

# Safety of Supply Chain of Kenya's Cut Flower Industry. Case of Kongoni River Farm

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The article examines a logistics chain of Kenya cut flower industry with special emphasis on safety and security issues. The robust growth in this sector of Kenyan economy, important for the EU market, is endangered both because of security problems resulting from Kenya's domestic political situation, imported terrorism from neighbouring Somalia, and underdevelopment of Kenyan transportation network. The author shows how Kenyan flower farmers try to overcome those obstacles. The research is based on field visit to Kongoni River Farm in central Kenya.

**Keywords:** Supply chain, Kenya, cut flower farms, security, safety, horticulture logistics.

## 1. INTRODUCTION: WORLD FLOWER INDUSTRY

Until the 1960s the production of cut flowers for European consumers was located mostly in the Netherlands. After decolonization the production of commercially grown cut flowers has been placed in economically less developed countries, e.g. Colombia, Ecuador, the Gambia, India, Kenya, Uganda and Zimbabwe.

World Bank Structural Adjustment Programmes in the 1980s put pressure on developing countries to produce high value export to generate needed foreign exchange. European markets were opened for horticulture exports from those countries in the 1990s. In the same decade, the air transportation costs declined, which caused a dynamic growth in this sector.

Outsourcing the production of flowers from Western Europe lowered their price for businesses and European consumers but also created a set of new problems. The questions of work standards, workers' health and safety, environmental impact and sustainability have been raised.

Most of them take under consideration safety and health of human and environment. The interest in these issues created the concept of "political ecology". Political ecology and globalization are under a big discussion to understand how network, people, organisations and places are hooked into

transnational relationship between global South (producers) and global North (consumers). Fair trade, networks, so-called "ethical trade" and other organic and eco-labelled commodity networks understood as forms of alternative development expand [1].

The development of the flower industry in developing countries is also related to work safety standards and the environment. The European Union has set very strict standards for growing flowers and for the workers. That is why cut flower industry has moved to the developing countries [2].

## 2. KENYAN CUT FLOWER INDUSTRY

Kenyan flower farms are growing in importance, producing 125 tonnes of flowers with estimated worth of US \$531 million in 2014 (according to Kenya Flower Council, an industry organization). 85 percent of cut flowers from Kenya are exported to Europe, and Kenya is the largest exporters of flowers to EU market (31 percent of EU imports)[3]. 2/3 of the flowers from Kenya go to the Netherlands and are re-exported from there to other European countries; 25 percent are sent directly to Germany. The rest is exported via Dubai to various Middle-Eastern customers. Kenya is famous on international markets for its roses – and ¾ of commercially grown flowers in Kenya are roses.

Kenya’s flower industry is the oldest and largest in Africa. Kenya’s involvement in a flower production began in the 1960s, just before country gained its independence from the United Kingdom (1964). It was initiated by Europeans settlers [4], and has benefited from financial and technical assistance from the World Bank and USAID since 1980s. The industry has grown rapidly from 1990s and was supported by government, who wanted to cover the country’s permanent trade deficit – when prices for Kenya’s traditional export commodities, tea and coffee, were falling. Flowers are predominantly cultivated in the vicinity of Lake Naivasha and Thika and around Mount Kenya – in the central highlands (1,500-2000 m. above the sea level), with sunny, warm, but not overly hot weather all year round, with temperature rarely falling below 12°C or rising above 28°C. Over 2,000 hectares of Kenyan land is devoted to the cultivation of cut flowers. Production is dominated by two large farms: Oserian and Sulmac, which occupy around 300 hectares of land, and employ over 5,000 workers each. The structure of Kenyan economics is shown in Fig. 1.

In the 1990s workers had no insurance, they worked without formal employment, without either government or employer-provided healthcare and with pressure to work overtime. Approximately 65 percent of Kenyan flower workers were employed as “casuals”, meaning that they did not receive any benefits and that female workers were likely to be fired when they became pregnant. In addition, casual workers could not join unions, which was the most important reason for the low rate of unionization. In 1999, the Kenya Plantation and Agricultural Workers' Union (KPAWU) had only 3,400 members employed in the cut flower industry [5].

