Chapter 2. Multilevel Environmental Governance - The Case of Ethiopian Floriculture

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Environmental Policy Update 2012: Multilevel Environmental Governance - The Case of Ethiopian Floriculture

By Nina Hatch & Lindley Wells

Executive Summary

The Ethiopian Floriculture sector began in 1997 with just two flower farms, but has grown to more than 80 operational flower farms in the country today. The rapid growth of the industry is due to a variety of factors such as a mild climate, government support, proximity to the global market, ease of transportation, favorable investment laws and incentives, and abundant and cheap labor. As the floriculture industry grows, it has positively impacted employment in Ethiopia, creating roughly 70,000 jobs at the local level, making a large contribution to the improvement of livelihoods, food security, and reduction of poverty. The industry continues to grow physically and monetarily, however as it grows on such a large scale, there are concerns about potential environmental impacts such as water pollution from fertilizer and pesticide use.

Using a comprehensive literature review, interviews via email and phone, as well as Geographic Information Systems (GIS) analysis this chapter responds to the research questions: What are the social, environmental, and economic implications of the floriculture sector in Ethiopia?, and How might different levels of regulation improve the environmental outcomes of the industry?

This study looked at three levels of regulation: state-based regulation, international regulation by investors and buyers, and industry-based self-regulation. Each of these three sets of actors is currently focused primarily on the economic growth and development of the floriculture industry in Ethiopia today. However, they each also take into account the potential for environmental sustainability in the industry.

The intent of this study was to create policy recommendations for the Ethiopian Government and relevant stakeholders to promote environmental sustainability while also preserving the economic development floriculture brings to Ethiopia. This study suggests it would be beneficial to conduct an Environmental Impact Assessment on the floriculture industry. Additionally it is essential to improve the collaborative relationship between the state government, international actors, and the Ethiopian Horticulture Producer Exporters Association. Finally, the floriculture industry would benefit from developing a “Gold Seal” certification (a label targeted at international flower consumers) awarded to companies reaching Gold Level Code of Practice standards.
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Introduction

Ethiopia’s floriculture industry has surpassed most African nations historically engaged in floriculture (EHPEA, 2007). In 2006, the annual income of Ethiopian floriculture reached $104 million. This year revenues are predicted to exceed $200 million (EHPEA, 2012). Ethiopia is best known for the cultivation of numerous types of roses, but also grows Gypsophila, Hypericum, Limonium, Carnation, Statice, Chrysanthemum, Allium, Carhamus, Lilies, Freesia, and Geranium (FloraCulture International, 2012; Embassy of Ethiopia, n.d). These flowers are produced in greenhouses around Addis Ababa and the Great Rift Valley for export to Holland, Germany, and the United Kingdom, as well as Russia, Japan, Scandinavia, Middle Eastern countries, and the United States to a lesser extent (EHPEA, 2007). The sector is one of the top five foreign exchange earners in Ethiopia, and will likely continue to bring in more income as usable land increases (EHPEA, 2007).

Floriculture is the “discipline of horticulture concerned with the cultivation of flowering and ornamental plants for gardens and floristry” (Getu, 2009). The production and export of cut flowers has brought great economic development to Ethiopia, and the industry served as the centerpiece of the late Prime Minister Meles Zenawi’s development strategy (Ethiopian Press Agency, 2012). It has created 70,000 jobs, the majority of which are held by women (Tamrat, 2011). However the environmental consequences of floriculture, particularly due to the widespread use of pesticides and chemical fertilizers, are significant (Getu, 2009).

This study investigates the environmental, social, and economic implications of commercial floriculture in Ethiopia, with a specific focus on how different levels of institutional regulation (national laws, international standards, and industry-based self-regulation) can incentivize more ecologically and socially responsible flower production practices. Through a review of literature, case studies, and Geographic Information Systems (GIS) analyses, the study aims to make relevant policy recommendations to increase the benefits and decrease the negative impacts of floriculture in Ethiopia.
Area of Focus

The majority of floriculture greenhouses are located in towns surrounding the capital city of Addis Ababa and throughout the Ethiopian Rift Valley, a region that lies between the Ethiopian Plateau to the north and the Somalian Plateau to the south (Figure 1).

The rapid growth of the floriculture industry in Ethiopia is due to a variety of factors including: a suitable climate for flower production, significant government support, favorable investment laws and incentives, proximity to global markets, ease of transportation, and abundant and cheap labor (Henshaw, 2006; Getu, 2009; Gebreeyesus & Iizuka, 2010; Embassy of Ethiopia, n.d). One factor making Ethiopia an especially ideal climate for growing flowers is its varied elevation, which creates both tropical and subtropical zones. Additionally, Ethiopia’s abundant water supply makes it an ideal location for horticulture (Tamrat, 2011).

Figure 1. Location of the Ethiopian Great Rift Valley (ESRI, 2012).
Background

Industry Growth

Meskel Flower, the first commercial floriculture farm in Ethiopia, was established in 1997 on only a few hectares of land (Getu, 2009). Ethio-flora, the second commercial floriculture farm, was created later that year (T. Abebe, personal communication, October 31, 2012). Floriculture quickly became a booming sector in Ethiopia and between 1997 and 2008, the number of functioning flower farms rose to 81 (Figure 2) (Tamrat, 2011).

The cut flower industry in Ethiopia has emerged as one of the biggest sources of foreign exchange earnings in recent years, and the government predicts that in 2013 flower exports will overtake coffee exports at a value of one billion U.S. dollars (Ethiopian Flower Export, 2010). In 2010, 80% of the $250 million of horticultural exports were exports of cut-flowers (Tamrat, 2011). Figure 3 shows the volume and location of flower exports from 2008-2010. As seen in the figure, the Netherlands is the largest importer of Ethiopian flowers.

Economic Impacts of the Industry

Floriculture has positively impacted employment in Ethiopia. The industry has created roughly 70,000 new jobs, making a large contribution to the improvement of livelihoods, food security, and reductions in poverty (Tamrat, 2011). The floriculture sector has created many skilled and unskilled jobs at the local level, reaching roughly 50 to 70 jobs per hectare (Embassy of Ethiopia, n.d.; Glenn, 2012; Tamrat, 2011). The industry has taken steps to support workers by paying them well, and in 2010, the industry began paying wages that were equal to or above minimum wage (Tamrat, 2011). In recent years, unions have formed to further protect workers. Many workers try to find a job on a farm with a union even if it means reduced wages. Workers value
unions because they provide them with health insurance, annual leave, and additional benefits. Furthermore, workers who are a part of unions can refuse to work in a greenhouse after it has been sprayed for up to three hours to ensure they do not inhale the chemicals (Tamrat, 2011). Although there are many benefits for workers to be part of unions, they are not common in the floriculture industry; workers risk being fired from their jobs after joining unions because they make managers' jobs more challenging (Gadaa, 2010).
Figure 3. Location and volume of Ethiopian flower exports from 2008-2010 (Tamrat, 2011).
Environmental and Health Impacts of Floriculture

Due to the rapid growth of the floriculture industry, many have become concerned by the potential for adverse environmental impacts. Fertilizers and pesticides, used extensively in the industry, have been linked to negative environmental and health impacts (Getu, 2009; Gadaa, 2010). Floriculture companies often build greenhouses along lakesides to facilitate easy irrigation systems for their flowers, which threatens the availability and quality of these water resources (Jansen & Harmsen, 2011).

