

# **EFFECT OF MARKET INFORMATION ON THE PERFORMANCE OF FLOWER SECTOR OF ETHIOPIA**

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**A Research Project Submitted to Van Hall Larenstein University of Applied Science in  
Partial Fulfillment of the Requirements for the Degree of Masters in Agricultural  
Production Chain Management, specialization Horticulture Chain**

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## ABBREVIATIONS

|            |   |
|------------|---|
| APCM       | Agricultural Production Chain Management                  |
| CBI        | Center for Promotion of Imports from developing countries |
| DBE        | Development Bank of Ethiopia                              |
| EHDA       | Ethiopian Horticulture Development Agency                 |
| EHPEA      | Ethiopian Horticulture Producers Exporters Association    |
| EHSC       | Ethio-Horti-Share Company                                 |
| EIA        | Ethiopian Investment Agency                               |
| ENHP       | Ethiopia-Netherlands Horticulture Partnership             |
| EU         | European Union  |
| FFP        | Fair Flowers Fair Plants                                  |
| GDP        | Gross Domestic Product                                    |
| GLOBAL GAP | GLOBAL Good Agricultural Practices                        |
| HT         | Hybrid Tea  |
| IIRR       | International Institute of Rural Re-construction          |
| ISO        | International Organization for Standardization            |
| KITT       | Royal Tropical Institute                                  |
| LNV        | Dutch Ministry of Agriculture, Nature and Food Security   |
| MPS        | Milieu Programma Sierteelt                                |
| UK         | United Kingdom  |
| WUR        | Wageningen University and Research Center                 |

## ABSTRACT

Two decades have elapsed since cut flower began to be produced in Ethiopia for commercial purposes. The report of some studies shows that Ethiopian flower growers are in a shortage of market information due to low access to external market information. Considering this EHPEA has been supporting the sector with providing market information, promoting the sector in the market and linking the flower growers with international buyers. However, since recently sector study reports showed that Ethiopian flower growers are in a disadvantage considering market information. Furthermore, other studies showed that market information promotes firm performance. Therefore, the objective of this study is to evaluate the effect of market information on flower farms' performance particularly cut rose producers by assessing level of market information acquisition and utilization of the flower farms and the contribution of EHPEA market information on the flower farms' performance to recommend on the improvement of market information utilization of the farms while they develop marketing strategy.

In order to achieve this quantitative and qualitative data was collected, in which 33 managers or marketing officers from flower farms answered the questions on the questionnaire as well as key informants from EHPEA were interviewed as per the questions on the semi-structured questionnaire. Moreover, flower farms performance was collected from the secondary data.

Questionnaires were prepared for flower farms to collect quantitative data for questions that focused on: level of flower farms market information acquisition and utilization on marketing mix decision (price, product, promotion and place) as well as EHPEA market information and promotion service for the flower farms. Moreover, semi-structured questionnaire were prepared with questions related to the activities that have been carried out by EHPEA and the challenges faced during market information service delivery. The results were analyzed using SPSS tools of Correlation, Legacy dialogs and 123 frequencies.

The result of the research showed that the higher the price information (such as: wholesalers and retailers price for different market channels) provided to the farms, the higher is their performance.

Similarly, the higher the product information (specific variety, quality and quantity required by different market segment) is provided to the farms, the higher is their performance.

The result also indicated that the higher promotion is done for the sector in international market, the higher is the flower farms performance as well as the higher the information regarding place (distribution) is provided to the flower farms, the higher is the their performance.

Moreover, it is also indicated that the higher market information is utilized by the farms to develop their market strategy, the higher is their performance.

On the other hand the result showed that the relationship between EHPEA market information service and flower farms performance was not significant. The relationship between EHPEA promotion and flower farms performance was not significant as well.

This implies that EHPEA market information and promotion is not significant for flower farms performance, which is against the mission of EHPEA (that is promoting and safeguard the sustainable competitive position of floriculture sector within the global market) to be achieved through one of the activities that is market information service.

The research finding is used to make recommendation for EHPEA on to improve its flower farms' market information utilization to develop their market strategy. Such as: establishing marketing department, capacity building to the farms and building relationship with flower farms and buyers.

**Key words:** Market information, Flower farms, Information utilization and farm performance

# CHAPTER 1: INTRODUCTION

## 1.1 Background

Ethiopia is located in east Africa. It is a federal republic of 9 states with capital city Addis Ababa. It is a landlocked country of more than 1,125,000 square kilometers with an estimated 77 million inhabitants. The Ethiopian economy depends to a large extent on the agricultural sector with accounts for some 50% to the Gross Domestic Product (Ton et al., 2009).

Floriculture is a relatively new sub-sector to Ethiopia as for long the production of flowers had been limited to few varieties of field flowers (like Allium). However, this situation has changed rapidly over the past years. The majority of flower growers with an estimated 80% of the production area cultivate cut roses. The first rose producer started around 1997, a second in 1999. From 2001 onwards, other growers started coming in. 20% of the production area is under cultivation of cuttings and bouquet fillers, primarily Hypericum, Carnation, Gypsophila and Allium (Joosten, 2007).

Ethiopia has earned USD 186 million from horticulture exports out of which 80% was generated by flower exports in 2008. In 2008, there were 81 flower farms employing around 50,000 workers and over 70% are women (Gebreyesus and Lizuka, 2010).

Diversifying export is one of the strategies taken by Ethiopia to eradicate poverty. One of which is diversifying the horticultural exports. However, the sector needs continued support to meet the high expectations with respect to its potential to provide a substantial increase in employment opportunities, foreign exchange earnings and positive impact on related agricultural sector and service providers (EHPEA, 2010).

Considering this the sector was supported by different governmental and non-governmental organizations. One of which is Ethiopian Horticulture Producers Exporters Association (EHPEA), it is a member based non-governmental organization. Out of 85 members 55 of them are cut rose producers. It was established in 2003 with a mission of promoting and safeguards the sustainable competitive position of the horticulture sector within the global market. Since its establishment it has been carried a lot of activities to achieve its mission such as: representing the sector in national and international affairs, facilitating market access and linkage, supporting the implementation of the responsible production practices that protect employees and the environment, organizing and delivering of capacity building activities for the sector as well as formulation of partnerships with stakeholders (EHPEA, 2010).

Regarding marketing EHPEA was providing market information for producers as well as product information for buyers. Furthermore, facilitating linkage between producers and buyers was also another activity.

However, Ethiopian flower growers are in a shortage of market information due to low access to external market information (Zewdie, 2007).

Therefore this research will focus on the effect of market information on the performance of flower producers particularly on Rose producers in Ethiopia.

## **1.2 Problem statement**

Market information utilization should lead to the greater performance because they assist in identification of market opportunities and threats that may facilitate effective market strategy development (Moorman, 1995). Raju and Roy (2000) also reported that more precise market information has a greater impact on firm profit. However, considering market information the Ethiopian flower growers are at a disadvantage (Chala et al., 2010). So that this research will find out the effect of market information on the performance of Ethiopian flower farms and also evaluate the impact of market information service by EHPEA on flower farms' performance to give recommendation for the improved market information acquisition and utilization that may be applied while flower farms' develop market strategy.

## **1.3 Objective**

To evaluate the effect of market information on the performance of Ethiopian flower farms by assessing the level of market information acquisition and utilization by the farms for their marketing decision-making based on marketing mix as well as assessing the effect of EHPEA market information service on farms' performance to contribute on the improved market information utilization by the flower farms while they develop market strategy.

## **1.4 Research questions**

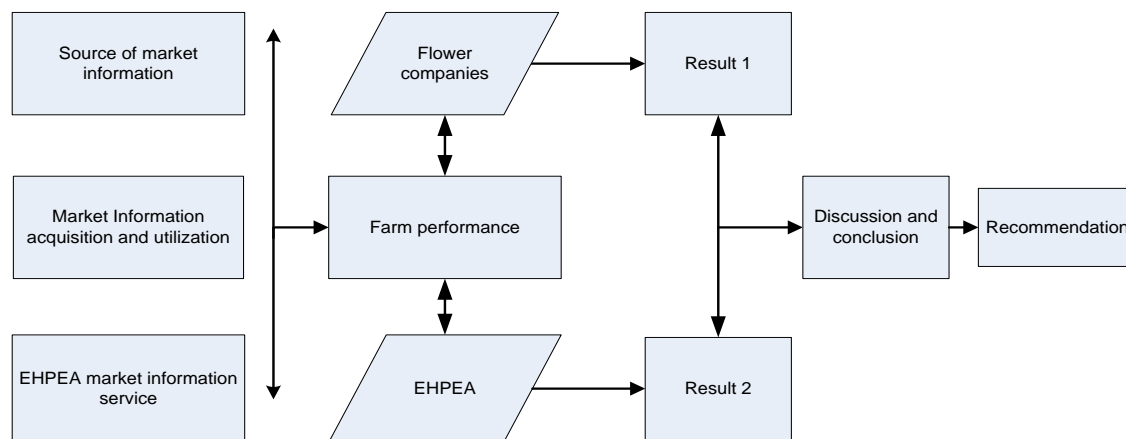
1. How does market information acquisition and utilization affect flower farms' performance?
  - a) What is the source of market information to the farms?
  - b) In what way flower farms utilize market information for making marketing decision based on marketing mix?
2. What is impact of EHPEA market information on flower farms' performance?
  - a) What is the contribution of EHPEA regarding market information to flower farms?
  - b) What activities have been carried out?
  - c) What challenges have been faced by EHPEA while delivering the market information?

## 1.5 Research framework

The research was conducted by reviewing relevant literatures and interviewing 33 respondents from flower farms. Farms performance which is the revenue from past 2-5 years (from 2006-2010) was collected from the secondary data. Besides, two key informants from EHPEA were interviewed.

The assessment criteria were developed by studying theories of effective market information acquisition and utilization by the firms to develop their market strategies as a result their performance will be enhanced. As it is indicated on figure 1 flower farms market information acquisition and utilization to develop their market strategy was assessed to see the effect on their performance. Moreover, effect of market information service by EHPEA on flower sector performance was evaluated. Not only effective use of market information on decision making but also source of market information considered as relevant.

Figure 1: Research framework



## 1.6 Concept definition

**Market information:** is as data concerned with a firm's current and potential external stakeholders (Moorman, 1995).

**Product information:** refers to the related information about a tangible product and intangible service that a firm acquires (Keh et al., 2006).

**Price information:** refers to the information related to price of a product in a particular market segment (Keh et al., 2006).

**Promotion:** refers to the activities done by the firms to promote their products or services in different markets (Keh et al., 2006).

**Place (Distribution) information:** refers to the information that a firm acquires related to different market segment about a particular product (Keh et al., 2006).

**Information acquisition:** refers to the collection of primary or secondary information from organizational stakeholders. This might occur through formal market research survey, customer satisfaction studies, through informal collection of information from sales people who interact with customers, or from competitors (Moorman, 1995).

**Information utilization:** is the extent to which an organization directly applies market information to influence marketing strategy-related actions (Moorman, 1995).

**Firm performance:** can be described either with return on investment, return on asset, and return on sales or overall profitability (Zhao et al., 2001).

**Market information service:** is a service which involves the collection on a regular basis of information on prices, quantities of widely traded agricultural products from wholesale and retail markets, as appropriate and dissemination of this information on a timely and regular basis through various media to farmers, government officials and policy makers (Shepherd, 1997).

**Marketing Mix strategies:** are vital to create and deliver value based on the needs and behavior of the targeted segments (Wood, 2003).

