized, but also the post-harvest processing is tightly coordinated with a three-day period from harvest to arrival in destination market abroad. Given the highly capital intensive nature of production and processing, rose farming is not a smallholder activity. It is also important to note the extremely tightly controlled time dimension of the logistics process, given the product attributes desired and the fragility and perishability of the roses. The export volume and value of cut-flowers accounts for a small proportion of the total exports of Ethiopia. In recent years the sector is showing improvements in terms of the quality and quantity of exports to the international market. Nevertheless, the technical, institutional and marketing constraints discussed in the previous chapter and the fluctuations in the prices of international cut-flower market have been and still are restricting the sector from generating adequate foreign exchange earnings that the country could have realized.

Failure to get new market, lack of identifying customer wants and needs, lack of good communication with customer, poor product timing, lack of knowledge about different market channels, poor pricing and free entry of new competitors are marketing related factors of floriculture investment failure in Ethiopia.

Disaster, climatic change, land fertility, joint ventures relationship, lack of quality packing industries, lack of sufficient cargo freight, high transportation cost, lack of efficient credit facilities and banking system, infrastructure related causes are some of barriers for new firms in floriculture investment in Ethiopia.

In order to meet the rapidly changing consumer demand,

flower farms in developing countries need to have access to new varieties.

REFERENCES

Belwal R, Chala M (2008): Catalysts and barriers to cut flower export: A case study of Ethiopian floriculture industry. Int. J. Emerging Markets. 3 (2): 216-235.

Ben Tylor (2011). Ethiopia's growth set to bloom? A global production networks analysis of an experiment in economic liberalization Centre for the promotion of exports from developing countries, CBI, (2007) CBI market survey: the cut flower and foliage market in the EU. Online http://www.ibce.org.bo/Documentos/market_flower.pdf

Channel Choice' (2011). In: 99th EAAE Seminar "Trust and Risks in Business networks", Bonn, Germany. [online] (Accessed 20 March 2011). Available from: http://ageconsearch.umn.edu/bitstream/7759/1/sp06wi01.pdf

Elenei Z Gebre-Medhin (2001). Market institutions, transaction costs and social capital in the Ethiopian grain market. Research Report No 124. Int. Food Policy Res. Institute. USA. p.93.

Ethiopian Horticulture Producers and Exporters Association, EHPEA (2007). Code of Practice for Sustainable Flower Production" Version 2.0 Issue Date March 2011.

Frank B, Cruz E (2001). Flower for Justice, Implementing the International Code of Conduct, Friedrch Ebert Stiftung. p.72.

Gebre Sorsa (2011). Underlying Causes of Business Failure of Floriculture Investment in Ethiopia. A Research thesis for Partial Fulfillment Requirement of Masters of Business Administration in Finance, Addis Ababa).

Getu M (2009). Mizan Law Rev: Ethiopian Floriculture and its Impact on the Environment, 3 (2). [Online] Available: http://www.ajol.info/index.php/mlr/article/viewFile/54011/42554 [2011-04-28] 53

Goetz S, Weber MT (1986). Fundamentals of price analysis in developing countries' food Systems: a training manual to accompany the microcomputer software program "MSTAT". Working Paper No 29. MSU international Development Papers. Michigan State University. East Lansing, Michigan, USA. p. 148.

Gudeta, Degytnu Tilahun (2012). Socio-economic and Environmental Impact of Floriculture Industry in Ethiopia. Wageningen University (The Netherlands).

Habte S (2001). "Ethiopian cut-flower export industry and international market", Ethiopian Export Promotion Agency: Product Development and Market Research Directorate.

Jarvis WR (1992). Managing diseases in green house crops. American Phytopathological Society press, St Paul, Minn.

Kishin I (2001). Effects of temperature on leaf area and flower size in rose. Kool MTN (1996). System development of glasshouse roses. A PhD Thesis, Landbouw University, Wageningen. The Netherlands.

Laws N (2006). "Ethiopia: the next production hot spot-floraculture", FloraCulture International, available at: www.floracultureintl.com/archive/articles/1858.asp. 54

Mendoza G (1995). A primer on marketing channels and margins. pp. 257-275. In G. J. Scott (eds.). Prices, Products, and People: Analyzing Agricultural Markets in Developing Countries. Lynne Reinner Publishers, Boulder, London.

Pomeroy RS, Trinidad AC (1995). Industrial organization and market analysis: pp. 217-238. In: G. J. Scott (eds.). Prices, Products and People: Analyzing Agricultural Markets in Developing Countries. Lynne Reinner Publishers, Boulder, London.

Ramakumar R (2001). Costs and margins in coconut marketing: some evidence from Kerala. Indian J. Agric. Econ. 56 (4): 668-680

Riisgaard L (2009). Global value chains, labor organization and private social standards: lessons from East African cut-flower industries. World Development, 37 (2): 326-40.

Saccomandi V (1998). Agricultural Market Economics: A Neo-Institutional Analysis of the Exchange, Circulation and Distribution of Agricultural Products. p. 231.

Scarborough V, Kydd J (1992). Economic analysis of agricultural markets: A manual. Marketing Series No 5. Natural Resources Institute. University of Greenwich, Chatham, U.K. p. 166.

Tewodros Worku Nigatu (2010). Promoting Workers' Right in the African Horticulture: Labor Condition in The Ethiopian Horticulture Industry.

Tomek WG, Robinson KL (1990). Agricultural Products Prices. Third Edition. Cornel University Press. Ithaca and London. p. 360.

Trotter BW (1992). Applying price analysis to marketing systems: methods and examples from the Indonesian rice market. Marketing Series 3.Natural Resource Institute. Chatham. United kingdom.

Wijnands J (2006). 'International Flower Networks: Transparency and Risks in Marketing. Wolday Amha (1994). Food grain marketing development in Ethiopia after the market reform 1990: a case study of Alaba Sirarao district. PhD Dissertation. 1-Aufl-Berlin: Koster. Germany. p