Impact on Land and Water Resources

The Central Rift Valley has experienced land-use changes since the 1970s, largely due to converting woodland to agricultural land (Reaugh-Flower, 2011). The industrial system of floriculture has been one of the driving factors of change in land use. The average size of a floriculture company farm is 12.5 hectares (about 30 acres or 0.125 km²) (FloraCulture International, 2012). Satellite imagery clearly demonstrates the dramatic visual impact of these greenhouse units. On the left of Figure 4 is a satellite image from Google Earth taken from an altitude of 10.38 miles. The right hand image, an inset of the left, is an image taken from an altitude of 2.7 miles.

![Figure 4. Left: view of greenhouses in Holota and Menagesha from an altitude of 10.38 miles, Right: zoomed view of inset of Holota greenhouse taken from an altitude of 2.7 miles (GoogleEarth, 2012).](image)

Most greenhouses are built in close proximity to water, which has negatively impacted the water resources of Ethiopia (Hengsdijk & Jansen, 2006). Many of the lakes in the Great Rift Valley are endorheic, meaning they are end points of watersheds that do not drain (Graichen, 2011; Ramsar, 1996). These lakes are highly susceptible to damage from the floriculture industry because of the agricultural residue discharges that regularly flow from the greenhouses into the lakes (Jansen & Harmsen, 2011; Getu, 2009).
Fertilizer Use

Fertilizers are used in many different forms of agriculture to increase the level of crop production by adding nutrients to the soil that benefit the growth of plants (Federal Environmental Protection Authority, 2012a). However, they are often harmful to the environment (Getu, 2009). The only alternative to chemical fertilizers is the use of organic methods, which can be timely and costly, but less harmful to the environment (Pimentel, Hepperly, Hanson, Douds, & Seidel, 2005).

In the floriculture industry, fertilizer demand is especially high due to the year-round production of flowers (Hengsdijk & Jansen, 2006). Dutch fertilization standards for roses cultivated under artificial light require 1,190 kilograms of nitrogen (N) per hectare, and 280 kilograms of potassium (K) (Hengsdijk & Jansen, 2006). Crops do not absorb all the fertilizers that are applied, and much of the excess fertilizer runs off into the Rift Valley Lake water systems (Federal Environmental Protection Authority, 2012a). The residue of these fertilizers can cause water pollution, eutrophication of fresh waters, and increased nitrate concentrations in ground and surface waters (Federal Environmental Protection Authority, 2012a). The long-term use of inorganic fertilizers can also be detrimental to the soil because it can kill nitrogen-fixing bacteria and other beneficial organisms (Pimentel et al., 2005). As a result, more fertilizers are applied each year to make up for the loss of natural microorganisms and micro-nutrients (Getu, 2009).

Additionally, fertilizer use can have negative health implications. The excessive use of nitrates has been linked to the blood disorder methemoglobinemia, commonly known as blue-baby syndrome, which occurs when people drink water that is contaminated with excess nitrates (Federal Environmental Protection Authority, 2012a; Getu, 2009; World Health Organization, 2012). Excess nitrates interfere with the oxygen carrying capacity of the blood, and have also been suspected as a carcinogen (World Health Organization, 2012).

Pesticide Use

Floriculture is prone to pests, weed attacks, and fungal diseases; therefore, pesticides are widely used to reduce pest and disease pressure (Hengsdijk & Jansen, 2006). However, less than 0.1% of applied pesticide reaches the target pest, while the other 99.9% is a pollutant to the environment, much of which leaches into water bodies (Getu, 2009; Pimentel, 1995; Sabik, Jeannot, & Rondeau, 2000). Target pesticides kill many beneficial flora and fauna, which normally help kill other pests, pollinate plants, and build organic matter in soil (Pimentel, 2005; Getu, 2009). Frequent use of pesticides can also lead to health problems. Chronic health effects such as cancers, reproductive disorders, and birth defects have been linked to pesticides (Andersen et al., 2008; Haylamicheal & Dalvie, 2009; Winchester, Huskins, & Ying, 2009). Pesticide residues can also accumulate in fish and aquatic organisms, threatening food chains and human health alike (Hengsdijk & Jansen, 2006).
In 2009-2010, Wageningen University conducted water quality research at three sampling sites near a floriculture complex built next to Lake Ziway in the Rift Valley. Two sites were sampled in 2009 and one in 2010. They tested for 200 pesticides and found 30 with concentrations of 0.1 µg/l or higher, five of which are classified as high-risk pesticides (Table 1) (Jansen & Harmsen, 2011). Furthermore, concentrations of some of the pesticides were occasionally above thresholds where negative impacts on water organisms can be detected (Jansen & Harmsen, 2011).

**Health and Social Impacts**

Many are interested in the health of workers and growers in the floriculture sector. In recent years, the industry and governmental agencies have taken steps to make floriculture farms safer work environments, because a sick worker is both a direct and indirect cost to the grower. Many companies believe in providing and enforcing the use of protective gear when spraying chemicals (Nigatu, 2010; Tamrat, 2011). Supplying protective gear is obligatory as to protect the workers as best they can; additionally, many growers have chemical vendors conduct training sessions about the proper application of chemicals (Tamrat, 2011; Nigatu, 2010). If the workers do have health problems there are several medical personal at a nearby hospital in Ziway who serve flower farm employees and their families for free (Tamrat, 2011).

**Opportunities for Environmental Regulation**

Given the environmental impacts associated with commercial floriculture, regulation has the potential to improve these negative implications (Getu, 2009). The majority of the literature on the floriculture industry has focused on the environmental impacts themselves (Hengsdijk & Jansen, 2006; Getu, 2009; Tamrat, 2011; Jansen & Harmsen, 2011). This study instead focuses on regulation of the floriculture sector for environmental sustainability.
Table 1: Pesticides detected in the outflow water of a greenhouse on Lake Ziway.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Registered Pesticide</th>
<th>Concentration (µg/l)</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitertanol</td>
<td></td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Boscalid</td>
<td>Yes</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Bupirimate</td>
<td>Yes</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Caffeine</td>
<td>Detected</td>
<td></td>
<td>Moderate toxicity</td>
</tr>
<tr>
<td>Carbendazim</td>
<td></td>
<td>0.5</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Clofentezine</td>
<td>Yes</td>
<td>0.1</td>
<td>Slightly hazardous</td>
</tr>
<tr>
<td>Cyprodinil</td>
<td></td>
<td>0.05</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>3, 5-dichloroaniline</td>
<td>Detected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethyltoluamide</td>
<td></td>
<td>0.06</td>
<td>Slightly hazardous</td>
</tr>
<tr>
<td>Dimethomorf</td>
<td>Yes</td>
<td>0.09</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Dodemorf</td>
<td></td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Endosulfan-sulfate</td>
<td>Yes</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Ethirimol</td>
<td></td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>Fenamiphos</td>
<td></td>
<td>0.08</td>
<td>Highly Hazardous</td>
</tr>
<tr>
<td>Fenamiphos-sulfone</td>
<td></td>
<td>0.01</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Fenamiphos-sulfoxide</td>
<td></td>
<td>0.07</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Fenarimol</td>
<td></td>
<td>0.4</td>
<td>Slightly hazardous</td>
</tr>
<tr>
<td>Fenhexamid</td>
<td>Yes</td>
<td>0.08</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Fenitrothion</td>
<td>Yes</td>
<td>0.16</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Fludioxonil</td>
<td></td>
<td>Detected</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Flusilazole</td>
<td></td>
<td>Detected</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Hexythiazox</td>
<td></td>
<td>0.09</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Imidaclorpid</td>
<td>Yes</td>
<td>0.3</td>
<td>Moderately Hazardous</td>
</tr>
<tr>
<td>Iprovalicarb</td>
<td></td>
<td>0.38</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Lufenuron</td>
<td></td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Metalazyl</td>
<td>Yes</td>
<td>0.18</td>
<td>Moderately Hazardous</td>
</tr>
<tr>
<td>Methiocarb</td>
<td></td>
<td>0.04</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Methoxyfenozide</td>
<td></td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Oxamyl</td>
<td></td>
<td>0.01</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Piperonyl-butoxide</td>
<td></td>
<td>0.02</td>
<td>Moderate Toxicity</td>
</tr>
<tr>
<td>Profenofos</td>
<td></td>
<td>Detected</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Profenofos metabolite</td>
<td>Yes</td>
<td>Detected</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Propamocarb</td>
<td>Yes</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td>Pyraclostrobin</td>
<td></td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Spiroxamine</td>
<td>Yes</td>
<td>Detected</td>
<td>Moderately Hazardous</td>
</tr>
<tr>
<td>Tetraconazole</td>
<td></td>
<td>Detected</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>tetradiifon</td>
<td></td>
<td>0.4</td>
<td>Slight Toxicity</td>
</tr>
<tr>
<td>Thiophanate-methyl</td>
<td></td>
<td>0.05</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Tributyl phosphate</td>
<td></td>
<td>Detected</td>
<td>Slight toxicity</td>
</tr>
<tr>
<td>Triadimefol</td>
<td></td>
<td>0.1</td>
<td>Moderately Hazardous</td>
</tr>
<tr>
<td>Triadimefon</td>
<td>Yes</td>
<td>0.16</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Trifloxystrobin</td>
<td></td>
<td>0.34</td>
<td>Slight Toxicity</td>
</tr>
<tr>
<td>Triforine</td>
<td></td>
<td>0.1</td>
<td>High-Risk Pesticide</td>
</tr>
<tr>
<td>Tris(2-chloroethyl) phosphate</td>
<td></td>
<td>Detected</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Adapted from Jansen & Harmsen, 2011)