**Effectiveness:** is making the right decisions on how to use resources in order to get the best result from the task (Rollinson, 2005).

**Market information system:** is a set of procedures and practices employed in gathering, analyzing, and assessing information about a firm's market environment comprised of competitors, customers, suppliers, distribution intermediaries, and sales personnel (Shepherd, 1997).

**Auction clock:** when flowers are sold through the flower auctions by being displayed on the auction clock (CBI, 2009).

**Auction direct:** when flowers are sold through the auction to the flower buyers but without being displayed on the clock (CBI, 2009).

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Ethiopian Flower Sector

The attractiveness of Ethiopia for floriculture derived from several factors mainly cheap and readily available labor and favorable investment climate such as five years tax holiday, custom duty exemptions, loss carry forward and remittance of funds and accessing land on a leasehold basis as well as providing soft loans to the sector up to 70% of the total investment and pledging no other collateral than the project itself (Melese and Helmsing, 2010). The floriculture sector of Ethiopia can be divided into three groups: roses under greenhouse, cuttings under greenhouse and summer flowers. In 2006, 2031 hectares of land was assigned to investors for floriculture development, of which 801.6 hectares is covered by flower production. About 80% of the total production area is covered by roses, which are cultivated mostly on soil and in some cases on hydroponics (Joosten, 2007). Flower farms in Ethiopia are located in between 1500-2,600m above sea level. However, due to altitude and soil types, about 60% of flower farms are mainly concentrated at highlands ranging from 2000 meters till 2,600 m (see Appendix 2). Some of the towns are Holleta, Ziway, Sebeta, DebreZeit, Koka and Addisalem. These regions are located within a radius of 200km or a maximum of 4 hours from Addis Ababa where international airport is located (Ton et al., 2009). By now there are 90 farms operating in Ethiopia, out of this 73 of them are producing roses (see Appendix 2). Both export volume and earnings showed more than fivefold growth (see Table 1) and this made flower the six largest export commodity of the country after coffee, oilseeds, chat, leather and live animals (Melese and Helmsing, 2010). Even though, the sub-sector of Ethiopia is showing dramatic growth and still has potential to grow more, its contribution to the national economy is only 0.12% of the GDP (Chala et al., 2010).

Table 1: Ethiopian cut flower export volume and earnings (in millions for export and earnings)

| Year   | Number of farms (growers) | Cultivated area (ha) | Number of exported stems | Export value (USD) |
|--------|---------------------------|----------------------|--------------------------|--------------------|
| 2001/2 |                           |                      |                          | 0.395              |
| 2002/3 |                           |                      | 16                       | 2.9                |
| 2003/4 |                           |                      | 32                       | 5.5                |
| 2004/5 | 30                        | 150                  | 83                       | 12.7               |
| 2005/6 | 69                        | 345                  | 186                      | 22.9               |
| 2006/7 | 70                        | 801.6                | 478                      | 63.6               |

Source: Melese and Helmsing, 2010

The recent economic and trade liberalizations have attracted more foreign and domestic investors into this industry as a result the flower export has shown dramatic growth in volume and value since 2000 and Ethiopian flowers are mainly exported to European market. The value which is below half a million USD before 1992 has grown up to 13 million USD in 2005 and 23 million USD in 2006. However, Ethiopian export share from the 2006 world market was less than 0.25% which is insignificant (Chala et al., 2010).

For Ethiopia the major flower export destination is the EU. Cut flowers are sold via the markets (mainly Dutch auctions) and/or directly to supermarkets and other retailers. Farms as a new entrant, they begin by using Dutch auction channel but later they diversified in terms of market channels and destinations. However, the EU is still the major destination accounting for 94% of total export with the Netherlands (88%) (Gebreyesus and Lizuka, 2010).



Joosten (2007) also reported that to reduce the risk of substitution it is of paramount importance that whether the produce is sold through the auctions or under contract that a consistent supply of high quality flowers at similar price is assured.

CBI (2009) reported that working with the agents who links flower farms with direct buyers has a challenge of no price setting transparency and no objective for quality control.

CBI (2009) also reported that selling flowers through the auction has an advantage of neutral and transparent price setting and guarantee of payment. However, it is a disadvantage also to send through auction clock due to volatility of prices and high overall auction costs.

The information from the Dutch auctions is public; even non-members can obtain price and quantity information. The auction prices are often used as a benchmark for the international price information (Joosten, 2007). Furthermore, Ethiopian flower growers often do not get information about the sales from the wholesalers to retailers this place them at a disadvantage when planning production and sales.

In addition to access to general market information on price trends and market studies, establishing and maintaining direct contacts with the main buyers on the European markets is of crucial importance (Zewdie, 2007).

## **2.2 Value Chain of Ethiopian Flowers**

**Value chain:** refers to the entire system of production, processing, and marketing of a particular product, from inception to the finished product; and consists of a series of actors, linked together by flows of products, finance, information and services (KIT and IIRR, 2010).

### **2.2.1 Chain Actors**

These are individuals or organizations that produce the product, or buy and sell it hence they usually own the product at some stage in the chain (KIT and IIRR, 2010). According to floriculture chain (see Figure 2) the actors are described in detail below:

**Input suppliers and plant breeders:** those are enterprises with different nationalities local and foreign supplying different inputs to the flower industry such as, fertilizer, chemical, greenhouses, irrigation installation, corrugated box, new varieties and consultants (Embassy of Japan, 2008).

**Flower producers and exporters:** as it is indicated on the above there are 73 rose producers scattered in different locations. Most farmers grow their roses inside the plastic green houses on the soil, but few rose growers use hydroponics as growing medium. Out of four types of cut roses which are described in the sub-section 2.3, three of them are grown in most of the farms such as Sweetheart, Intermediate and Hybrid Tea (Zewdie, 2007). Pre-harvest and postharvest activities are carried out in the farm such as: planting, harvesting, sorting, packing of the flowers as well as transporting the flowers to the airport is done by the growers.

**Wholesalers:** are the one who purchase large amounts of flowers and break this bulk into smaller amounts. These small amounts are then sold to their clients (other wholesalers and retailers) (CBI, 2009).

**Retailers:** are florists, supermarkets and street market. They buy flowers from wholesalers and/or flower growers (CBI, 2009).

**Consumers:** are final users of the flowers.

### 2.2.2 Chain Supporters

These are individuals or institutions involved and surrounding the chain actors and responsible for the providing financial such as loans, pre-financing, factoring and leasing arrangements among others, and non-financial services such as inputs, farm labor, transport, grading, processing, storage, packaging, advertising, research, training, advice, and organization among others (KIT and IIRR, 2010). Chain supporters of the sector are described below:

**Flower auctions:** are wholesale markets created by the growers to market their products. There are about 10 flower auctions in Europe. The most relevant ones with respect to flowers from developing countries are the FloraHolland in The Netherlands, and the Landgard auction in Germany (CBI, 2009). The auction conduct large amount of transactions very quickly and efficiently with the clock system and display information on the type of flower, the producing company, its origin and its quality standard. This auction has been the main market destination for Ethiopian roses where growers have their own representatives in to facilitate marketing. Around 67% of Ethiopian flowers are sold through the Dutch auction (Melese and Helmsing, 2010). Flowers arrive within three days at the selling agent and its main activities are to unpack and refresh the flowers, make them more presentable for the market, better sleeving and display them in the auction.

**Ethiopian Horticulture Producers Exporters Association (EHPEA):** it is one of the supporters of the sector. It was established in 2003 to represent the interests of its members and promote the expansion of the emerging horticulture export sector in Ethiopia. It is a non-profit making and non-governmental organization whose members are all registered business engaged in the production of floriculture, vegetable and fruit for export market. Currently it has 85 members out of which 55 are cut rose producers. Since it is established, it has been giving different services for the sector to promote and safeguard the sustainable competitive position of the Ethiopian horticulture sector within the global market such as: facilitating market access and linkage, supporting the implementation of responsible production practice, organizing as well as delivering of capacity building activities (EHPEA, 2010).

**Development Bank of Ethiopia (DBE):** is a government bank that provides soft loans to the sector. The bank extends credits up to 70% of the total investment, pledging no other collateral than the project itself. According to DBE data they had approved loans to the value of 623 million birr, or 56% of registered capital. Of these loans more than 77% had already been disbursed in 2007 (Melese and Helmsing, 2010).

**Ethio-Horti-Share Company (EHSC):** it was established by a small group of both domestic and foreign producers, as a profit making company to provide services for all interested producers, and undertake activities related to cargo transport and the import of inputs. Through the EHSC, growers jointly import fertilizers in bulk. In addition it has developed a mutually beneficial partnership with Ethiopian Airlines through which growers jointly rent cargo planes. EHSC receives the grower's production and export plans in advance to plan and rent cargo space. During the low season for Ethiopian flowers, the company sells excess cargo capacity to other interested parties, especially vegetable exporters, thereby reducing transport costs for its flower growers. Thanks to the same partnership Ethiopian Airlines has secured a major share of the flower transport market (EHSC, 2009).

**Dutch Ministry of Agriculture, Nature and Food Security (LNV):** opened an office at the Netherlands embassy, and assigned an agriculture counselor to promote bi-lateral relations with special focus on the floriculture sector. In the same year, the Ethiopia–Netherlands Horticulture Partnership (ENHP) was signed to promote the development of the sector and to enhance an enabling environment through public private partnership. The ENHP incorporates the following (Helder and Jager, 2006): capacity building program for the floriculture sector, creation of a code of practice for the sector, capacity building of a Phytosanitary Unit, provision of market and sector information services, action plan for Integrated Pest Management, decision support system for selecting new production areas, study tours to different countries (Ethiopian delegations to Zambia, Kenya and The Netherlands), and investment guidance manual for floriculture (Helder & Jager, 2006).

**Ethiopian Horticulture Development Agency (EHDA):** is a governmental organization that gives support to the flower companies such as market information by doing market research and inviting guests with experience of market places, promotion mainly through sending sample flowers to different market in different countries, and technical assistance through hiring consultants (Zewdie, 2007).

