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## **Active Participation of Sri Lanka in Global Flower Value Chain: Supply of Leaves to Upstream Chain of the Netherlands**

### **Abstract**

Sri Lanka should raise its concerns on economic diversification since it has produced a limited number of primary exports for more than two decades where those exports are stagnating or declining and currently it has been looking to expand exportation non-conventional agro products including floriculture products. Though current contribution of floriculture industry is less for the national economy, it has identified that there is a great potential in various aspects to increase its contribution. This paper identifies the status of Sri Lanka's floriculture industry, with respect to the global floriculture value chain while using Kenya as a model case, in order to identify the gaps and significantly to identify Sri Lanka's role at value chain which carried within well known Dutch flower industry. Under qualitative research approach, Comprehensive descriptive analysis of Global Value Chain has used for the analysis. This paper finds evidence that Sri Lanka's foliage plays a specific role at Dutch flower industry while supplying cut foliage to Dutch market as one of the main inputs that the Dutch market engage in re-exporting within European Union as final products after value addition. The paper finds that, engage in diversifying products as well as value adding to the existing products at packaging, are effective strategies for product upgrading. Further, this paper reveals that introduction of automation technologies for packing and increase in scale of production are effective strategies for process upgrading while engage in marketing and direct trading, are effective strategies for functional upgrading.

Keywords: Value Chain, floriculture, cut foliage, upgrading, Dutch market

## **Introduction**

Within the recent decades, globalization has influenced economic structures of conventional segments in the world including both manufacturing/production and service sectors. This has prompted international fragmentation of supply chains by specializing in to different products and services within the value chain in different countries of different firms by considering the comparative advantage. This augmentation of vertical chains and its assignment over various nations has prompted an expanding exchange with inputs, intermediate goods, and final products (Kim & Shin, 2002). Globalization and development of global value chains with fast growing economies in developing countries has opened up opportunities to many entrepreneurs to participate in the different value chains in several international markets (Dijk & Trienekens, 2011). Sri Lanka is a developing country, which tries to expand its economy by increasing exportation of agro base products, apparel products, and tourism industry since Sri Lanka's whole economy has based on these three sectors.

The agriculture sector of Sri Lanka contributes about 7% to the national GDP and over 25% of Sri Lankans are employed in the agriculture sector. Sri Lanka's main agro base exportations are mainly centered in to tea, natural rubber, coconut base products and spices. Out of total exportation, tea exports account for about 14% and it is about 60% of total agriculture exports in the country while rubber accounts about 7.5% of total commercial exportation and it is about 32% of total agriculture exports (Central Bank of Sri Lanka, 2017). It has advised to the developing countries for a long time to adopt a diversification strategy into value added non-traditional agriculture exports due to the long-term price decline of traditional agro products (Gebreeyesus & Sonobe, 2012). Sri Lanka must raise its concerns on economic diversification since it has produced a limited number of primary exports for more than two decades where those exports are stagnating or declining (Andrews, et al., 2017). Currently Sri Lankan authorities including export development board is looking

to expand exportation non-conventional agro products like horticultural products, ornamental fish and floricultural products. It has identified that there is an increasing trend in exports for Sri Lankan floricultural products in the global market. Further, floriculture sector generates high net foreign income to the local economy while producing more jobs and entrepreneurial opportunities within rural communities (Sri Lanka Export Development Board, 2019).

According to the Sri Lanka export development board, the floriculture industry in Sri Lanka consists with three main product categories. Those are cut flowers, cut foliage and live plants. However, within the international market, Sri Lanka has identified as a tropical foliage supplier for nearly two decades than a cut flower or live plants supplier. 60% of Sri Lankan exports are bound towards the European market, while Japan, Middle East, USA and Korea as the other key markets. The major market is the Netherlands where more than two third of the production is sent to. Among the total exportation, more than 55% consists with ornamental foliage while 44% consists with live plants and planting materials. Only less than 1% consists with cut flowers as exports (Sri Lanka Export Development Board, 2019). Sri Lanka's horticulture industry comprises of three classes of producers or cultivators as large-scale producers who are export oriented, medium scale growers who are target the local market and small-scale farmers who sell their items to both of the two categories referred above (Dhanasekara, 1998). Most of large-scale business cultivators produce plants in a joint effort with foreign accomplices. These accomplices share technology and much propelled techniques of production are pursued. Further, many of the endeavors are engaged with the production of ornamental foliage plants and not many are associated with the production of cut flowers (Dhanasekara, 1998).

Kenya has identified as a model case for development of floriculture industry in the several developing countries in the world including Ethiopia and Tanzania since it is one of the leading country in the world for flower industry who developed its industry very rapidly.

Further, it is considered that Sri Lanka and Kenya are having some common factors such as preferential geographical and climatic conditions for flower industry, labor and land availability and a developing economy, which mainly based on agriculture like tea industry. Currently cut flower industry is the second largest agricultural export item of Kenya. Kenya has become the largest cut flower supplier to the European market by surpassing Colombia and Israel, which were the largest suppliers early. Most of its production goes to the Netherlands (Dolan, Opondo, & Smith, 2013). With the large scale farms, Kenya cut flower industry has gained the opportunity towards moving up to the value chain by offering value-added production and supplying its products directly to leading supermarket chains.

Both countries' main market destination is the Netherlands where most of the products exported. Further the Netherlands act as the value-adding centre for Kenyan cut flowers by making them into bouquets adding cut foliage, which Sri Lanka exports to the Netherlands according to the primary and secondary data sources of this research. As the world's leading flower market, Holland flower industry plays a major role in the global floriculture value chain. This paper identifies the Sri Lanka's significant role at the upstream value chain, which takes part in the Netherlands other than the primary activities, which takes part within Sri Lanka.