Note: The following pesticides were detected in 2009 sampling: Acetamiprid*, Azoxyystrobin*, Bisphenol A, Diuron-metabolite, Etoxazol, Iprodione*, Linuron, Methomyl, Tebufenpyrad* (* denotes registered pesticide).
Methods

This study began with a comprehensive literature review gathering information pertaining to the floriculture industry in Ethiopia from academic journal databases. Email and telephone interviews with individuals from the Horn of Africa Regional Environment Center (HoAREC), Wageningen University and Intermon Oxfam, and the Ethiopian Horticulture Producer Exporters Association (EHPEA) further informed the analysis. Graphic Informational Systems (GIS) analyses, using data from Esri and DIVA-GIS, helped to visually illustrate floriculture company locations as well as export destinations.

As shown in Figure 5, this study looked at the growth and investment laws and environmental regulations at three different levels – state-based environmental laws, international environmental standards, and industry self-regulation – to explore how each of these potential sources of environmental regulation could best promote sustainable development in the Ethiopian floriculture sector.

![Diagram of regulation opportunities for environmentally sustainable floriculture](image)

Figure 5. Regulation opportunities for environmentally sustainable floriculture.
Results

State-based Regulation of the Floriculture Sector

Although the floriculture industry is not directly regulated by the Ethiopian Government, many policies and laws have a hand in indirectly regulating the industry, including investment laws, and water, fertilizer, and pesticide policies.

Growth and Investment Incentives

The Government of Ethiopia actively promotes and supports the floriculture sector (Gray, 2007). The government aids the industry by providing tax exemption for inputs, tax holidays, and leases of land with basic infrastructure, electricity, and water (Embassy of Ethiopia, n.d.; The Embassy of Japan in Ethiopia, 2008). As a result of this backing, the floriculture industry has grown dramatically.

In Ethiopia, investment, in general, has grown in recent years, and as a result, the government has created laws to regulate it. Investment Proclamations 84 and 280 regulate investment activities (Damtie & Bayou, 2008). These Proclamations state that in order for organizations to undertake any commercial activity, they must first acquire an investment license. In the case of commercial floriculture operations this license allows greenhouse managers to engage in foreign activities and investments. In order to obtain a license, the applicant must provide information about the intended investment activity, investment capital, investment area, the kind and size of the intended production or service, and the number of jobs the investment will create (Assefa, 2008; Damtie & Bayou, 2008). Ultimately, these licenses can be taken away if the applicant provides false information, attempts to transfer the permit, fails to renew their permit, misuses their permit, or engages in illegal activity (Damtie & Bayou, 2008). As the sector grows, the Ethiopian government aims to expand its production and exportation of flowers so they can play a leading role in international markets (T. Abebe, personal communication, October 31, 2012).

Environmental Regulations

Environmental Impact Assessment Proclamation. The Environmental Impact Assessment Proclamation, brought into law in 2002, has the potential to regulate the floriculture industry. An Environmental Impact Assessment (EIA) is a legal procedure that requires industry and new development plans to be assessed for specific social, socio-economic, environmental, political, and cultural impacts before they begin (Environmental Policy of Ethiopia, 1990; Damtie & Bayou, 2008). The goal of an EIA is to promote sustainable development and a good quality of life by mitigating the negative aspects and enhancing the positive effects of a project (Damtie & Bayou, 2008).
Under the EIA Proclamation a project manager will receive a fine between 50,000 and 100,000 birr ($2,754 to $5,509) if they do not complete an EIA before commencing a project or if they make a false presentation in the EIA study report, potentially resulting in substantial costs for growers (Damtie & Bayou, 2008). However, because the Proclamation is in its early stages, it is often poorly enforced (Assefa, 2008). When faced with the prospect of losing investors due to stricter environmental regulations that come as a result of an EIA, the government has enforced the Proclamation much less vigorously (Assefa, 2008). For some, EIAs are seen as merely a bureaucratic hurdle that blocks economic growth and development in general (Damtie & Bayou, 2008).

In regards to the floriculture industry, the Proclamation has not been enforced and therefore no EIA has been used to assess the environmental safety of the industry. Indeed, international investors in the floriculture industry have been drawn to Ethiopia at least in part due to its low-cost labor and weak environmental laws (Embassy of Ethiopia, n.d.). The lack of EIA requirements to date may be due to the economic benefits the industry brings to the country: the Ethiopian government has tried to make it as easy for investors to start businesses, and therefore does not necessarily require an EIA. In the short term, not doing an EIA and receiving investments in industries seems very profitable. Yet in the long term, industries such as the floriculture industry, may cause major environmental damage, which could negatively impact the environment and society as a whole (Damtie & Bayou, 2008).

Water Policy. Ethiopia’s water system is threatened by human activities such as pollution and water scarcity (Assefa, 2008). The floriculture industry puts significant pressure on the water resources of the Rift Valley Lakes, by drawing water for irrigation as well as releasing wastewater containing pesticide and fertilizer residue back into lakes (Jansen & Harmsen, 2011). Additionally, as previously mentioned, many of the lakes near floriculture greenhouses are endorheic (Ramsar, 1996), which can be problematic because of high levels of water pollution.