### 2.2.3 Chain Influencers

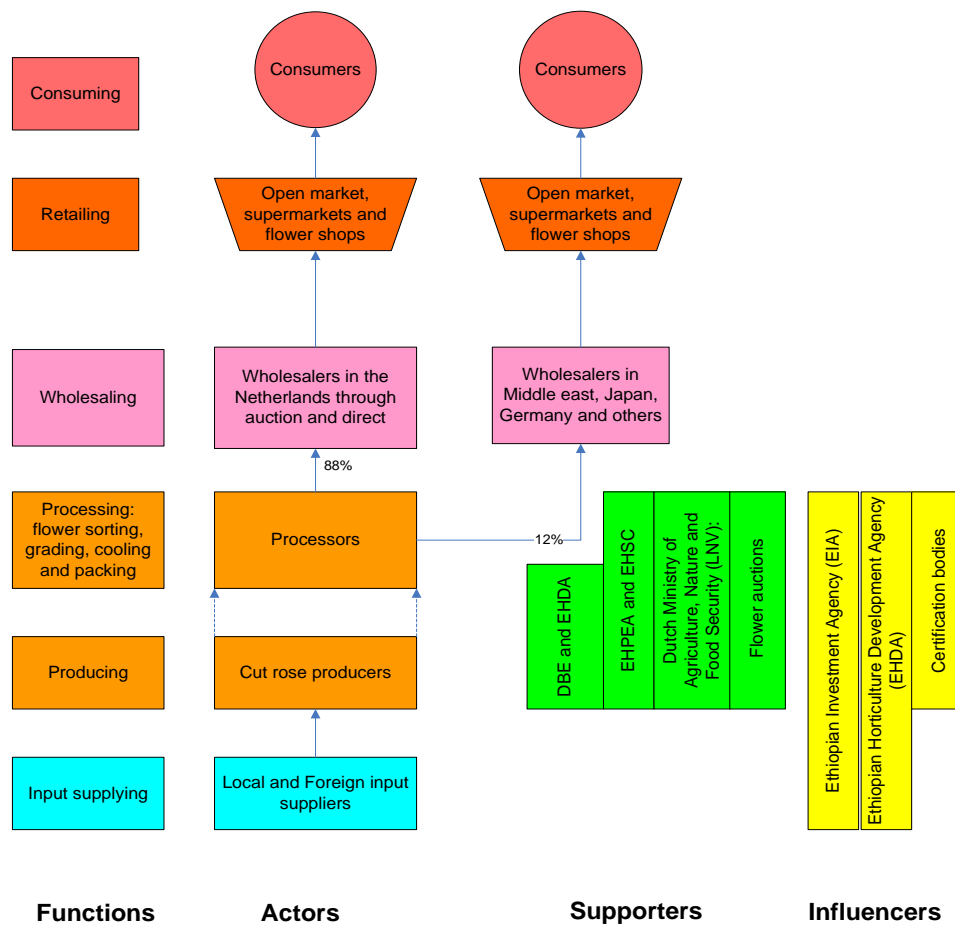
Chain influencers are also regarded as chain context because chain actors and supporters operate within a context that includes the larger economy, currency exchange rates, government economy policy, and governance tax, regulatory and legal framework. The influencers may enable the chain to perform by promoting transparency and stable macroeconomic policy or hinder the chain from performing by imposing restriction and allowing corruption to flourish (KIT and IIRR, 2010). Chain influences of the sector (see Figure 2) are described below:

**Ethiopian Horticulture Development Agency (EHDA):** it is a governmental organization with the mandate of regulating and monitoring the whole activities going on the horticulture sector. Some of the activities are regulating the number of exported cut flower stems; follow up of supporting activities given by other organization, reporting sector activities and achievement to the ministry office (Gebreeyesus and Lizuka, 2010).

**Ethiopian Investment Agency (EIA):** is governmental organization with the mandate of promoting investment opportunities to foreign and domestic investors, issuing investment permits, trade registration and business licenses. Moreover advertising the government policy measures needed to create attractive investment climate for investors as well as assisting investors on processing of land acquisition (Joosten, 2007).

**Certification bodies:** because the number of consumers in EU market demanding for environmentally and socially sound produced flowers is increasing, some labels are used to prove the certification of environmentally and socially sound production, such as business-to-business label that is increasingly being used as supplier requirement, additionally there is a MPS-GAP scheme that is benchmarked with the GLOBAL GAP flowers and plants scheme for environment moreover MPS registration is being encouraged by the Dutch Flower Auctions Associations. Another label is the consumer label Fair Flowers Fair Plants (FFP) for environment and socially sound produced flowers (CBI, 2009).

Figure 2: Value chain map of Ethiopian flowers



### 2.3 Types of cut roses

There are many types of roses grown commercially but for convenience the fresh cut roses are classified into four such as Large or Hybrid Tea, Medium or Intermediate, Small or Sweetheart and Spray or Cluster. According to (CBI, 2009), type of roses which is produced and exported from different countries may vary considerably; Uganda, Zambia and Zimbabwe are specialized in small-budded varieties (Sweethearts and smaller Intermediates). Kenya grows a mix of small and medium-sized varieties. Ecuador on the other hand specialized in big-budded varieties that are Hybrid Tea. Types of roses are described below:

**Large or HT (Hybrid Tea) roses:** those roses are generally grown to between 50 and 90cm in length and yield 90-140 stems per year per square meter. HT roses become ready for harvesting in pronounced flushes, approximately 60-80 days under greenhouse year round in Africa and under glass in the northern areas between April and September. During the winter in Europe they virtually come to a stop because of lack of light (Pertwee, 2003).

In Colombia and Ecuador where altitude is 2,400-3,000 meters the light is strong but the temperature is much cooler than Africa and other high tropical regions. The HTs grow strongly all year round but more slowly, taking between 85-100 days between flushes. The flowers therefore bigger, the stem stronger but numbers per square meter are down (Pertwee, 2003).

HT or large roses are normally sold through the gift market. At peak times, such as Valentine's Day, they can get an exceptional premium on their price per stem, but through most of the rest of the year they fetch on average around 50% more than for the smaller roses (Pertwee, 2003).

For growers in European countries where the labor costs are high and transport costs are low (as they are close to the market place), large flowered roses are the most profitable type to grow: they fetch a higher price per stem and cost less per hectare in harvesting, packaging, transporting and selling costs. More importantly they are the rose that most consumers want to purchase to give or send as gifts, where price is not so important. However yields, in number of stems per square meter, of large flowered roses can be disappointing, the older varieties still have the reputation of being difficult to handle, and have a shorter vase life (Pertwee, 2003).

**Intermediates or medium flowered roses:** Those types of flowers grow to 50-70 cm and they have most of the good qualities in terms of high yields, durability in transport, and super long vase life. They are particularly popular with the supermarket buyers and their consumers who are buying on impulse for home. These kinds of roses are wanted by mass-market buyers. They are also becoming increasingly popular with consumers in the Netherlands, Germany, Italy, Israel and Japan (Pertwee, 2003).

**Sweetheart or small flowered roses:** this type of flowers produce large numbers of stems between 200-300 stems per square meter per year with the stem length of 30-45 cm which is a disadvantage as very few buyers are interested in large quantities of blooms with stems of below 50 cm when there are plenty of medium sizes are around. They are easy to handle and have a good vase life. But since harvesting is 80% of the labor costs in growing roses, in countries where labor costs are high, production of short stem varieties is not always profitable. Major areas where they are planted are in Uganda, Kenya, Zambia and Zimbabwe. They were the most popular type in Holland and Germany, where they are sold relatively cheaply but in large quantities (Pertwee, 2003).

**Spray roses:** The influence of the supermarkets and their fast increasing bouquet trade has opened up all sorts of possibilities for spray roses, which the flowers in the spray all open at the same time and rate the same length so that they all show in the top of a bouquet (Pertwee, 2003).

## 2.4 Climate factors

Climate is one of the factors to be considered to determine what type of variety to grow. Moreover it affects the speed of flowers to grow (Pertwee, 2003). Countries like Ecuador where most of flower growers are located in high altitude (that is 2800-3200m above sea level) produce long stemmed large flowered HT varieties. Because of the altitude, temperature is cooler at 10 -15<sup>0</sup>c by day and places is subjected to occasional night frosts as a result the flowers grow slowly, the yields per hectare are down but the strength of the stem and the flower buds are big and get more money in the market.

In the Netherlands the altitude of main growing areas is at sea level or below. The climate is extremely difficult and has to be completely controlled so that sophisticated glasshouses are needed. Because it is labor intensive to harvest Sweetheart type of roses as well as cheaper than Hybrid Tea, Dutch growers shifted to higher priced, larger flowers that are Hybrid Tea roses (Pertwee, 2003).

On the other hand African countries like Kenya, Uganda, Tanzania, Zambia and Zimbabwe flower farms are located in the altitude between 1500m-2000m. However, in Kenya the altitude reaches up to 3000 in some areas. Flower produced in Uganda and Zambia is short stem roses. In contrast Tanzania and Zimbabwe flower growers produce Intermediate and some Hybrid Tea type of roses with stem length of 50-60 cm. Moreover Kenya flower producers produce Sweet heart and Intermediate and some Hybrid Tea with flower length of 50-60 cm type of roses (Pertwee, 2003). As it is described on the above Ethiopian flower companies are located in between 1500-2600m in average.

Zewdie (2007) reported that in Ethiopia highland area two types of roses are grown. These are Intermediates (80%) with stem length of 40 cm, 50 cm and 60cm and Hybrid Tea (20%) with stem length of 60 cm, 70 cm and 80 cm.

Zewdie (2007) further reported that annual production per square meter for Hybrid Tea and Intermediate type of varieties is 120 to 140 and 140-180 stems respectively. Majority of Ethiopian falls into the intermediates.

## 2.5 Cut roses quality factors

Quality is one of the factors that determine the price of flowers in the market. It is important to have knowledge of quality requirement of roses for different market by flower growers (Pertwee, 2003). Quality is considered as two types as follows:

### Product quality requirement

- *Length and strength of the stem:* this is the first quality measure which is measured by the shortest stem in the bunch. That is growers have to cut off any more of the stem to keep their grading categories as close as possible. Grade length for roses are: 30-40cm not saleable, 40-50 cm not viable, 50-60 cm most popular for small and mediums, 60-80 cm good for the large and long stemmed varieties, 80-100 cm viable only for domestic market if there is any guaranteed market is available and 100-120 cm not viable except for the specialists (Pertwee, 2003).
- *Size, shape and fullness of bud.*
- *Color of the flower:* color has to be uniform.
- *Quality of leaf:* bright color and no thorn marks.
- *Freedom from disease and pest.*
- *Freshness:* to give the consumers reasonable vase life of the flowers this is at least 7 days.
- *Uniform cut stage and maturity:* maturity is depending on the customer need and the length of days that the flower has to travel to reach to its customers.
- *Freedom from physical damage.*

## **Legal product requirement**

The introduction and establishment of new, economically or environmentally damaging plant pests and diseases has increased steadily as a result of the expansion in global trade of plant material. EU legislation lays down requirements for plant health in order to prevent the introduction of organisms harmful to plants or plant products. The requirements included in this legislation are called Phytosanitary or plant health measures. EU legislation is primarily focused on the trade in flowers, plants and fruits and vegetables (CBI, 2009).

Additional requirements are environmental and social requirements. As it is described in section 2.2.3 sub-section, there are some labels to prove certification of environmentally and socially sound production. Additionally in many cases EU buyers are willing to work together with their suppliers in order to reach the desired level of environmental and social performance. So that it is an advantage for suppliers to know which issues are important by their buyers to prepare their company according to what EU buyers require (CBI, 2009).

Certification can act as a means to provide and communicate good quality, which is one of the main aspects for EU buyers when selecting suppliers. Certification according to quality scheme such as ISO 9001 may also add value and increase opportunities in the EU market (CBI, 2009).

Considering this additional requirement, EHPEA has taken an important step that is adoption of a code of conduct for the sector. The adoption of international standards in this code of conduct has helped to promote the image of the Ethiopian flower industry in the international market (Gebreeyeesis and Lizuka, 2010).

## **2.6 Market information**

Well-established international markets exist for most export products; access is a big challenge for developing country firms (Gebreeyeesus and Lizuka, 2010).

Timely and accurate access to market information is essential to reduce risk and remain competitive in flower production and marketing (Kolavalli and Whitaker, 2006).

To make marketing plan for a company first there is a need to have key information concerning the companies, industries, and countries/areas that product is being sold in as well as information on customers and competitors (Pizano, 2005).

Flower growers need important market information sufficiently that is the amounts of flowers of a certain type or color that will be needed at a certain time, potential new markets and uses, expected and historical prices as well as amount and origin of export to develop their marketing strategy (Pizano, 2005).

Market information can be gathered from a wide variety of sources, including company records, professional journals, book, census and registration data, industry reports, monographs, publicly circulated reports of individual projects and marketing research (Walker et al., 1999).