The situation improved markedly in 1999 when Kenya Flower Council was founded, supported by the government and local and international NGOs. KFC created industry standards for responsible flower growing, including “farm management responsibilities and proper documentation”, “crop protection strategy”, “safe use of pesticides”, “application of pesticides and protection of workers”, “transportation, storage and disposal of pesticides” and “protection of the natural

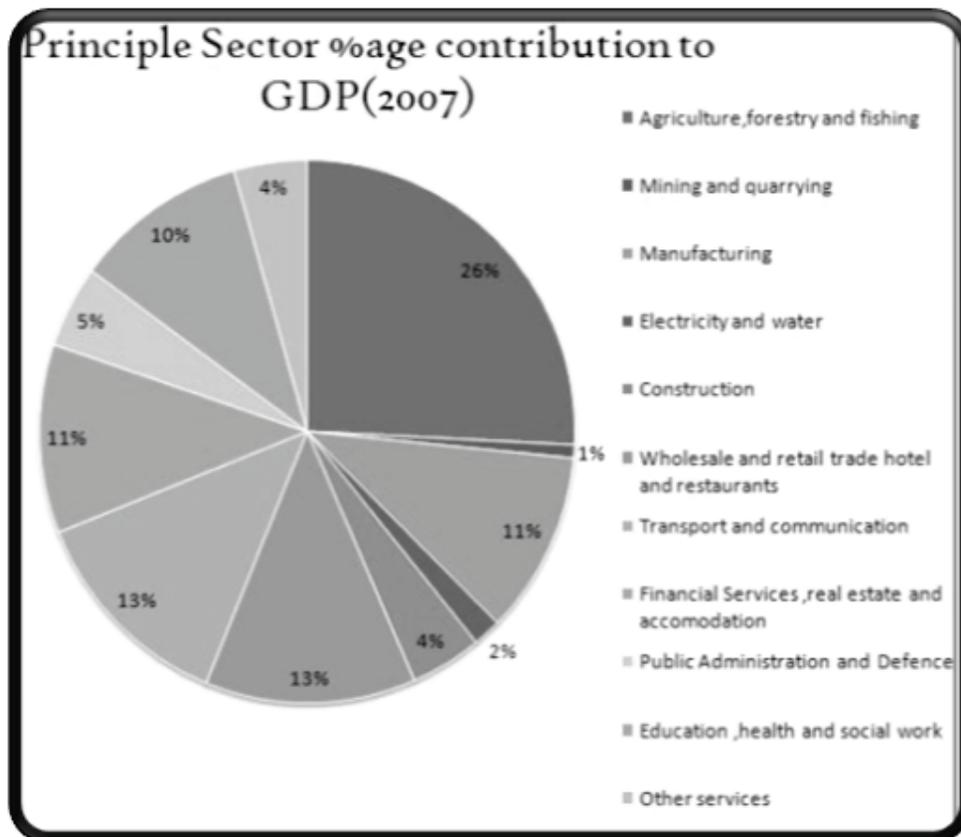


Fig. 1. Kenyan principal sectors of economics [3].

environment” guidance. Under “general workers’ welfare” rules there are 24 clauses concerning pay

and work conditions, including: limitation of the working week to 46 hours (in six days), overtime paid according to ROWA (Kenyan Government Regulations of Wages and Conditions of Employment Act), elimination of the child labour (under the age of 16) and freedom for all workers to join a trade union [6].

While the managers of the commercial flower farms have found themselves in the position of the law enforcement officers and carers, the majority of workers are constructed to be a passive subjects in the process. Similar organizations in Asia deal with trainings of workers in their rights. According to local NGOs in Kenya, there is still a deep gap between what employees are entitled to, and "how it really is".