The main policy regulating Ethiopia’s water resources, enforced by the Ministry of Water Resources (MoWR), is the Water Resources Management Policy, ratified in 1999 (The Federal Democratic Republic of Ethiopia, 1999). Its goal is to “enhance and promote national efforts towards the efficient, equitable, and optimum utilization of the available Water Resources of Ethiopia for significant socioeconomic development on a sustainable basis” (The Federal Democratic Republic of Ethiopia, 1999). This policy states that, “every Ethiopian citizen shall have access to sufficient water of acceptable quality to satisfy basic human needs” (Assefa, 2008). It develops water quality criteria as well as legal limits for pollution. It also ensures that water bodies are protected from waste water pollution discharged by industries (The Federal Democratic Republic of Ethiopia, 1999). MoWR encourages EIAs regarding water use and pollution. Although the Ministry is set up to enforce the Water Resources Management Policy, the lakes in Ethiopia remain a common property resource, property owned collectively and accessed openly by all (Assefa, 2008).
**Fertilizer Policy.** Fertilizers are one of the largest inputs in the floriculture industry. In the early 1990s, the free market controlled fertilizer imports and use (Yamano & Arai, 2010). There was an enormous increase in fertilizer consumption, from 49,996 tonnes in 1993 to 78,443 tonnes in 1997 (Yamano & Arai, 2010). The demand for fertilizer is expected to continually increase due to the growth in agricultural extension programs (Federal Environmental Protection Authority, 2012a). Additionally, as the floriculture industry in Ethiopia grows, large amounts of fertilizer use will continue to be used (Federal Environmental Protection Authority, 2012a).

Fertilizer policies in Ethiopia regulate the storage and packaging of fertilizers but not the volumes used (Yamano & Arai, 2010). The Water Resources Management Policy has pollution standards for fertilizer residue in greenhouse wastewater. In 2012, the Government conducted an EIA on fertilizer use because of its known environmental impacts (Federal Environmental Protection Authority, 2012a). Although this EIA was not conducted specifically on the floriculture industry, because fertilizers are one of the main inputs of the industry, this EIA may have an indirect impact on the industry although it is too early to know what this impact will be (Federal Environmental Protection Authority, 2012a).

**Pesticide Policy.** Chemical pesticides are widely used in the floriculture industry. Most of the pesticides used in Ethiopia are imported, with three thousand tonnes imported annually, at a total value of roughly $20 million USD (Federal Environmental Protection Authority, 2012b). Figure 6 shows the dramatic 520% increase in the value of Ethiopian pesticide imports since 1997.

![Pesticide Import Value](FAOSTAT, 2012)

**Figure 6. Pesticide import value in Ethiopia 1993-2011 (FAOSTAT, 2012).**

A relevant law pertaining to pesticide regulation use is the Pesticide Registration and Control Proclamation 674/2010. Many of the pesticides used in the floriculture industry have been registered, but as seen previously in Table 1, there are many pesticides in use in Ethiopia that have not been registered by this Proclamation. The Proclamation states that “no pesticide shall be registered unless the efficacy, safety and quality is tested under field or laboratory conditions and
approved by the Ministry” (Federal Democratic Republic of Ethiopia, 2010). It also states that the Ministry will authorize the registration of a pesticide when “the pesticide does not cause human and animal health hazards when handled and applied in accordance with the instructions…the residue of the pesticide is not persistent or toxic and the benefits outweigh the risks of use under local socio-economic conditions” (Federal Democratic Republic of Ethiopia, 2010). Pesticide registration can also be re-evaluated and recalled. The law also regulates the packaging, labeling, advertising, transport, disposal of the registered pesticides, and occupational safety measures that employers must follow. Any person that does not follow this proclamation will be punished with possible imprisonment and a large fine. Pesticide residue pollution is further regulated both under the Water Resources Management Policy and the Environmental Pollution Control Proclamation (Federal Environmental Protection Authority, 2012b).

Ultimately the Ethiopian Government has many environmental laws in place that have the potential to regulate the floriculture industry to promote the sustainability of the sector. Yet because the government is focused on the growth of the floriculture industry, these laws may be overlooked due to the increased costs associated with environmentally sustainable production. Recognition of the lack of enforced state-level environmental standards has fueled the emergence of alternative forms of environmental regulation and oversight.

International Regulation of the Floriculture Sector

International investment has played a pivotal role in the growth of the floriculture industry in Ethiopia (Helder & Jager, 2006). Additionally, because the majority of flowers are exported, increased consumer demand for sustainably produced flowers has had an indirect impact on environmental regulations in the industry.

Growth and Investment: Ethiopian-Netherlands Partnership

The Dutch government has acknowledged the growth of floriculture in Ethiopia, and therefore is committed to preserving and protecting this sector through a public-private partnership program (Gray, 2007). The partnership was started in 2006 with monetary support from the International Research Program of the Netherlands Ministry of Agriculture and the Nature and Food Quality (Helder & Jager, 2006; MPS, 2012). Both Wageningen University Research Center and the Ethiopian Horticulture Producer Exporter Association helped to spur this partnership (Helder & Jager, 2006).

The mission of this partnership is “to create a competitive, demand driven, self-sustaining, and innovative horticulture sector that is well connected in international networks” (Helder & Jager, 2006). Additionally, the mission focuses on the importance of environmentally and socially friendly production as well as positively impacting the local, regional, and national economic development (Wageningen University, 2010; Jimma University ICT Computing Team, 2011). On an international level, the partnership aims to create a strong international reputation for the Ethiopian horticulture
sector as well as strengthen the cooperation between Ethiopia and the Netherlands (Humphries & Oene & Jager, 2006). The mission statement was created as a result of on-site visits, interviews, and observations, and was reviewed and validated by senior staff members in the floriculture sector, fruits and vegetable sector, and the EHPEA (Helder & Jager, 2006).

Both the mission statement and initiatives set in the agenda were created in hopes of preserving and further supporting the growth of the Ethiopian horticulture sector. This partnership provides a unique opportunity for Ethiopia to be supported and protected monetarily and internationally (Gebreeyesus & Iizuka, 2010). Because the Netherlands is the largest importer of Ethiopian flowers, it is in their best interest to keep this sector growing (Tamrat, 2011).

*Environmental Regulations: International Market Standards*

The Dutch government has also promoted initiatives to help improve the environmental sustainability of the industry through a market-based approach (Helder & Jager, 2006). They increase awareness of the supply chain and help to create cost-effective, sustainable, and socially acceptable forms of production (Helder & Jager, 2006). Consumers have become increasingly concerned with the environmental and social impacts of floriculture production due to media pressure, social pressure, and NGO campaigns (CBI Market Information Database, n.d.; Rikken, 2010). The Netherlands, Supermarkets, and NGOs took initiatives for market labeling and certification programs to address this concern, and these schemes are now institutionalized under the EU (Gebreeyesus & Sonobe, 2012).

Two broad types of international regulatory certification schemes currently exist: the business-to-business certification scheme, a marketing tool between the producer and the EU buyer (Rikken, 2010), and consumer certification schemes, which are labels for environmentally sustainable production that target consumers (CBI Market Information Database, n.d.).

**Business-to-business Certifications.** Business-to-business certifications address the environmental concerns of the industry, but are not marketed to the consumer (CBI Market Information Database, n.d.). The three certification schemes most relevant to Ethiopian floriculture are the International Code of Conduct, Global Good Agricultural Practice (GlobalGAP), and Milieu Project Sierteelt (MPS) (CBI Market Information Database, n.d.).