## 2.7 Market information service

Market information service has the following impact (Walker et al., 1999):

- They can facilitate efficient allocation of productive resources
- The bargaining position of farmers with traders or retailers can be improved
- Market information reduces transaction cost by reducing risk. Farmers with timely and reliable information and the ability to interpret it can decide to which market they should send their produce to maximize returns.
- Inadequate information is an entry barrier to both production and trade. Where farmers have had access to information, shifts in planting varieties pattern to higher value produce. Otherwise it is difficult for the farmers to begin trading without market information that reduce competition within market.
- The essence of a good market information service is that it should provide commercially useful information on a timely basis.

In order to aid decision-making, market information must be (Abbott, 1993):-

*Relevant:* that is its content must be related to the information needs of the target group.

*Meaningful:* that is precisely specified with regard to location, time and formulated in a way which can easily be understood.

*Reliable:* that is accurately and regularly collected and transmitted.

*Promptly available:* that is published within a few hours of being collected.

*Easily accessible.*

Gebreeyesus and Lizuka (2010) also reported that association is playing a significant role in organizing external training courses related to marketing and code of conduct for workers and managers of flower farm.

Gebreeyesus and Lizuka (2010) also reported that EHPEA promoted the flower sector through participation in different international trade fairs. Moreover it organized three international trade fairs in Addis Ababa (the capital city of Ethiopia), in year 2005, 2007, 2009. And there were about 130 companies related to floriculture sector (flower breeders, fertilizer and chemical traders, greenhouse and irrigation system constructors and refrigeration installation companies)

Customer trend information is very important as a starting point in the product development process (Brindle, 2007).

The Ethiopian flower industry is supported by EHPEA, which is organized with weak man power and technical capabilities. Its capacity to collect, analyze and speculate future market demand and trend in international flower markets is limited (Chala et al., 2010).



## 2.8 Market information acquisition and utilization

Keh et al. (2006), investigated the effects of marketing information on the performance of enterprises and results also indicated that the utilization of information regarding marketing mix decisions (especially promotion and place) positively affects firm performance.

Beyond acquiring information, entrepreneurs also need to use this information to their marketing decision-making based on the marketing mix so that they better meet the needs of their customers and compete more effectively against their competitors (Keh et al., 2006).

Procter and Lings (2003) examined on their research the information use and performance relationship. Their findings indicated that conceptual use of information and inter-functional coordination are positively related to market planning effectiveness. Furthermore, market planning effectiveness was found to be positively linked to organizational performance.

Information is more valuable when product substitutability is higher; also information is of greater value in more competitive industries. Furthermore, although industry size does not affect the value of information, information is valuable for larger firms. Besides, more precise market information has greater impact on profit (Raju and Roy, 2000).

Procter and Lings (2003) reported that the effect of marketing information use on the decisions depends on the extent to which information is applied as well as the way it is taken into account.

Entrepreneurs give emphasis for promotional and advertising activities, in terms of enhancing customers' awareness and build customer retention enhance their performance as well as firms pay attention to the customer convenience and accessibility regarding distribution issues promote their performance (Keh et al., 2006).

## 2.9 Marketing Mix strategies

These are product, price, place and promotion.

**Product strategies:** this strategy covers the development and management of the company's tangible goods and intangible services to meet the needs of customers in targeted segments. While developing product strategy, marketers must look at the value of each good or service from the customer perspective as well as organization perspective. That is marketers must ask what value each product provides and to which customer segment, how the product helps the company reach its marketing and financial objectives (Wood, 2003). The strategies are as follows:

- *Changing product portfolio/mix:* is either offering only one product line, expanding product line to cover wider market, developing separate products for different markets, making different types of the product with different names for different or new products that complement existing products through the acquisition of new companies (Westwood, 1996).
- *Drop, add or modify products:* this strategy is about dropping marginal products, developing new products to replace old products and introducing of changed products.
- *Change design, quality or performance:* is a strategy of establishing quality image through the of quality products, separating of products from competitors' product in

the eyes of the customers establishing a reputation for innovation and creating new users for existing product by improving performance or by adding exclusive features.

**Price strategies:** are changing price, terms or conditions for particular product groups in particular market segments, skimming policies, penetration policies and discount policies (Westwood, 1996).

- *Skimming policies:* is selling on new revolutionary design features and benefits and being prepared to reduce price as volume increases if competitors enter market.
- *Penetration policy:* setting of low price for new product to competitors from entering market and increasing turnover to level where product becomes profitable at this price level.
- *Discount policies:* offering quantity discount to encourage larger unit purchases, offering revised discount based on level of purchases this year as well as offering discount for the next year based on level of purchases this year.

**Place strategies:** this covers the company's use of channel intermediaries such as wholesalers, retailers, and agents, to make goods available to customers (Wood, 2003).

- *Channel levels:* this is about how many channel levels are needed to make products available to the targeted segments? The higher the number of channel levels, the more intermediaries is in making the product available.
- *Channel functions:* this is about what functions each member in the channel should handle? The channel as a whole must perform a variety of functions to make the right assortment of products, in the right size, available to customers at the right time and place.
- *Logistics:* this covers the movement of goods, services, and related information from the point of origin to the point of sale.

**Promotion strategies:** are changing selling organization, changing advertising or sales promotion, changing public relations policy and increasing/decreasing exhibition coverage (Wood, 2003).

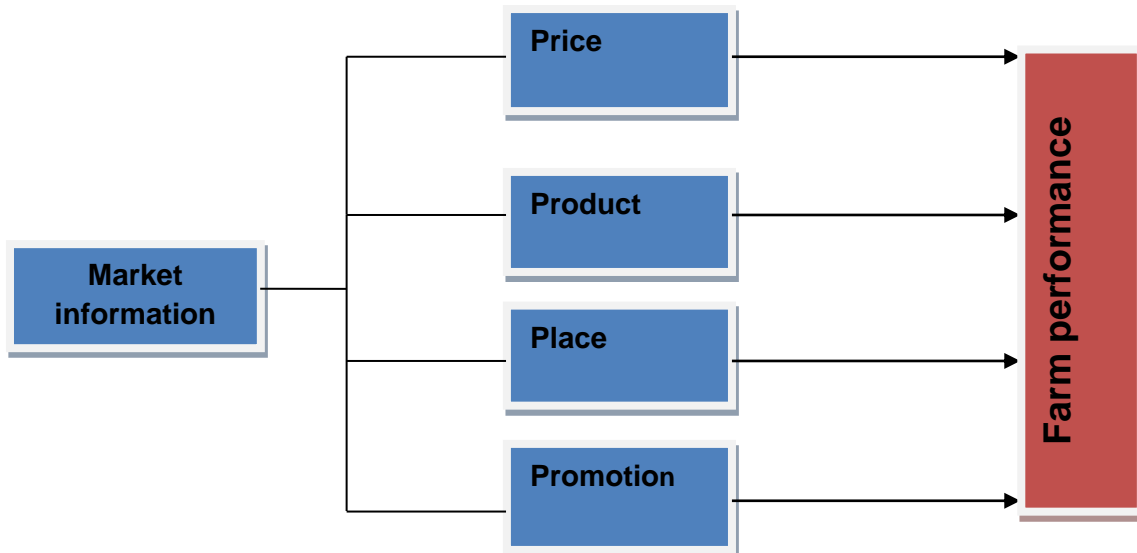
- *Change selling/ sales force organization:* this strategy includes sales organization, introduce performance-related bonus scheme for sales force, recruit additional sales personnel, increase sales effort for most profitable products and increase sales effort to increase sales to key/ major customers.
- *Change advertising/ sales promotion:* this strategy includes increasing advertising for the product in specific markets, start new advertising campaign, increasing company image advertising and carry out high key product launch.
- *Increase exhibition coverage:* this strategy includes increasing attendance and stand size at major industry exhibitions.

## 2.10 Conceptual framework

According to the literature developing marketing mix strategies (that are: price, product, promotion and place) is one of the core activities to enhance firms' performance. And market information is a starting point for developing marketing strategy. However, not only acquiring market information but also the extent to which information is applied or taken in to account matters to see the impact of market information on performance.

Considering this concept, if flower farms are able to obtain up to date, relevant and precise market information and able to utilize this information effectively to develop their marketing mix strategy, then their company performance will be enhanced (see Figure 3). However, if market information availability is insufficient or flower farms are unable to analyze the market information as well as they do not use market information effectively to develop their marketing mix strategy then their performance will be affected.

Figure 3: Conceptual research framework

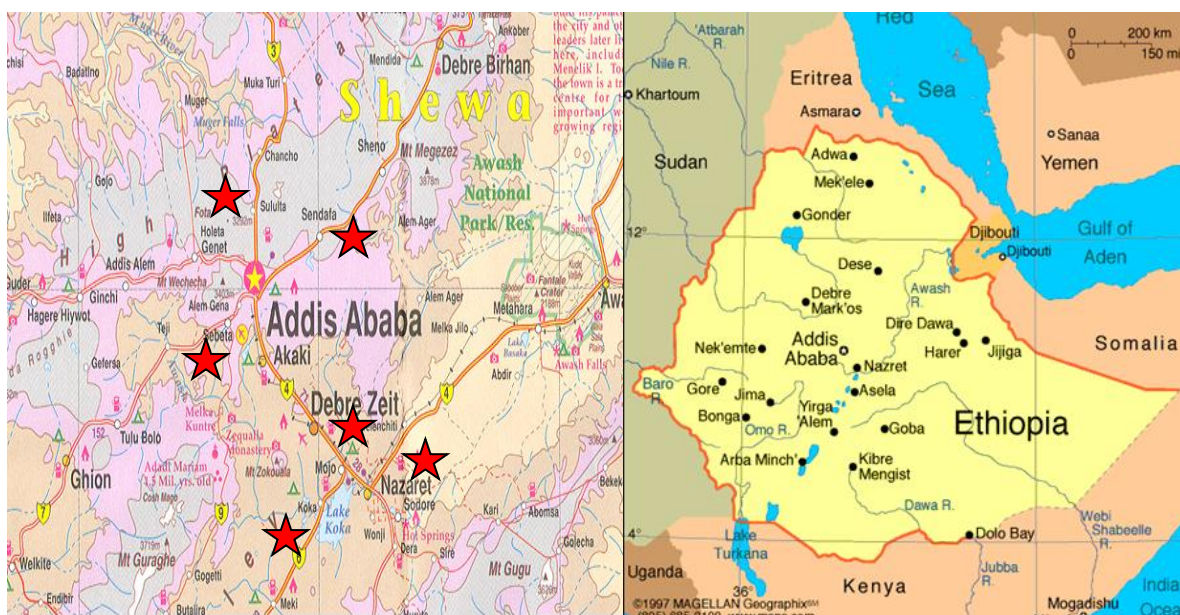


## CHAPTER 3: METHODOLOGY

### 3.1. Participants and setting

The research population consisted of 33 respondents out of which most of them are farm managers and marketing officers. The respondents were selected randomly out of which 60% of respondents were from the farms located in highland area (> 2000m) and 40% of the respondents were from the farms located in lowland area (<2000) because majority of the farms are located in highland.

Figure 4: Map of Ethiopian flower industry location



Source: Maps of world, 2007

Out of 33 farms 19 of them are from highland area such as: Ethiopian Meadows, Supra Floritech, Ethio Agri-ceft, Direhighland flora, Ethiodream, Joe flower, Rose Ethiopia, Flowerama, Gallica, Alliance flowers, Kaf roses, Joshua and Agriflora were from Holleta district. Et-Highland, Tinaw business, Enyi ethio rose, Lafto roses, Zagwe and Saron roses were from Sebeta district (see Figure 4).