### 3. LOGISTICS CHAIN OF CUT FLOWER INDUSTRY

The initial part of supply chain of cut flowers (from a greenhouse to an airport) is composed of 9 parts. Time from cutting the roses to the moment when they reach their destination is 24 hours. This part of the logistic process consists of:

- i. Harvesting in greenhouses. Every 2 months roses are planted (they are cut after 53-55 days of growth on average). Each variety has a separate greenhouse (1 hectare per 1 greenhouse). The main safety problem at this stage of production is pesticide poisoning by inhalation.
- ii. Transport of flowers from greenhouses to the main processing facility.
- iii. Quality control. Each rose is checked for a number of petals, size of petals, and whether the petals are developed according to customer specifications (Russians like big open flowers, people in Dubai and the Netherlands – smaller and closed). Main safety issue: pesticide poisoning by skin.
- iv. Storage in the cold store. Safety issue: working in inappropriate uniforms, in bad conditions.
- v. Cleaning flowers. Roses are racked with spikes and leaves, cut to the appropriate size and selected to customers. Safety issue: pesticides poisoning and spine problems.
- vi. Bunching the flowers (in the cold store): working in inappropriate uniforms, in bad conditions.
- vii. Packing (there is a special vacuuming device for extracting hot air from the flowers). Safety

issue: working in inappropriate clothes in cold temperatures.

- viii. Transport to the airport (Nairobi Kenyatta Airport) in special refrigerated trucks. The way takes about 4 hours. The truck company owners are Dutch or Iranian, never local (farm owners trust foreigners more): still, there is the risk of terrorism attacks, crime, traffic accidents. The farm owners delegate these risk on truck company: if the transport is lost, the company reimburses the cost of lost flowers. The real cost of this "insurance policy" is included in the higher than average transportation price.
- ix. Boxes with roses are packed onto planes and transported to the EU, Russia or Dubai.

### 4. SAFETY AND SECURITY ISSUES IN THE KENYAN CUT FLOWER INDUSTRY

Work-related risks are associated with the three main reasons: chemical poisoning, low working temperature and dust pollution of operating environment, as well as accidents during transport (also associated with armed attacks).

The first commonly mentioned problem are pesticides. Chemical use and labour laws in Kenya are less strict than those defined in the EU. There is no need to have enough clean water, particularly for people working with the chemicals. No need for proper clothes for people working in cold stores. There is not enough extended breaks while doing standing work (compared to the EU norms). It is commonly understood that Kenya Flower Council and their code of practice do not always translate immediately into acceptable labour conditions.

International environmental and worker advocacy groups charge African floriculture industry with exposing labourers to dangerous pesticides, with failing to provide health safeguards and with damaging the environment from overuse of natural resources. In the case of this article, human safety is our concern. The concern about pesticides arises because they can produce cancer, birth defects and other reproductive illnesses and neurologic diseases in humans. Workers may be exposed to these pesticides in a variety of ways. Workers who transplant, prune, cut and pack flowers without protective garb may absorb pesticides through their skin. Dusting, spraying and other application of chemicals in closed spaces such a greenhouses

may make workers inhale pesticides. In Costa Rican flower industry it is said that "over 50% of ex-farm workers reported at least one of the symptoms of pesticide poisoning" [7]. In Tanzania pesticide poisoning was common. In the year 2010 International Labour Organisation reported shortage or lack of material safety data sheets and instruction manuals, workers' ignorance of the identity and hazards of chemicals, improper storage of chemicals, lack of emergency treatment for accidental poisoning, no training for operators to recognize early signs of accidental poisoning, improper use and misuse of personal protective equipment (when provided) and inadequate disposal of waste [8].

Another problem they face is that farm workers work in very low temperatures. Those who are engaged in the work of the already truncated flowers spend most of their working hours in cold storages. All employees use the same clothes, regardless of the place of work on the farm, and are entitled to one break - for lunch. Working in the cold without proper clothing ends up cooling down the body and causes many health problems.

Work in greenhouses means not only inhalation of chemicals, but also breathing and eyes problems caused by dust.

Those who do not work directly with the spray of chemicals, work preparing roses for shipment. It is work in a standing position, a continuous stoop. Apart from the risk of chemicals penetrating the skin, this work also causes problems with the spine.