The International Code of Conduct (ICC) is a general certification scheme developed in 1998 by European Union NGOs and trade unions (CBI Market Information Database, n.d.). It creates standards for sustainable production of cut flowers and better working conditions. This includes giving workers a living wage, banning child labor, allowing work unions, creating health and safety standards, and reducing pesticide use (CBI Market Information Database, n.d.). The standards created in the ICC are integrated into other EU certification programs (CBI Market Information Database, n.d.).
In 2003, GlobalGAP was created by a coalition of large European supermarket chains (Rikken, 2010). It creates voluntary standards for a wide range of products such as fruits and vegetables, flowers and ornamentals, and coffee and tea (Gebreeyesus & Sonobe, 2012). This certification program includes sustainability values, but is relatively undeveloped in the flower market (CBI Market Information Database, n.d.).

In 1995, the Milieu Project Sierteelt (MPS), or “Floriculture Environmental Project” was created by the Netherlands to encompass food safety, labor, and environmental concerns while offering products and services that relate to the environment, quality assurance, and social aspects at a national and international level (Rikken, 2010). This allows horticulture companies to profile themselves as socially responsible firms for their customers, the government and society” (MPS, 2012). Although this program was established in the Netherlands, it is well-known worldwide. The Dutch promote this certification because it fosters environmental and social sustainability as well as creates financial advantages for complying companies (CBI Market Information Database, n.d.).

Within MPS, there are many different certification schemes. MPS-ABC is the environmental certification with three qualifications: A, B, and C, with A being the most environmentally-friendly cultivation (CBI Market Information Database, n.d.). These certifications are awarded based on the use of pesticides, fertilizers, and energy (MPS, 2012). To date, fifteen Ethiopian floriculture companies have reached the MPS-A level of certification (MPS, 2012). MPS-GAP is a program of certification based on the requirements of retailers. This is the equivalent of the GlobalGAP program (Rikken, 2010). MPS-Socially Qualified (MPS-SQ) is a social certification program that requires good working conditions for workers (MPS, 2012; CBI Market Information Database, n.d.). MPS-Quality is the certification where producers assure consistent quality of their products to their buyers (CBI Market Information Database, n.d.). Finally, once a grower meets all of the certification standards above, they receive the MPS-Florimark Production certification. This is the top sustainability and quality level a floriculture producer can attain (MPS, 2012).

Consumer Labeling Schemes. A second international source of environmental regulation of the floriculture sector is a consumer-labeling scheme, used to inform consumers about the production and source of the flowers they purchase (Rikken, 2010). These labels are printed on the product packaging to inform consumers (CBI Market Information Database, n.d.). The three major flower labels are the Fair Flowers Fair Plants (FFP) label, Flower Label Program (FLP), and the Fairtrade Labeling Organization, Max Havelaar (FLO) label (Rikken, 2010).
The Fair Flowers Fair Plants (FFFP) is an environmental and social labeling scheme that is based on both the ICC and the MPS-A (Rikken, 2010). The goal of this label is to create a uniform global standard for the floriculture industry to regulate pesticide use, energy use, and working standards (CBI Market Information Database, n.d.). This consumer label requires companies to meet the MPS-SQ and the MPS-A, and if the company complies with both, a FFFP label is attached to their product to guarantee a high level of environmental and social standards (Fair Flowers Fair Plants, n.d.; Rikken, 2010). The FFFP requires an initial audit of the company, and then regular reporting to ensure that they are meeting the criteria (Fair Flowers Fair Plants, n.d.).

The Flower Label Program (FLP) is a labeling scheme that was created in 1996, but has still not been fully established in the floriculture market (Rikken, 2010). Only 3% of the cut flower market is FLP-certified (CBI Market Information Database, n.d.). Although this number is low, this labeling scheme is successful in creating social standards based on the ICC as well as environmental standards (CBI Market Information Database, n.d.). The companies that follow the FLP are able to sell their products with the FLP label (Rikken, 2010).

The final labeling program that applies to the floriculture industry is the Fairtrade Labeling Organization, Max Havelaar, (FLO), which was created in 1997 (Rikken, 2010). This label system creates social ‘fairtrade’ standards. This mostly involves protecting and benefitting workers by certifying that farms have good and safe working conditions and workers receive decent wages (Rikken, 2010). Environmental standards of this fair trade label are much less specific (CBI Market Information Database, n.d.). Importers must pay a 10% fair price premium on top of the export price for this FLO (CBI Market Information Database, n.d.).

These marketing schemes are all still young for the floriculture industry. A recent study showed that only 10% of flower consumers are aware that sustainable flowers are sold in shops, and few know how to recognize sustainable grown flowers or know where to buy such a product (Rikken, 2010). Most social and environmental standards of the sector are also not communicated to consumers. The most prominent certification labels, MPS and GlobalGAP are not communicated at all, while the FLO, FLP, and FFFP are communicated but are both less rigorous and less well known (Rikken, 2010). In some cases products with the FLO, FLP, and FFFP certification do not necessarily reach the store carrying the label (Rikken, 2010).

Furthermore, the pricing schemes of these certifications are not representative of the label or certification. Certified and labeled products, other than FLO, are priced the same as regular products (Rikken, 2010). This is because the labeling organizations want to make them equally accessible to consumers (Rikken, 2010).
Setting standards for sustainable flower cultivation is a domain that is still under development and review. Several countries have set standards for flowers such as the MPS, ICC, and GlobalGAP, but these have been set primarily for business-to-business use, meaning that the certification does not reach the consumer (Rikken, 2010).

**Industry-based Self-Regulation**

In response to the development of standards and labels, many flower export groups have taken initiatives to develop Codes of Practice addressing market requirements on sustainable standards (EHPEA, 2011). In Ethiopia, the Ethiopian Horticulture Producer Exporters Association was established in 2002 to both promote the expansion of the horticulture sector as well as address the environmental sustainability of the sector (EHPEA, 2012).

*Growth and Investment: EHPEA History and Background*

The EHPEA is a non-profit and non-governmental organization made up of 78 members with a mission to promote and safeguard the sustainable competitive position of the Ethiopian horticulture sector within the global market (EHPEA, 2012). The EHPEA has a number of strategic activities, which include representing the sector, facilitating market access and linkage, supporting the implementation of the responsible production practices that protect employees and the environment, organizing, supporting, and delivering capacity-building activities for members, and forming partnerships and networks with stakeholders. (EHPEA, 2012). Currently 90% of the sector companies are members of the EHPEA, and the organization hopes that in the future the other 10% will become members. The benefits from doing so include ease in negotiation with the government, representation in the global market, and technical assistance (T. Abebe, personal communication, October 31st, 2012). The member companies are clustered in several towns surrounding Addis Ababa as well as in the Rift Valley (Figure 7).

Businesses engaged in the production of flowers, fruit, and vegetables make up the EHPEA. Membership is open to anyone, and the only criterion is that the business has to be a producer and exporter (T. Abebe, personal communication, October 31st, 2012). Most businesses approach the EHPEA about membership and hear about it from embassies or the EHPEA website (T. Abebe, personal communication, October 31st, 2012).
Figure 7. Location of EHPEA member floriculture companies (EHPEA, 2012).
As the EHPEA grows, they are increasingly concerned with the industry’s impact on the environment. Mr. Abebe noted in an interview that when spraying chemicals, only 1-3% are released into the open air. Recently the industry has begun to promote biological controls and the use of beneficial insects in place of using pesticides, both for economic (cost-savings) and environmental (chemical reduction) reasons (T. Abebe, personal communication, October 31st, 2012).