Out of 33 farms 14 of them are from lowland area such as: Ziway roses, Sher Ethiopia, AQ roses, Herburg roses and Braam flowers were from Ziway area. Blen farm was from Koka area, moreover, Roshanara roses, Rainbow flowers, Bukito, Friendship flowers, Dugda flora, Minaye flowers, Joytech private limited and Yassin farm were from Debre Zeit district (see Figure 4).

The farm managers and marketing officers scheduled for interviews were those involved in marketing of products in the farms. The farms were to be visited during working days between 9 am and 5 pm. On the other hand executive director and information officer of the EHPEA was scheduled for interview.

### **3.2. Data collection**

The data to be collected consisted of both quantitative and qualitative. The quantitative data was collected using the questionnaires (see Appendix 1). Qualitative data was collected through asking explain informants current situation in the semi-structured questionnaire. The questionnaire was developed from the research questions that were used to gather quantitative data in the flower farms. The first main question and its sub-questions were used to develop part of the questionnaire for the flower farms while the second main question and its sub-questions were used to develop part of structured questionnaire for the flower farms and full of semi-structured questionnaire for the two key informants from EHPEA. Moreover, farms performance for five years (from 2006 to 2010 period of farms revenue) was collected for all the farms from secondary data from EHDA.

Hard copies of three questionnaires were issued to the farm managers for trial before data collection was started and it was clear enough for them to understand and answer all the questions. The researcher was going to each farm to guide the people while filling the questionnaire. Out of the total forty farms thirty three of them filled and returned the questionnaires. However the remainder seven farms asked the questionnaire to be sent through email and none of them replied.

Each questionnaire consisted of two sections that were derived from the main questions and under each section there were several questions under different categories to be answered. The first section of farm's questionnaire focused on the source of information, price information, product information, promotion and place (distribution) information by own company as well as the second section focused on market information service and promotion by EHPEA.

The responses for each variable in the questionnaires ranged from score of 1(very poor) to 5(Excellent).

Based on semi-structured questionnaire, EHPEA information service activities and challenges faced during market information service delivery were discussed with key informants.

### **3.3. Data analysis**

To determine the similarities and/or differences in the data collected, tools of Statistical Package for Social Sciences (SPSS) were used that is Bivariate Correlations, Legacy Dialogs and 123 frequency.

The bivariate correlations with Pearson test was used for variables consisting scale data such as: price information, product information, promotion, place, EHPEA market information service, EHPEA promotion (as independent variables) and farm performance (as dependent variable) as it is shown in the next chapter.

Using a 123 frequency, the comparison between variables under given variable lists was compared in order to determine their measures of central tendency and measure of dispersion. These variables consisted of scale data and were categorized under variable lists of source of market information and aspects that were used for promotion shown in the next chapter.

The mean was used to determine the measures of central tendency of the variables. Meanwhile the standard deviation was used to determine the measure of dispersion of the variables.

Legacy Dialogs of pie graph was used to see the relationship between variables in flower types and market distribution channels.

### **3.4 Limitation of the study**

While conducting this research, it was not easy to get the right person to answer the questions in the questionnaire since the people in the farm are more production oriented and not comfortable to answer marketing related questions as well as managers or marketing officers were busy. Because of this the researcher had to explain the purpose of this study to meet the right people. However, out of 40 flower farms 33 of them answered the questions. Additionally, this research focused on the effect of sourcing and utilizing of market information by flower farms and EHPEA market information service on performance of flower sector. So that other institutions that might support or give market information service are not evaluated or discussed in this research. Moreover, this study was done on cut rose producers only.

## CHAPTER 4: RESULTS

The objective of this chapter is to elaborate and describe the source of market information, the effect of market information acquisition and utilization for their marketing- decision making based on marketing mix (Price, Product, Place and Promotion) on flower farms' performance.

Furthermore, the result describes the effect of market information service and promotion by EHPEA on flower farms' performance as well as EHPEA information activities and the challenge faced while delivering the information. The result is organized through information obtained from 33 farm managers and/or marketing officers of the flower farms and two key informants from EHPEA. There were 40 questionnaires delivered to the flower farms and 33 of them answered.

### 4.1 Source of market information

What is the important source of market information in your company?

Table 2 presents the mean for the variables of market information sources based on the importance for the farms. The table compares the results on the importance between different sources for the farms. It is observed that the overall mean for own market research and agent in the market scored higher (4.48 and 3.82) than that of others with a standard deviation of 1.004 and 1.334. However, EHPEA scored low mean 2.21 with a standard deviation of 1.023.

Table 2 : Important source of market information for flower companies

| No | Item                                   | Mean | Std. Deviation |
|----|--|------|----------------|
| 1  | Own market research                    | 4.48 | 1.004          |
| 2  | Agents in the market                   | 3.82 | 1.334          |
| 3  | Other official institutions (eg: EHDA) | 2.79 | 1.111          |
| 4  | Foreign advisors                       | 2.52 | 1.503          |
| 5  | Other flower farms                     | 2.52 | 1.064          |
| 6  | Publications (eg: magazine)            | 2.36 | 1.194          |
| 7  | EHPEA                                  | 2.21 | 1.023          |

Though EHPEA informants mentioned that they are providing market information service to the flower farms, the result implied that agents in the market and own market research are considered the most important market information source by the flower farms.

## 4.2 Price

What is the level of price information in your company?

A Pearson correlation was run to determine the relationship between price information and farms performance. There was positive correlation between the price information and farms performance, which was statistically significant ( $r_s = .393$ ,  $P = .024$ ) (see Appendix 3.1).

The result implies that there is a direct relationship between the price information and farms performance. This means that the higher the farms are provided with up to date price information of targeted markets (such as: wholesalers price and retailers price of auction and direct market) the higher is their performance.

## 4.3 Product

What is the level of product information in your company?

A Pearson correlation was run to determine the relationship between product information and farms performance. There was strong, positive correlation between the product information and farms performance, which was statistically significant ( $r_s = .407$ ,  $P = .019$ ) (see Appendix 3.2).

The result showed that there is direct relationship between the product information and farm performance. This means that the more flower farms are provided with relevant product information (such as: varieties, quality standards, competitors, as well as customer trends on flowers markets of different market channels) depending on the types of flowers produced by the farms, the higher is their performance.

### 4.3.1 Flower types

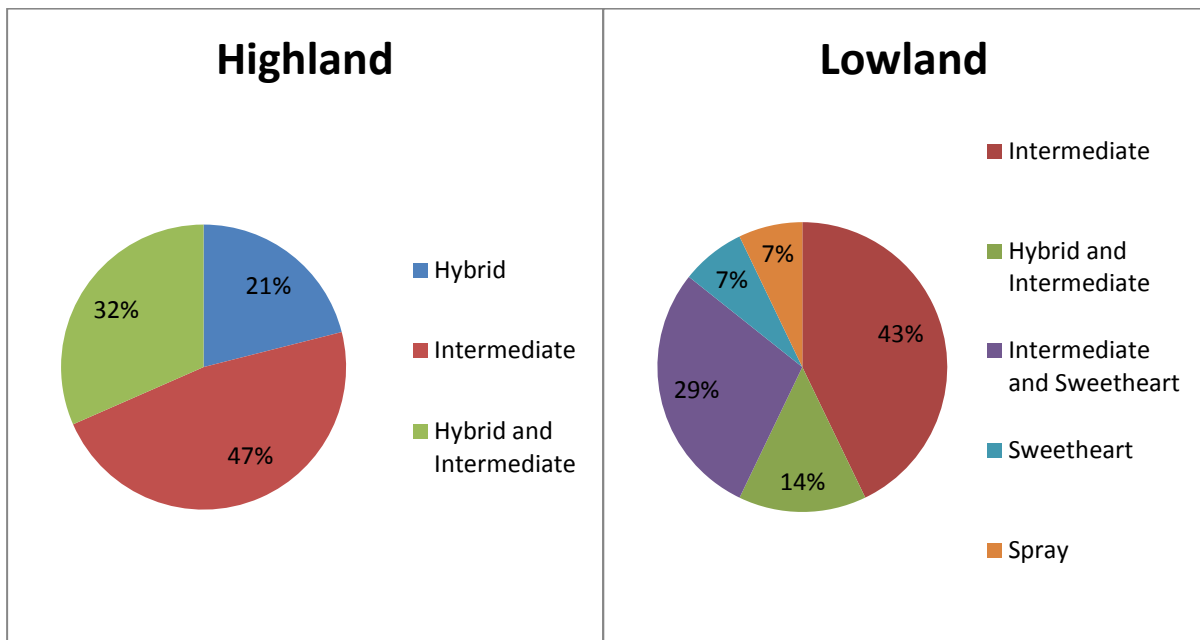
Which types of roses are produced by the flower farms?

In addition to showing the relationship between the product information and performance of flower farms, it is also pertinent to indicate the flower types that farms actually produce.

From the figure 5, it is shown that most of the farms located in highland area produce Intermediate type of roses with 47% followed by both Hybrid and Intermediate producers with 32% and Hybrid producers with 21% respectively. On the other hand farms located in lowland area produce Intermediate type of roses with 43% followed by both Intermediate and Sweetheart producers 29% and both Hybrid and Intermediate producers with 14%. About 7% farms located around lowland area produce Sweetheart and the same for Spray rose types.



Figure 5: Types of flowers grown in different locations



#### 4.4 Promotion

What is the level of promotion by your own company?

A Pearson correlation was run to determine the relationship between promotion and farms performance. There was strong, positive correlation between the promotion and farms performance, which was statistically significant ( $r_s = .418$ ,  $P = .015$ ) (see Appendix 3.3).

The result implies that there is a direct relationship between promotion and farms performance. The higher the promotion activity is done for the flower sector in the international market (through participating on national and international trade fairs, being published on magazines and newspapers that are popular in the flower market, sending product samples to different buyers and through visiting customers), the higher is the farms performance.

##### 4.4.1 Aspects used for company promotion

Farms employ different aspects of promotion in order to promote their products in different marketing channels. This was also found to be relevant to compare the promotion aspects used by the farms.

Table 3 presents the mean for the variables of promotion aspects by the farms. The table compares the results between different aspects used by the flower companies. The overall aspects used for company promotion is high. However, relatively It is observed that the mean for the product quality and range of varieties scored very high (4.48 and 3.94) than that of others with a standard deviation of 0.566 and 0.827.

Table 3: Aspects that are used by the flower companies for promotion in the market

| No | Item                                 | Mean | Std. Deviation |
|----|--------------------------------------|------|----------------|
| 1  | Product quality                      | 4.48 | 0.566          |
| 2  | Range of varieties                   | 3.94 | 0.827          |
| 3  | Scale of production                  | 3.70 | 0.951          |
| 4  | Social and environmental performance | 3.52 | 1.121          |
| 5  | Market label certificates            | 3.33 | 1.267          |

This result implies that though flower farms use other aspects such as: scale of production, social and environmental performance and market label certificates, they mainly use the product quality aspect and variety aspects for promotion.

#### 4.5 Place

What is the level of information regarding product distribution in your company?

A Pearson order correlation was run to determine the relationship between information in distribution aspect and farms performance. There was strong, positive correlation between the information on distribution and their performance, which was statistically significant ( $r = .439$ ,  $P = .011$ ) (see Appendix 3.4).

The result implies that the higher information regarding distribution aspect of the farm is directly related to their performance. This means that the higher the flower farms are provided with different marketing channels information, the higher is their performance.