There is also a rising problem of security in the flower growing regions of Kenya. From the north of the country more and more Islamic extremists are coming to Kenya. Since 2012 more and more terrorist attacks have struck at strategic points of the country. According to official government statistics 19 terrorist attacks happened in the country in 2014. In November 2014 a group of armed Islamic militants killed almost 40 non-Muslim workers in the quarry not far from the flower growing regions. There were no attacks on flower farms, but they may become a likely target (because majority of them is Western owned). Armed crime is also very common in Kenya.

All commercial farms spent significant (but undisclosed) sums on security guards and electric fences (sometimes double electric fences). Farms are systematically patrolled by guards armed with machine guns. Guard dogs are also a common sight.

The critical stage of the cut flower supply chain is the transportation from the farm to the airport in Nairobi, the capital city. According to WHO, Kenyan roads have one of the highest rate of fatal accidents in the world (between 3,000 and 13,000 people are killed on the roads every year, with large proportion of accidents probably unreported). Accidents and armed hijackings of the cars are common, and traffic jams in Nairobi are both unpredictable and difficult to avoid. In the normal conditions it takes from 3 to 5 hours of driving for the truck to travel between a farm and the airport, but it can also take more than 12 hours. Very strict security controls at the airport gates also causes delays.

## 5. KONGONI RIVER FARM

It is very difficult to gain entry into a cut flower farm. There are more than hundred of these farms in Kenya – huge areas, thousands of hectares, surrounded by walls, topped with barbed wire electric fences. New farms are started almost every week – see Fig. 2.

Visitors are not welcome at all. After long negotiations with the owners I was able to visit one of the farms in December 2014, officially as a anthropologist who was accompanied by a sexual health educator for workers. Kongoni River Farm was established in 2004 and belongs to a company named Vegpro Group (founded in 1979). The company is a major supplier of flowers, premium and prepared vegetables for export to Europe. Kongoni River Farm is a rose farm in Kenya, East Africa in Timau (small town 20km from Nyanuki, Rift Valley Province). It is situated on the slopes of Mount Kenya. The farm itself is located at 2,100 m. above the sea level, on the equator.

The farmland comprises 80 hectares of which 27 hectares have been set aside for roses. Water comes from boreholes, as well as from the rainwater reservoir and filtered waste water through wetlands. Currently the farm is growing twelve varieties of roses: Mariyo, Marie-Claire, La Belle, Duet, Aqua, Belle Rose, Red Calypso, Classic Duet, Viva and Valentino.

It isn't a huge farm by Kenyan standards, employing only 500 workers and administrative staff. Workers are local Kenyans from nearby villages, administrators are mostly of Indian descent. The main manager took me for a trip on a farm showing the whole process of preparing cut flowers. I have seen greenhouses, where roses are grown, places where whole fertilizers are kept

(buildings with the signs “life threat”), places where flowers were prepared for export, the cold stores, from where flowers are taken to the airport and sent to their destinations.

People work there for 12 hours a day. They are provided with transport, lunch (rice with chicken) during lunch break and 4 hours a week with medical help. They earn monthly 8,000-10,000KSH (Kenyan shilling, equivalent of US\$100-120). Despite the fact that the work on the farm is very hard and causes many diseases, they claim to be happy to have any formal employment.

work hard, but with earnings, and poverty on their own plot, the choice is actually simple. As someone in the family gets a job on a farm everyone is proud of it. You can even save few money for the future”.

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Fig. 2. General views of the farm [9].

## 6. CONCLUSION

Creating such an efficient organization and transportation network in the poor country with basic infrastructure (roads, electricity, phone network etc.) and moving such delicate goods as flowers many thousands kilometres away to the distant European and Asian markets is a remarkable achievement – and lesson in logistics.

Why do Africans work in the flower industry? Despite the fact that they know what the consequences of working on farms are, although their relatives and friends suffer for life because of pesticide poisoning, with diseased lungs and damaged spines? Amos, one of the farm workers at Kongoni River Farm, told me: “The industry provides job. And here outside the city it is the best job you can get. When you have to choose between

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