**Environmental Regulation: EHPEA Code of Practice**

The EHPEA Code of Practice is the result of an initiative to introduce a voluntary system of continuous professional and technical development, monitoring, and self-regulation into the sector (EHPEA, 2011). In 2007, the EHPEA took on the challenge of developing and managing the Code of Practice for the export flower sector in Ethiopia. In developing the Code, the association considered the industry’s responsibility to implement sustainable practices, create safe working conditions and safeguard employees, protect the local economy, remain competitive in the international market place, and implement good agricultural practices. Individuals from the private sector, civil society, and the EHPEA developed the Code. The association focused on analyzing existing market labels and codes relating to sustainable flower production, reviewing relevant Ethiopian legislation regarding sustainable management, evaluating other countries experience with implementing Codes, and holding farmer and stakeholder workshops to define the methodology for implementation and management of the Code (EHPEA, 2011).

The EHPEA Code of Practice creates a basic outline for sustainable flower production within the Ethiopian context. Figure 8 below shows the framework for sustainable development in the floriculture sector, recognizing the various groups involved.

![Figure 8. Framework for sustainable development of the Ethiopian floriculture sector (EHPEA, 2011).](image)

To be a member of the EHPEA, farmers must comply to the Code of Practice and strive to maintain consumer confidence in the floriculture sector. They must also minimize negative impacts on the environment, conserve nature and wildlife, implement pest management, use natural...
resources efficiently, take a responsible attitude towards worker and consumer health, provide appropriate working conditions, and respect the local community (EHPEA, 2011).

Farms receive their Code Accreditation through verification from a reputable verification body approved by the EHPEA. A farm seeking accreditation must provide relevant and verifiable evidence of compliance with the requirements of the Code level for which they are seeking accreditation. Each farm is audited annually by an external accredited entity and based on the results of the audit, the external entity will issue a certificate of accreditation or will advise the EHPEA that the farm is not fully compliant. The EHPEA works with all auditors and stakeholders to ensure that a uniform standard of auditing is implemented. Additionally, all auditors are selected and appointed by the EHPEA to ensure the consistency and fairness of audits. Each farm is responsible for applying and paying for the audit service on an annual basis, and once the application is processed the audit is conducted. All criteria are audited thoroughly and are graded on a scale. Once the audit is complete, the farm receives a written copy of the audit report and the decision of whether the farm meets the standards (EHPEA, 2011).

There are three levels of the Code of Practice: the Bronze, Silver, and Gold. Figure 9 depicts specific requirements for each level of the Code of Practice. To become a member of the EHPEA, a company must comply with the Bronze level Code of Practice (T. Abebe, personal communication, October 31st, 2012). In 2011, the Ethiopian government made the Bronze level mandatory by law for all floriculture companies in Ethiopia (Ethiopian Flower Export, 2011; T. Abebe, personal communication, October 31st, 2012). The Code seeks to compliment the Laws of Ethiopia but does not substitute for the law (EHPEA, 2011).

In an interview with Mr. Abebe from the EHPEA, he noted that a few companies have recently made the Silver Level, which is very promising for the EHPEA as a whole. The Silver Level sets internationally recognized standards, such as the MPS, for good agricultural practices, protection of the environment, and responsible employment practices (Rikken, 2010). The Gold Level sets high standards and challenges the farm to aim beyond sector benchmarks. Farms at the Gold Level will be required to engage in corporate social responsibility, conservation, product quality management, and sector development into their business (EHPEA, 2011).
When a company complies with the Code and continues to strive to reach for the Silver and Gold levels, it shows not only respect for the environment, but also a commitment to the long-term development of Ethiopia (T. Abebe, personal communication, October 31st, 2012). Figure 10 depicts that a company is proactive when they move from the Bronze level to the Silver and Gold levels of the Code of Practice.
The EHPEA seeks to continue to encourage further development of the Code of Practice as well as facilitate capacity-building programs to help farmers comply with the Code. In the future, the EHPEA is committed to supporting the implementation of the Code, achieving international recognition, evaluating audit services, and organizing training by EHPEA and specialists for stakeholders. The EHPEA also continues to work toward establishing a positive relationship with the Ethiopian government to communicate and collaborate on enforcing the Bronze level Code of Practice (EHPEA, 2011).

Discussion

The primary goal of national, international, and industry actors involved in Ethiopian floriculture today is to promote the growth of the floriculture industry. While there is a strong emphasis on growth, each actor has a vested interest in the environmental sustainability of the sector. The Ethiopian government has created many environmentally focused laws, and recognize that natural resources are at the basis of the economy (Environmental Policy of Ethiopia, 1990). The international actors in the floriculture industry have also created market standards, certifications, and labels to regulate the environmental implications through a market-based approach. Finally, the EHPEA Code of Practice addresses the environmental concerns of the floriculture industry which helps to promote sustainable production. Although each level of regulation focuses on the environment, each actor has different strengths in making the floriculture industry sustainable, and when these different regulatory levels collaborate, overall environmental sustainability may be achieved for the floriculture industry in Ethiopia.

State-based Regulation: Ethiopian Government

The Ethiopian government hopes to expand its production of flowers so that they can play a more pivotal role in the global market (T. Abebe, personal communication, October 31, 2012). Yet, the
State has a vested interest in protecting the environment, and through the creation of the Environmental Policy of Ethiopia, the state hopes to

“improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs” (Edwards, 2010).

The government created protection policies and laws, and are additionally required to look at the impact of development projects on society and the environment through EIAs (Damtie & Bayou, 2008; Assefa, 2008). Through the sustainable management of environment and natural resources, the Ethiopian Government hopes social and economic conditions will greatly improve.

While the Ethiopian Government has made a concerted effort to protect the environment, an EIA was not completed regarding the floriculture industry. Furthermore the Ethiopian Government has not made a law that directly regulates the floriculture industry, but they have created laws and conducted EIAs that monitor chemical inputs. For example, pesticides are regulated under the Pesticide Registration and Control Proclamation 674/2010, which gives the Ministry the power to register pesticides for use and regulates their production and disposal (Federal Environmental Protection Authority, 2010b; Federal Democratic Republic of Ethiopia, 2010). Fertilizers are not regulated by a specific law, but the Government conducted an EIA to monitor their use (Federal Environmental Protection Authority, 2010a). The pesticide and fertilizer residue that collects in the water ways is regulated by the Water Resources Management Policy, ratified in 1999 (The Federal Democratic Republic of Ethiopia, 1999).

The greatest strength of the Ethiopian Government is its potential to enforce more stringent regulations, which could lead to multiple benefits. By regulating pesticides and fertilizers, water quality is inherently regulated. Collaboration between the Ethiopian Government and the EHPEA would be the most effective way to facilitate this regulation. A partnership has already begun to form between these two groups. The Bronze level Code of Conduct, initially formulated by the EHPEA, has become the law of the land in Ethiopia (T. Abebe, personal communication, October 31, 2012; Ethiopian Flower Export, 2011). The EHPEA encourages members to reach higher compliance levels of the Code of Conduct, and if the Government showed support for this goal, the industry could attain higher level of sustainability.

**International Regulation: Ethiopian-Netherlands Partnership**

Because the industry relies on the international market for investment and exportation, there is an inherent need for collaboration between actors in the floriculture industry and actors abroad. The Netherlands has a vested economic interest in Ethiopia and therefore is committed to preserving and promoting the sector. The partnership emphasizes the importance of both environmentally and socially friendly production as well as positive economic development (Helder & Jager, 2006).
In order for the sector to grow economically, the Netherlands recognizes that the sector must become more sustainable in its practices. The Netherlands has promoted environmental standards through the creation of certification programs and market labels for the industry (Rikken, 2010). These labels focus on environmentally and socially friendly production in the floriculture industry (CBI Market Information Database, n.d.).