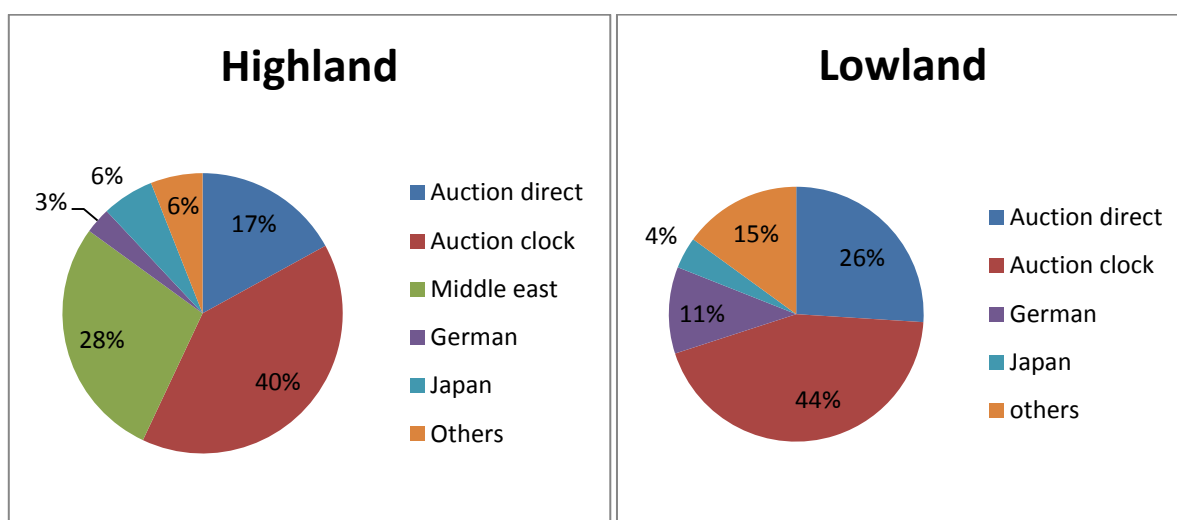
##### 4.5.1 Market distribution channels

In addition to assessing the relationship between the information regarding place (distribution channels) and farms performance, the type of distribution channels used by the farms was required to be identified.

From figure 6 major market channel for farms in highland area is Dutch auction clock (which is 40%) followed by Middle East with 28%. Market outlet through Dutch auction direct, Japan, German and others are 17%, 6%, 3% and 6% respectively.

On the other hand, major market outlet for farms located in lowland area is Dutch auction clock with 44% followed by Auction direct with 26%. Also the market through other channels such as Japan, German and others are 4%, 11% and 15% respectively.

Figure 6: Markets outlets for farms in different locations



#### 4.6 EHPEA market information service to flower farms

What is the contribution of EHPEA regarding market information to the flower farms?

A Pearson correlation was calculated to test the relationship between EHPEA market information service and flower farms performance. But no statistically significant correlation was noted on the 5% level ( $r_s = .269, P > 0.05$ ) (see Appendix 3.5).

This means that the overall rating of the market information service by EHPEA is not significant to the performance of farms.

##### 4.6.1 EHPEA Promotion to flower farms

A Pearson correlation was calculated to test the relationship between promotion by EHPEA and flower farms' performance. But no statistically significant correlation is noted on the 5% level ( $r_s = -.046, P > 0.05$ ) (see Appendix 3.6).

Although promotion by flower farms is directly related to performance, the same is not supported from the promotion by EHPEA.

##### 4.6.2 EHPEA market information activities to the flower farms

What activities have been carried out?

Although the above overall market information service and promotion by EHPEA for flower farms showed that non significance on the performance of the flower farms, regarding information service EHPEA informants described the service delivered to the flower farms as follows:

*Relevant:* as per the informants since its establishment, EHPEA has been providing market information to the flower farms. Such as: price of different market, country profile of market places (that is specific requirement on quality and type of roses), competitors as well as address of auctions of different countries where there is opportunity for high supply.

This market information is communicated to the flower farms through EHPEA website, individual emails, preparing workshops and training by invited consultant as well as quarterly published EHPEA magazine.

Moreover, sector promotion has been carried out by EHPEA through participating in national and international flower exhibition, sending sample flowers to the buyers as well as inviting some buyers to make on farm visit.

*Meaningful:* as per the informants mostly they communicate the information gathered to the farms as it is raw such as, buyer information that is request for specific variety, about potential buyers' country profile like the culture, holidays, the variety choice, the auctions address and other requirements like legal requirements.

*Reliable:* since EHPEA information is limited and insufficient, farms cannot rely on EHPEA market information.

*Promptly available:* as per the informants, it depends on the information. If it is about a product request or a buyer visit then it will be communicated as soon as possible to the farms through email. Information regarding price from historical data have been availed on EHPEA website which is updated once in a week, if it is about potential market then workshop will be organized or training session through invited guest or consultant as necessary.

*Easily accessible:* as per the informants, all the farms have an access of EHPEA website and magazine. However, when buyer comes member farms are visited so that the opportunity is not always the same for all the farms.

It was not possible to compare the previous years' plan and achievement regarding EHPEA market information service and promotion due to there was no compiled report documented about the activities carried out and achieved. So the informants' information is used for analysis.

#### **4.6.3 Challenges on delivering market information service**

What challenges have been faced by EHPEA while delivering the market information?

Informants assert that it is also difficult to source up to date market information regarding price of different market channels, competitors and varieties since EHPEA does not have marketing experts to do marketing research and make proper analysis so that information is not sufficient.

Informants also mentioned that due to limited information regarding the company profile of all the flower farms, it makes it difficult to link the buyer with a grower who can fulfill the requirement of buyers' specification.

## CHAPTER 5: DISCUSSION

The aim of this chapter is to cast more light on the effect of market information acquisition and utilization for marketing decision-making based on marketing mix (such as: price, product, place and promotion) on the performance of floriculture sector in Ethiopia as well as the effect of EHPEA market information service and promotion on the performance of flower sector. The result of this study and the connection between various subjects are discussed below:

### 5.1 Price information

Considering the result, it showed that the higher flower farms acquire price information, the higher is their performance. This indicates that flower farms should be provided with sufficient information regarding price of different market channels. Such as information on wholesalers price of auction and direct market as well as retailers price in a way that can be understood and utilized. This means depending on the market channel, the types of information to be provided can be different.

For instance, those farms engaged in the auction market will not determine the price, because price is determined by the wholesalers (buyers) in the market. However, it might be relevant to provide information regarding buyers' requirement such as: which type of variety fetch higher price, the season for high price and quality standards for high price. On the other hand for the flower farms engaged in direct market, it is important to provide the wholesalers and retailers price of targeted market channels. Because this can facilitate the farms for making decision for which market to go for and improve their bargaining position.

Price information can be sourced through conducting marketing research in different targeted market. For instance, auction price can be found through historical data, the direct market price of different market segments may be sourced from the flower farms themselves and through market assessment. This information can be analyzed and presented in a way that farms can utilize it. This means that it may be difficult for EHPEA to present each and every buyer's price but the compiled data about the overall price situation of varieties and qualities in different market segments.

The result is also showing that not only acquiring the information but also the extent to which information is utilized for decision making while developing price strategy matters on increasing performance. So that information utilization is not one time job but it needs to be gathered and utilized for decision making every day. Flower farms managers and marketing officers should know that they need to utilize the information for the decision making every day. In this aspect EHPEA would have a role to guide and follow up their market information utilization through hiring consultants.

Furthermore, the result showed that farms are considering own market research and agents in the market are most important information source for their company than EHPEA. The respondents (managers) assert that although it is not enough own market research is dependable for using it to develop their market strategy. While agents in the market are the one who give them information regarding their flower price, quality feedback and link them to the direct market. However, risk is involved in being dependent on agents' information since they are also working for profit. (CBI, 2009) reported that working with the agents has a challenge of no price setting transparency and no objective for quality control. This further show that farms need more reliable information to cross check with the information sourced from agents for their decision making.

Although, EHPEA informants said that they provide price information for the farms, the overall EHPEA market information service was insignificant for flower farms performance. This is because EHPEA provides the Dutch auction market price based on the historical data. However, this information is public even non-members can obtain price and quantity information of the Dutch flower auction. Considering the need of the farms price information, the information provision by EHPEA was inadequate.

EHPEA informants further indicated that they had some constraints that hinder further implementation of market information service to the flower sector such as, scarce of skilled man power, unable to source precise information, inadequate marketing research as well as unable to analyze the acquired information. Additionally it was difficult for them to source price information particularly for the direct market on the targeted market channels. This is because farms are not open to tell about their price in the market. This further shows that farms do not have trust on EHPEA market information service.

Considering respondents opinion it is important that EHPEA strengthen the relationship with the flower growers. This can be done by using consultants to go each farm and discuss farms' status on marketing and assess the need of the farms. So that relationship might build up gradually through recognizing the importance of the services being given by EHPEA.

## **5.2 Product information**

The result also showed that product information is directly related to the flower farms performance. This indicates that flower farms should be provided with relevant and up to date product information of different market requirements such as: flower quality, variety, quantity and competitors.

Since the higher information enhances performance, flower farms should be provided with sufficient and precise product information. This means information should include the amount, color, variety and quantity required by different targeted market channels. This is because depending on the varieties their market channels will also be different.

The result further showed that since the types of flowers produced by the flower farms located in highland and lowland area are different, product information should be provided based on the relevance of the information to the farms, which is depending on the types of flowers produced by the farms. For instance, flower farms located in highland area are not producing Sweetheart type of roses so that the information related to this type of flower is not relevant for flower farms located in highland area.

Moreover, accurate information should be provided timely. Which means that the farms need to know customer trends of targeted markets about specific requirement on the quality, color and quantity of flowers on time so that they make their production plan based on the information. Moreover, this should provide them information about when to produce, how much quantity to produce, which variety to produce as well as for which market to produce.

It is also important for flower farms to be provided with information which varieties to produce for which market segment to make their variety choice. They need to be provided with future forecast based on the market research with varieties required in different targeted market channels. Because due to the shortage of accurate and timely availed information, some farms were obliged to uproot and change the variety of flowers that is very costly.

Furthermore, farms need to know the opinion of customers on their product in different market segments, so that they make continuous improvement to satisfy their customers.

It is also vital for flower farms to know about their competitors that produce the same product for the same targeted market regarding their position in the market compared to Ethiopian flower growers. Additionally, their advantage and disadvantage compared to Ethiopian flowers in international market. This information will contribute what product strategy farms need to develop to have a better position in the market. Raju and Roy (2000) also reported that information is more valuable when product substitutability is higher and information is of greater value in more competitive industries.

Although EHPEA informants said that they provide about specific buyer requirements to the farms as well as country profile of market places (that is specific requirements on quality and type of roses) and competitors, from the result the overall EHPEA market information service was not significant on farms performance. This implies that the information provision service was inadequate for the farms to utilize it for their marketing decision which is against with one of the strategies of EHPEA that is providing market information for flower sector to achieve the sustainable competitive position of Ethiopian flowers in the global market.

Moreover, respondents mentioned that they need to be provided with reliable and up to date product information, which is based on the market research, supported with a precise figure to be able to utilize the information while developing product strategy.

Since EHPEA realized the challenges for not being able to deliver sufficient market information service for the farms, it is important that the necessary actions are taken. Employing marketing specialists to carry out marketing delivery service effectively (that is: collect, analyze and disseminate market information to the farms on time) may be one of a solution for EHPEA.

Product information can be sourced from breeders and through market research. Top ten varieties in the market can be found from breeders as well as through conducting market research on customer trends of what varieties, quality and color is required by different market segments. Moreover, the marketing staffs can create strong contact with buyers association or buyers in different market channels for better exchange of information about the farms profile to the buyers and market information from buyers to EHPEA.

### **5.3 Promotion**

Considering the result shown above, promotion is directly related to flower farms performance. This further implies that the flower sector has to be promoted more in different market channels through participating trade fairs, sending sample flowers to different buyers, being published on publications that are popular in market places, visiting different buyers in different market channels as well as inviting buyers to come and visit the flower farms.

It is also vital that the flower sector has to be promoted through participating on trade fairs whenever there is an exhibition prepared in targeted market place.

The result also further showed that though flower farms recognized that other aspects of promotion as important, they consider product quality and range of varieties are more significant aspect to promote their product in different market channels. However, looking at different market segments have their own requirement, doing promotion based on the requirement of the market will be crucial. For example, in Dutch flower auction most important aspect might be product quality and scale of production, on the other hand in finding niche market of direct market with retailers (like supermarket) may ask for compulsory quality standard certificates (for socially and environmentally sound product) in addition to the product quality.

Although EHPEA informants said that they are promoting the sector in different market, the result showed that EHPEA promotion of the sector was insignificant on flower farms performance. This implies that the promotion was not sufficient.

Respondents also mentioned that all farms do not have equal chance to be visited by the delegates of buyers from different countries. On the other hand EHPEA informants said that because farms are not willing to give information about their company profile like the varieties they are growing and the production scale that they have, it becomes difficult for EHPEA to send the buyers to a farm that fulfills the requirements of the buyers.

From the result it can be observed that though the farms need more market information and promotion because they do not have trust on EHPEA, they become reluctant to give their profile.

Since EHPEA is established for one of the reason is to promote the sector in global market, it is expected to create positive reputation in targeted markets and to promote the sector further as a representative about the types of flowers produced, quality, quantity as well as other aspects such as the flower sector code of conduct (which is adopted from international standards to implement social and environmental requirements that are being implemented by the flower farms) in different international markets. This can be done by being published on different publications and by creating strong link with the buyers association in different countries where there is high potential for flower supply as well as buyers in the market. Keh et al, (2006) supported the idea that entrepreneurs give emphasis for promotional and advertising activities, in terms of enhancing customer's awareness and build customer retention enhance their performance.

Moreover, in this case EHPEA marketing staff can actively participate in exhibition of different markets; they can also prepare and disseminate brochures to the buyers as well as interact and communicate regularly with buyers.

#### **5.4 Place (distribution) information**

The result in the previous chapter showed that place information is directly related to performance. This implies that flower farms should be provided with information regarding different market channels considering the market outlets the farms are using.

Since the higher the flower farms are provided with more information their performance will also be enhanced, providing information that shows the strength, weakness, opportunity and threats of targeted market channels based on the market research will be significant.



The result further shows that flower farms located in highland area and lowland area have different market outlets so that the need for the information may vary between farms. For example, farms sending their flower through the Dutch auction may have an advantage of price transparency and disadvantage of high cost transaction for selling flowers through the auction. While the farms engaged in Middle East market channels may have an advantage of short distance for product delivery and a disadvantage of seasonal demand. So this type of information should be provided for the flower farms depending on the targeted market channels. So that flower farms will be able to utilize this information for their decision making while they make export plan.

Although, EHPEA informants said that they make the market assessment for checking the potential market for Ethiopian flower sector and avail buyers address like auction addresses of different countries and specific buyer request (if there is any), based on the result EHPEA role was not significant for flower farms performance. This shows that flower farms did not get enough information about different market channels from EHPEA. This further implies that EHPEA was giving more focus on non-core activities than the activities that supposed to be carried out considering the mission to be achieved.

Furthermore, from the results it can be observed that most of flower farms outlet is Dutch flower auction and there may be a risk for being dependent on one market channel and looking forward for whatever happens. So that EHPEA is expected to work on market diversification of flower sectors through market analysis for feasible market outlet in the future. And this information should be communicated to the farms so that they will be able to utilize the information for acting proactively.

This can also be done through conducting market research. Considering the flowers quality, variety and quantity that are available in Ethiopian flower sector, the marketing staff at EHPEA can look for the market segments that give a better opportunity to sell out the farms' product. And disseminate these types of information for the farms. This can be utilized for their export plan.

Since there are also competitors supplying the same product, whenever there is an advantage for Ethiopian flowers it has to be communicated to the farms as fast as possible. This means that normally the website update can be done once in a week but in this kind of sensitive issue, communication has to be done immediately without waiting for the time of updating.

## CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

Considering the findings in relation to the objective of the study, that is to evaluate how market information utilization and acquisition affect flower farms performance, the contribution of EHPEA market information service on flower farms performance as well as identifying interventions for the improvement of flower farms' market information utilization while developing their marketing strategy, the following conclusion is made:

The higher the price information is provided to the flower farms, the higher is their performance. So that flower farms should be provided with relevant, up to date and precise price information depending on the farms market channels (direct or auction) to enhance their performance. This information can be collected from historical data of auction market and flower farms of direct market channels. This information can be compiled, analyzed and disseminated by EHPEA marketing staffs to the flower farms through website or magazine. Since farms need to utilize the information before the information is outdated, the earlier the information is communicated to the farms the better.

Similarly, the higher the product information is provided to the flower farms, the higher is their performance. This also shows that flower farms should be provided with relevant, accurate and timely product information (such as: variety, quality and quantity) to enhance their performance. Considering the importance of this information, variety can be sourced from breeders by collecting top ten varieties and from market research (such as: checking of what varieties are fetching good price and comparing price of competitors' varieties). This information has to be collected and registered in EHPEA database for analysis. And from this variety information can be delivered to the farms. This type of information may help the farms for variety selection.

Moreover, the higher the promotion is done for flower sector in international market, the higher is the farms performance. This implies that the flower sector should be promoted in the targeted market through different promotion activities using the relevant promotion aspects depending on the requirement of the targeted market. Since one of EHPEA mandate is to promote the sector as a representative so flower sector has to be promoted. This can be done through creating strong relationship with buyers, participating on different international flower trade fairs, distribution of fliers to different buyers and inviting buyer delegates from different market segment.

Furthermore, the higher the farms are provided with information regarding place (distribution channels), the higher is their performance. This indicates that flower farms should be provided with analyzed and meaningful information that specify each targeted market segment with its advantage and disadvantage for the flower farms. This is also can be sourced through conducting market research in different market segment and from the flower farms experience also. As an association this information can also be analyzed and availed to the farms. This information may help them to select market segment.

Additionally, I conclude that not only acquiring information but also the extent to which information is utilized for decision making while flower farms develop their market strategy is fundamental for their performance improvement. EHPEA can also hire a consultant to guide and follow up their market information utilization by the flower farms while they develop a strategy.

I also conclude that EHPEA market information and promotion was not significant for farms performance. This shows that EHPEA was giving attention for non-core activities than that of core activities that supposed to be carried out for achieving its mission which is promote and safeguard the sustainable competitive position of flower sector within the global market through delivering market information service, linking producers with buyers and promoting the sector in international market. EHPEA needs to organize its marketing service.

I further conclude that flower farms lost their trust on EHPEA market information service due to the fact that EHPEA is not undertaking its responsibility. Association has to work on building relationship with flower farms. This may be through using a consultant to visit farms and support with their market information utilization for their marketing decision making so that they may build trust through time.

## **6.2 Recommendations**

This section describes the possible intervention that may be applied for improved market information utilization for their marketing decision-making to develop marketing strategy.

Based on the conclusions drawn as discussed in the previous section, following recommendations were made to enhance the flower farms' performance by increasing the market information service to the farms as well as improve the information utilization by the flower farms.

Since from the result it is observed that the higher market information provided, the higher the flower farms performance, I would recommend EHPEA the following:

### **6.2.1 Establishing marketing department**

Marketing department office to be established and marketing specialists to be employed supported by consultants to advise the experts on collecting, analyzing and disseminate the market information to the flower farms. The following activities to be carried out in this department:

- Collecting price information of wholesalers and retailers from different market segment and from the farms as well. Analyzing this information and providing to the farms in a way that they understand easily. This information can be communicated to the farms through websites and brochures that are updated once in a week. This will facilitate the farms to act proactively and satisfy their customer as well as for those farms engaged in direct market improve their bargaining power.
- Collecting product information from market as well as from breeders, analyzing and formulating the information in a way that it is understood by the farms and communicate on time. This will help the farms on variety selection.
- Promoting flower sector in international market through different promotion activities such as, using different aspects of promotion that reflects the image of Ethiopian flower farms depending on the requirement of the buyers in the market, creating contact with buyers, disseminate brochures to the buyers in the market and inviting buyers delegates from different market channels to have a tour visit of flower farms.
- Conducting market research regarding different market channels opportunities and threats as well as collecting information about the customer trend of different market.

And provide the information to the farms precisely which is supported with figures and avail the information on time. So that farms will be able to make their export plan in advance,

### **6.2.2 Capacity building on market information utilization**

To build the capacity of the farms on acquiring and utilizing the information for their decision making, it is essential that flower farms are provided with the following:

- Farms to be supported on market information utilization while they develop a marketing strategy by consultant hired by EHPEA
- Follow up on market information utilization of the farms to be done by the consultant to make sure that market information is utilized by the farms for their market decision-making effectively.

### **6.2.3 Building and maintaining relationship**

- Strong relationship to be developed and maintained with buyers in the market. This can be done through creating contacts with buyers and communicating frequently. This will facilitate information exchange about the market from the buyers to EHPEA and about the Ethiopian flowers to the buyers which is the starting point for linking the farms with buyers.
- Strong relationship to be developed with flower farms to build trust. This should be given a priority to be considered. Because without having trust of the farms, even if the association provides information, they may not utilize it. The association consultant can have a role on introducing market information utilization for farms' marketing decision-making. And gradually they may develop trust after they realize that the information is meaningful and useful to develop their marketing strategy.

I also recommend for further study to be carried out on the result of the identified recommendations.

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## APPENDICES

Questionnaires for flower farms.

### Appendix 1

#### Structured questionnaire for flower farms (managers or marketing officers)

This questionnaire is prepared to evaluate the effect of market information on flower farms' performance. And it is divided in to sub sections such as: most important source of market information for flower farms, information acquisition and utilization for marketing strategy development (from price, product, promotion and place perspective) by flower farms as well as EHPEA contribution on market information for flower farms.

Please indicate your opinion by ticking and filling in the box provided.