The strength of the international regulatory system is that it has served as a safety net for the sector, both providing monetary support and a stable outlet for Ethiopian flower products. As consumer awareness around sustainable practices increases, it becomes ideal to start promoting and advertising certification and market labels at the consumer level. Currently only 10% of consumers are aware that sustainable flowers are sold in shops, and few know how to recognize sustainably grown flowers or know where to buy such a product (Rikken, 2010). It is imperative that these labels are communicated effectively in order to preserve this partnership, promote economic growth and environmental sustainability of the sector.

One of the ways that consumers could more easily recognize sustainable products is if international groups interact with the EHPEA and standardize market labels. The Silver level Code of Conduct is currently the equivalent of receiving an MPS certification (T. Abebe, personal communication, October 31, 2012), but if these labels were one in the same it would be easier for producers, importers, and consumers to understand the production system of the flower. For example, the creation of a “Gold Seal” by the EHPEA for the products of companies that reach the Gold level Code of Practice would indicate to importers and consumers that this product is sustainably grown at the Gold level. Furthermore, currently certified or labeled flowers, with the exception of the Fairtrade Labelling Organization Max Havelaar, do not receive higher prices in the supermarket, and therefore may be seen as a burden to Ethiopian growers (Rikken, 2010). If these growers saw the financial benefits from receiving higher prices for their goods, they would be more eager to attain certification levels in environmental sustainability.

Industry-based Self-Regulation: EHPEA

The rapid growth of the EHPEA shows the growing interest in the association and its value (EHPEA, 2012; T. Abebe personal communication, October 31, 2012). The EHPEA has prioritized the protection of the environment while simultaneously promoting sector growth and membership (T. Abebe personal communication, October 31, 2012). Because there is such a direct influence of the EHPEA on members, these member companies will have the most direct impact on preserving the environment. The EHPEA Code of Conduct promotes environmental sustainability in the sector through the Bronze, Silver, and Gold levels (EHPEA, 2011). While the Bronze level is required by law, the EHPEA hopes that more companies will make efforts to reach higher standards; thus far, few companies have reached the Silver standard, and no companies to date have reached the Gold standard.
Due to the EHPEA's direct connections with member companies, they have the most potential to implement successful and effective industry standards. Encouraging companies to reach the Silver and Gold standards will provide positive examples for other companies and encourage them to also reach the higher levels.

**Policy Recommendations**

This research has revealed a number of opportunities to decrease the negative environmental impacts and increase the benefits of floriculture in Ethiopia. Each level of governmental regulation offers specific strengths to help address the environmental sustainability of the floriculture industry.

The following three policy recommendations emerge from this research:

- The Ethiopian government should consider requiring EIAs on incoming floriculture companies to more deeply understand the environmental degradation that has happened over the past ten years and to prevent further degradation in the future.

- Collaboration and communication amongst the EHPEA, the Ethiopian government, and international actors has the potential to lead to more effective regulation and industry self-governance to increase environmental sustainability.

- The EHPEA should consider developing a Gold Seal, which companies will receive upon reaching the Gold level Code of Conduct, which will be used to inform international consumers of the most sustainably-produced flower and therefore provide incentive for companies to reach the Gold Level.
Works Cited


Chapter 2 Appendices

Appendix 2A

Transcript of interview with Ato Tsegaye Abebe

October 31, 2012

How many members of EHPEA?

Currently 90% of the sector companies are members. In the future, non-members will become members. Right now there are 78 members.

Are most members large producers with many greenhouses, or is it sometimes a single producer with a single facility?

Members include producers of flower, fruit, and vegetables. 90% of members are flower growers, not only greenhouse growers, but also flowers that are grown outside during the summer.

On the second question, when companies become members of the EHPEA, is that because they ask you, or do you try to go out and recruit members?

Most of the time, the new comers come to us for their application to ask for membership.

Do they hear about you through a website or thorough word of mouth? How do they find out about the EHPEA?

They come and ask about memberships or from embassies of foreign countries. Everyone knows already because the association has been active for 10 years.

You mentioned embassies, are most of the members overseas companies? What is the divide between the number of Ethiopian companies versus the number of foreign companies?

Membership is open for anyone. The only criteria is you have to be a producer and exporter. Not only a producer, or not only a company that is buying and selling. Our members are only export producers.

Can you tell me a little bit about the membership process? How do you become a member if you want to?

You apply to the association, and then the Executive Board looks at your application, and checks if you are a new investor in the country or if you are already invested. You must have structures on the ground, not only land.

Do producers see membership as something that is difficult to attain?

No. You just have to meet the criteria, have a license to be invested in the sector, and then you are a member. It is so easy.

What do companies see as the benefit to them to become members to EHPEA, why do they do it?

Any problems you have, or anything individually, most of the time it is difficult. When you are a group, it is easy to negotiate with the government, get representation, or technical assistance. The government prefers an organized group!
Does that mean that EHPEA has an organized lobby group? Are there lawyers that work for EHPEA, are there designated people that talk to the EPA?

The structure is the assembly, under that is the board, under the board is the office of 16-18 full time workers. The departments are the training department, finance and administration, small vegetable project, and marketing. Mainly the training department is focused on the Code, especially the implementation of the code of practice, where everyone is expected to meet the minimum level of the code, and also the training department helps on the higher certificate level.

On the other side, we are doing a lot of promoting market products and market diversification. We promote to different countries. For example, we were in the USA last month. We promoted in D.C. and in Newark International Flower Fair.

We’ve already started talking about the Code of Conduct and certification program, but before diving into that, I did want to know, what from your perspective and EHPEAs perspective are the biggest environmental implications of floriculture in Ethiopia?

It is not a really big development; it is a small development, which has its own environmental impact. The main issue is how to minimize the environmental impact.

For the production of flowers, we are producing in a greenhouse, which protects the environment. When we are spraying the chemicals, there may be 1-3% release in the environmental impact, but we are always comparing advantage to the economy and the country and the advantage also to the culture. When you compare this, there is really a big advantage to running the floriculture industry in Ethiopia in terms of factors such as employment.

We always want sustainable floriculture industry in Ethiopia. To do that we make it a big priority to protect the environment. If we see anything clearly that is a problem for the environment, we look to minimize it, like collecting empty chemical containers, safe conditions for the workers.

For example in the industry, we are promoting biological controls and promoting beneficial insects. This is when you use good insects to eat the other insects. We mainly need to deal with the spider mites in the flower industry. For spider mites we spray chemicals, but now almost half of the production in Ethiopia is under biological controls. I was the first one to start in 2007, today the whole farm EthioFlora sprays no chemicals. It is all under biological control. I only spray for fungal diseases.

When you say your farm do you mean EthioFlora?

I have other farms: EthioHighlandFlora, now EthioFlora only does food and vegetables.

What are the biological control insects?

We import them from a Dutch company, and now we already have attempted to produce these insects ourselves. We have looked for some support from the company encouraging research initiatives. We are seeking to expand and provide to sell. It is a $40,000-$50,000 start-up project. There are many companies researching and we are looking for companies to help us with this.

Where is EthioFlora?

It is about 59 km, which is about 45 minutes from Addis Ababa.

When producers have to sign on to the bronze code, what does this mean? First, what do they have to do, and second who checks up on them to make sure they are actually doing it? And if anyone breaks the rules what happens to them?