1. How many types of roses are you producing?

Hybrid tea

Intermediate

Sweetheart

Spray roses

2. Where are you exporting your flowers? Please indicate the countries and market channels.

| Name of countries | Market channels |               |                |
|-------------------|-----------------|---------------|----------------|
|                   | Direct          | Auction clock | Auction direct |
|                   |                 |               |                |
|                   |                 |               |                |
|                   |                 |               |                |
|                   |                 |               |                |

3. Please rate the types of market information source listed below based on the importance of the source for your company (scale of 1-5) 1= not important 5=very important

| No | Item                         | 1 | 2 | 3 | 4 | 5 |
|----|------------------------------|---|---|---|---|---|
| 1  | Foreign advisors             | 1 | 2 | 3 | 4 | 5 |
| 2  | Other flower farms           | 1 | 2 | 3 | 4 | 5 |
| 3  | Publications (eg: magazines) | 1 | 2 | 3 | 4 | 5 |
| 4  | EHPEA                        | 1 | 2 | 3 | 4 | 5 |
| 5  | Other official institutions  | 1 | 2 | 3 | 4 | 5 |
| 6  | Agents in the market         | 1 | 2 | 3 | 4 | 5 |
| 7  | Own market research          | 1 | 2 | 3 | 4 | 5 |



4. Please rate the level of price information in your company (scale of 1-5) 1=very poor  
5=Excellent

| No | Item   | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1  | Up to date price information can be accessed   | 1 | 2 | 3 | 4 | 5 |
| 2  | Information about prices for different market channels can be accessed               | 1 | 2 | 3 | 4 | 5 |
| 3  | The company is able to analyze market information                                    | 1 | 2 | 3 | 4 | 5 |
| 4  | The company has price strategy   | 1 | 2 | 3 | 4 | 5 |
| 5  | The company has developed price strategy based on the market information             | 1 | 2 | 3 | 4 | 5 |
| 6  | The company set a price for targeted market based on the analyzed market information | 1 | 2 | 3 | 4 | 5 |

5. Please rate the level of product information in your company (scale of 1-5), 1=very poor  
5=Excellent

| No | Item  | 1 | 2 | 3 | 4 | 5 |
|----|---|---|---|---|---|---|
| 1  | Accesses product information  | 1 | 2 | 3 | 4 | 5 |
| 2  | Information about cut roses quality required by different market channels can be accessed | 1 | 2 | 3 | 4 | 5 |
| 3  | Information about supplier countries (competitors) can be accessed                        | 1 | 2 | 3 | 4 | 5 |
| 4  | The company has product strategy  | 1 | 2 | 3 | 4 | 5 |
| 5  | The company used market information to develop product strategy                           | 1 | 2 | 3 | 4 | 5 |
| 6  | Variety selection is based on the market information                                      | 1 | 2 | 3 | 4 | 5 |
| 7  | Production plan is based on the market information  | 1 | 2 | 3 | 4 | 5 |
| 8  | Information about the perception of customers on the company product can be obtained      | 1 | 2 | 3 | 4 | 5 |
| 9  | The company makes continuous improvement on the product based on the customer opinion     | 1 | 2 | 3 | 4 | 5 |

6. Please rate the level of promotion by your own company (scale1-5), 1=very poor  
5=Excellent

| No | Item  | 1 | 2 | 3 | 4 | 5 |
|----|---|---|---|---|---|---|
| 1  | The company makes promotion through participating trade fairs                   | 1 | 2 | 3 | 4 | 5 |
| 2  | The company makes promotion through magazines, journals and news papers         | 1 | 2 | 3 | 4 | 5 |
| 3  | The company makes promotion through sending product samples to different buyers | 1 | 2 | 3 | 4 | 5 |
| 4  | The company makes promotion through visiting customers                          | 1 | 2 | 3 | 4 | 5 |
| 5  | The company makes promotion through Media                                       | 1 | 2 | 3 | 4 | 5 |
| 6  | The company has been linked with some buyers through its promotion              | 1 | 2 | 3 | 4 | 5 |

7. Please rate the level of promotion by EHPEA (Scale 1-5), 1=very poor 5=Excellent

| No | Item   | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1  | The company has been promoted through EHPEA on trade fair                          | 1 | 2 | 3 | 4 | 5 |
| 2  | The company have been visited with buyers through EHPEA                            | 1 | 2 | 3 | 4 | 5 |
| 3  | The company had an opportunity to send sample flowers for promotion through EHPEA  | 1 | 2 | 3 | 4 | 5 |
| 4  | The company name have been publicized on different websites and magazines by EHPEA | 1 | 2 | 3 | 4 | 5 |
| 5  | The company have been linked with buyers through EHPEA                             | 1 | 2 | 3 | 4 | 5 |
| 6  | The company is satisfied with EHPEA promotion                                      | 1 | 2 | 3 | 4 | 5 |

8. Please rate the level of information on distribution of products (Scale 1-5) 1=very poor 5=Excellent

| No | Item   | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1  | Company can access relevant information on different market channels                       | 1 | 2 | 3 | 4 | 5 |
| 2  | the company has distribution strategy  | 1 | 2 | 3 | 4 | 5 |
| 3  | The company utilized the information to develop its distribution strategy                  | 1 | 2 | 3 | 4 | 5 |
| 4  | The company updates its strategy based on the market information about the market channels | 1 | 2 | 3 | 4 | 5 |
| 5  | The company engaged to the current market segment based on the market information          | 1 | 2 | 3 | 4 | 5 |
| 6  | The company is able to diversify its market channels based on the market information       | 1 | 2 | 3 | 4 | 5 |

9. Please rate the level of your satisfaction on EHPEA's market information service delivery based on the following: (Scale 1-5) 1=very poor 5=Excellent

| No | Item   | 1 | 2 | 3 | 4 | 5 |
|----|--|---|---|---|---|---|
| 1  | The company can access relevant market information from EHPEA                  | 1 | 2 | 3 | 4 | 5 |
| 2  | Market information provided by EHPEA are up to date                            | 1 | 2 | 3 | 4 | 5 |
| 3  | The company can access information about flower quality from EHPEA             | 1 | 2 | 3 | 4 | 5 |
| 4  | The company can access information about different flower varieties from EHPEA | 1 | 2 | 3 | 4 | 5 |
| 5  | The company can access wholesalers price information from EHPEA                | 1 | 2 | 3 | 4 | 5 |
| 6  | The company can access retailer price information from EHPEA                   | 1 | 2 | 3 | 4 | 5 |
| 7  | Information regarding different market channels can be accessed from EHPEA     | 1 | 2 | 3 | 4 | 5 |
| 8  | Information regarding competitors can be found from EHPEA                      | 1 | 2 | 3 | 4 | 5 |
| 9  | EHPEA helped the company to make or change marketing decision                  | 1 | 2 | 3 | 4 | 5 |
| 10 | The company is satisfied with EHPEA market information delivery service        | 1 | 2 | 3 | 4 | 5 |

## Appendix 2

### Table of cut flower farms location

Table 4: Number of different type of cut flower farms around the capital city, Addis Ababa, 2008

| Common Cluster Name | Type of Flower | Number of farms by flower types | Total number of farms | Percentage of farms | Mean distance from Addis Ababa(km) | Mean altitude (m) |
|---------------------|----------------|---------------------------------|-----------------------|---------------------|------------------------------------|-------------------|
| DebreZeit           | Roses          | 13                              | 16                    | 18                  | 50                                 | 1,870             |
|                     | Summer         | 3                               |                       |                     |                                    |                   |
| Ziway               | Roses          | 10                              | 10                    | 11                  | 163.0                              | 1,644             |
| Sebeta/Alemgena     | Roses          | 15                              | 19                    | 21                  | 21                                 | 2,082             |
|                     | Summer         | 3                               |                       |                     |                                    |                   |
|                     | Cutting        | 1                               |                       |                     |                                    |                   |
| Koka                | Cutting        | 4                               | 4                     | 4                   | 98                                 | 1,617             |
|                     | Roses          | 1                               | 1                     |                     |                                    |                   |
| Sendafa             | Roses          | 1                               | 3                     | 3                   | 39                                 | 2,228             |
|                     | Cutting        | 2                               |                       |                     |                                    |                   |
| Sululta             | Rose           | 1                               | 3                     | 3                   | 25                                 | 2,228             |
|                     | Summer         | 2                               |                       |                     |                                    |                   |
| Hollela/Addis Alem  | Rose           | 26                              | 27                    | 30                  | 50                                 | 2,289             |
|                     | Summer         | 1                               |                       |                     |                                    |                   |
| DebreBirhan         | Rose           | 1                               | 1                     | 1                   | 130                                | 2,230             |
| Awash               | Cutting        | 1                               | 1                     | 1                   | 116                                | 1,442             |
| Bahir Dar           | Rose           | 5                               | 5                     | 6                   | 563                                | 1,644             |
| Total               | <b>Roses</b>   | <b>73</b>                       | <b>90</b>             | <b>100.0</b>        | <b>88</b>                          | <b>1,969</b>      |
|                     | <b>Cutting</b> | <b>6</b>                        |                       |                     |                                    |                   |
|                     | <b>Summer</b>  | <b>11</b>                       |                       |                     |                                    |                   |

Source:gds, 2011

## Appendix 3

### Tables of correlation results

#### Appendix 3.1

Table 5: Relationship between price information and performance

|             |                     | Price | Performance |
|-------------|---------------------|-------|-------------|
| Price       | Pearson Correlation | 1     | .393*       |
|             | Sig. (2-tailed)     |       | .024        |
|             | N                   | 33    | 33          |
| Performance | Pearson Correlation | .393* | 1           |
|             | Sig. (2-tailed)     | .024  |             |
|             | N                   | 33    | 33          |

\*. Correlation is significant at the 0.05 level (2-tailed).

#### Appendix 3.2

Table 6: Relationship between product information and performance

|             |                     | Performance | Product |
|-------------|---------------------|-------------|---------|
| Performance | Pearson Correlation | 1           | .407*   |
|             | Sig. (2-tailed)     |             | .019    |
|             | N                   | 33          | 33      |
| Product     | Pearson Correlation | .407*       | 1       |
|             | Sig. (2-tailed)     | .019        |         |
|             | N                   | 33          | 33      |

\*. Correlation is significant at the 0.05 level (2-tailed).

#### Appendix 3.3

Table 7: Relationship between promotion and performance

|             |                     | Performance | Promotion |
|-------------|---------------------|-------------|-----------|
| Performance | Pearson Correlation | 1           | .418*     |
|             | Sig. (2-tailed)     |             | .015      |
|             | N                   | 33          | 33        |
| Promotion   | Pearson Correlation | .418*       | 1         |
|             | Sig. (2-tailed)     | .015        |           |
|             | N                   | 33          | 33        |

\*. Correlation is significant at the 0.05 level (2-tailed).

### Appendix 3.4

Table 8: Relationship between place and performance

|              |                     | Performance | Distribution |
|--------------|---------------------|-------------|--------------|
| Performance  | Pearson Correlation | 1           | .439*        |
|              | Sig. (2-tailed)     |             | .011         |
|              | N                   | 33          | 33           |
| Distribution | Pearson Correlation | .439*       | 1            |
|              | Sig. (2-tailed)     | .011        |              |
|              | N                   | 33          | 33           |

\*. Correlation is significant at the 0.05 level (2-tailed).

### Appendix 3.5

Table 9: Relationship between EHPEA market information service and performance

|             |                     | Performance | Service |
|-------------|---------------------|-------------|---------|
| Performance | Pearson Correlation | 1           | .269    |
|             | Sig. (2-tailed)     |             | .131    |
|             | N                   | 33          | 33      |
| Service     | Pearson Correlation | .269        | 1       |
|             | Sig. (2-tailed)     | .131        |         |
|             | N                   | 33          | 33      |

### Appendix 3.6

Table 10: Relationship between EHPEA promotion and performance

|             |                     | Performance | Promotioneh |
|-------------|---------------------|-------------|-------------|
| Performance | Pearson Correlation | 1           | -.046       |
|             | Sig. (2-tailed)     |             | .800        |
|             | N                   | 33          | 33          |
| Promotioneh | Pearson Correlation | -.046       | 1           |
|             | Sig. (2-tailed)     | .800        |             |
|             | N                   | 33          | 33          |