The code of practice has become the law of the country. Parliament, about 6 months ago, made the code of practice the law of the land. Everyone should apply the code of practice. It was originally a private code, but the government is very
supportive of environmental issues, so that is why the code is now binding and implemented on a larger scale. It is used because we want to respect the environment.

On the other side, so far the companies are audited by external auditors. Farm has its own auditor, an internal auditor, then an EHPEA auditor goes and checks the farm and goes through a check list. When they feel like the farm is ready to be audited by the external auditor, then the Dutch company auditor comes to audit. Then they either pass the farm, or give them 1-2 months to amend and then they are re-audited again.

And that’s the process for the bronze standard? Or is the process the same for bronze, silver, and gold?

It is the same for every level. When you want to go for the silver, you must be re-audited which is communicated in the code.

What is EthioHighlandFlora rated now?

We have completed the bronze code, and it is in the next few months, it will qualify for silver.

Has anyone in the country made silver or gold yet?
SIlver yes, other companies have made silver, two months maximum from now.

What does the actual award entail? Do you get a certificate? Do you get a label? Do you get a price premium? What do you get for complying with the code?

When you comply with the code, this shows respect for the company that they are producing low impact. They are not only showing respect for the environment, but they are also showing commitment to long-term development of Ethiopia. On the other side, the importing companies already know about this code of practice. They ask you, do you have the code of practice certificate? And even when you qualify for silver, then you automatically qualify to get different certificates. When you comply for silver, it is the equivalent to MPS, this is automatic. It is an internationally recognized certification, and we are promoting it also. We use it at the market level, and it is much to the advantage. People are encouraged to go for it anyways even if it is a market label or not, because it is the rule of the land to respect the code of bronze level of practice (the minimum).

Are they going to bring this minimum standard up to silver eventually? Or is the minimum likely to stay the same?

The minimum requirement of the government is the bronze. The government, and the Horticulture Development Agency, is starting to encourage reaching the silver level of the code by giving tax incentives like 6 month or 1 year tax breaks. This will help people go for the code.

Do you think there’s greater potential for the code levels to be used in marketing? For example in the U.S. the fair trade label tends to increase marketing. People tend to pay more for fair trade. Do you think there’s an opportunity for consumers here to start recognizing a gold-certified flower?

Now it is recognized in Europe. EHPEA is actively promoting it. We are working with other companies to integrate. The code of practice is part of Global Life and it is interrelated with other labels, so it is promoted indirectly.

How and why did you become personally involved in floriculture? And why did you decide to lead the EHPEA?

I want to do something like the Kenyans are doing. I want to do something different from what everyone is doing, and once you are in you try to educate.
My family background is agriculture. My father is a farmer/pastoralist. I studied agriculture at Addis Ababa University.
There is an article published about me in hortibiz.com in November 2011. It is about 2 to 3 pages on my background and my big contribution to floriculture and will be included in their 100 year celebration book.

Appendix 2B

Email Conversations with Amare Haile from HoAREC

October 3, 2012

My name is Nina Hatch. My colleague Lindley Wells and I are working with Professor Travis Reynolds of the Colby College Environmental Studies Program to study the environmental and social impacts of the floriculture industry in Ethiopia. Our hope is to identify how national policies and private industry associations might increase the benefits and decrease the negative effects of floriculture in Ethiopia.

We are especially interested in learning more about the environmental impact of floriculture on the Rift Valley lake system. Do you have data on water quality and chemical concentrations in the Rift Valley lakes? We are currently focusing on the lakes near Debre Zeyit, Ziway, Koka, and Meki, including: Bishoftu Lake, Chelekleka Lake, Hora Lake, Bishoftu Guda Lake, Kiroftu Lake, Ziway Lake Langano Lake, Abijata Lake, Shala Lake, and Koka Lake.

We are also looking for information on local community responses to the rapid growth of the floriculture industry. Are you familiar with any community leaders or organizations we could contact who have experience with the industry? Are there any strongly pro- or strongly anti-floriculture groups we might be able to speak with?

Any information you have regarding the above topics would be much appreciated.

October 9, 2012

Sorry for my late reply, I have been out of office for field visit for the last few days. It is good that you are interested in studying on most of the Central Rift Valley Lakes (Ziway, Abijata, Shala, Langano etc.). Different groups have been working on the issue to reduce the negative effect of the horticulture industry, especial to reduce the effect that can be develop on lake Ziway water quality. With this regard Intermon Oxfam (IO) in collaboration with the Central Rift Valley Working Group conducted a research in 2009/10 on the environmental and social impacts of the floriculture industry in Ziway and notional level. Similar studies undertaken on water quality monitoring (specifically pesticide analyses) by Wageningen University and research (WUR) in collaboration with Horn of Africa Regional Environment Centre/Network (HoA-REC/N) in the year 2009/10. They have also tried to lobby the flower farmers and influence the responsible government agencies. Intermon Oxfam is currently phasing out from the region, but HoAREC/N with all its active members in the region planned to work effectively in this issues and related matters for the next few years. The Horticulture Producers and Exporter Association also working on supporting policy makers and influencing flower growers in developing and formulating a code of conduct to bring environmental friendly development in the sector. We (HoAREC) have started a regular water quality monitoring activities together with the local institutions (fishery research institute and soil research laboratory). For the past two years we have been collecting samples from 10 selected sites of Lake Ziway to undertake different analysis (Monthly measurement of Ph and EC, bimonthly analysis for chemical and physical parameters and quarterly analysis for bi-indicators). I hope this will help you, but the above researches done on pesticide by the two organization was shared only the details and some major findings of the research to the members of the working group.

Appendix 2C

Email to Huib Hengsdijk at Wageningen University
My name is Lindley Wells and I am student from the USA. I am currently writing a paper on the impacts of the floriculture industry in Ethiopia. I have been in contact with a man named Amare Hailu who works with the organization HoAREC. Amare indicated that you all at Wageningen have conducted some studies on water quality monitoring (specifically pesticide analyses) in collaboration with Horn of Africa Regional Environment Centre/Network (HoA-REC/N) in the year 2009/10. Additionally, he mentioned that you have tried to lobby the flower farmers and influence the responsible government agencies.

I was wondering if you could let me know where I could access your water quality data or if I cannot access it, if you could send it to me. I am also curious about your involvement with floriculture and your role in lobbying the flower farms to try and influence the government. Have your efforts been successful?

Thanks so much for your time, I look forward to hearing from you
Lindley Wells

Attached you find:
1. A report from colleagues on pesticide measurements in the Central Rift Valley including measurements nearby a flower farm.
2. A report from an NGO on the flower industry in Ethiopia, which I have critically commented as I think that various parts were not correct and conclusions not in line with the content of the report.

I have further no involvement with the floriculture sector. I have been working in the Central Rift Valley as project leader for different projects (see www.crv.wur.nl) and only one sub-project was related to the flower industry in Ziway. The spinoff from that sub-project is that colleagues from DLG have designed an artificial wetland for the greenhouses of Sher in Ziway to purify waste water. This is some kind of test and demo facility to assess the proof of principle of the design. I do not know the status of this project at this stage as I am no longer involved.

Last year I have tried to organize a broad policy dialogue on water-related issues in the Central Rift Valley but my counterpart HoAREC was not able to get the proper people around the table. As you will understand from the publications, flower farms in the Central Rift Valley are only part of the discussion, although they often attract most attention.

One last remark, measurements of water quality are rare in Ethiopia as reliable laboratories that can detect low concentrations of pesticide residues are not available.