### **Dutch Flower Industry**

The Netherlands act as the leader of cut foliage importation in the European Union as well as in the world and the value of foliage imports to Dutch market were approximately 182 Million Euros in year 2010 according to Burke (2012). Nearly 47% of the total importation is coming from developing countries like Costa Rica, Guatemala, Mexico and India. The remaining bulk of foliage is importing United States and European Countries. However, it has mentioned that approximately 90% of the foliage is re-exporting within European Union.

Kenya is the main cut flower supplier to the Netherlands while Ecuador, Ethiopia, Colombia and Belgium lies almost under an average annual supply of 200 million US Dollars while Kenya has reached its peak of nearly 400 US Dollar millions in 2018 according to the figures of Global Trade Atlas.

The main supplier of cut foliage is United States. Two countries are from Central America (Costa Rica, Guatemala) where tropical climate is prominent and this has considered as a good example for Sri Lanka to reconsider its potentiality as a tropical island in the Indian Ocean with rich bio diversity and significant climatic and geographical features, which are favorable for cut foliage production. Further, since cut foliage considered as one of the input at global value chain of floriculture industry it plays an important role in Dutch market.

### **Objectives and Relevance**

This paper would attain two main research objectives.

1. First objective of this paper is to determine the current status of Sri Lanka's floriculture industry within the global floriculture value chain while identifying the gap between Sri Lanka and Successful cases (Kenya; as a model case) in order to improve the floriculture industry in Sri Lanka.
2. The second objective of this paper is to explore Sri Lanka's specific role at upstream value chain at Dutch flower industry by identifying its indirect involvement in the value chain.

### **Analysis of Global Floriculture Value Chain**

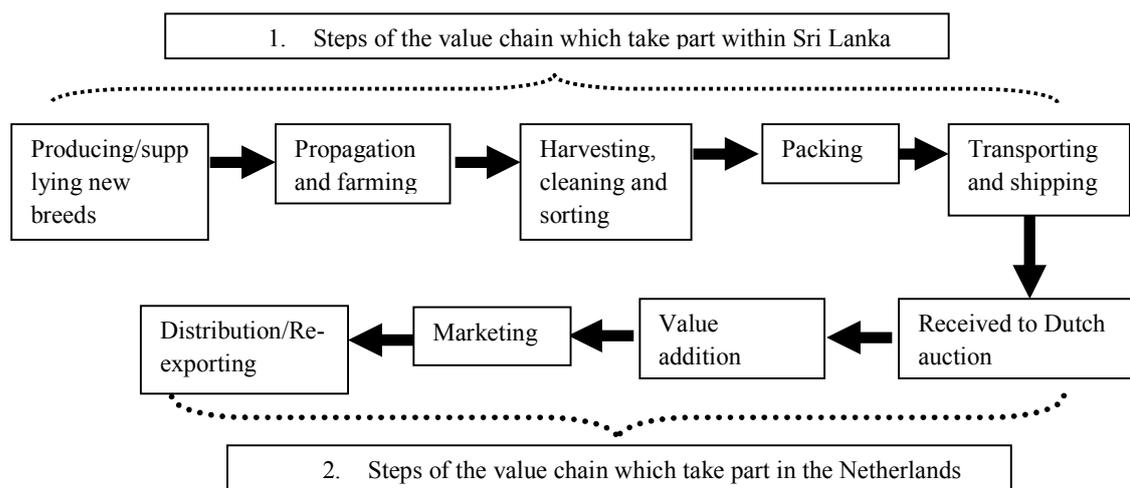
The framework of value chain analysis that has used in this paper as followed.

Comprehensive descriptive analysis of global value chain has used for the analysis. The analysis has covered the two research objectives. As the first part, the different steps of value chain, which undergo within Sri Lanka, have analyzed using the two cases as evidence since the selected two companies are counting as two of the biggest and pioneer firms that are

engage in Dutch floriculture market according to the categorization of “Sri Lanka Export Development Board”.

In order to study the Sri Lanka’s significant role in Dutch floriculture industry, the analysis extended in to the steps of the value chain that take part in Europe, which Sri Lanka does not involve directly as the second part of the analysis.

Diagram 1: The framework of value chain analysis



### **Analysis of the value chain steps that takes part in Sri Lanka**

Propagation is one of the main activities that Sri Lanka involves within value chain and there are two methods of supplying planting materials for propagation. Large-scale exporting companies maintain their own nurseries with mother plants for the purpose of propagation as well as if necessary, companies import planting materials from foreign countries according to the customer requirements. Some companies propagate plants for their own usage within the farm as for the and some companies do propagation in commercial level for use within their own farms as well as for exportation as “planting materials” where tissue cultured planting materials to be exported. According to the studied cases, the large-scale companies are in touch with new and advanced technologies when comes to plant propagation. Further, the large scale companies exports their own products together with out-sourced products

according to the customer requirements. The reasons behind outsourcing include not enough production capacity, cost effectiveness and convenience. However, this ensures timely delivery for the customers. One of the considerable fact which discovered is that, even though some companies engages in out-sourcing with partner growers, some companies do not engage in out-sourcing while produce total amount of the production that they export, within their own farms.

Large-scale companies own several nurseries covering large number of land extent that are located in different elevations to produce different plant species according to the customer requirements. Moreover, according to the examples, companies use integrated methods for pest and disease control.

Many exporting companies have acquired several quality standards and certificates while few of the companies have not acquired any certification. However all the companies are tend to follow national and international plant quarantine rules and regulations and further, almost all the companies are trying to provide products while fulfilling customers' quality requirements.

Other than that, some of the companies have acquired world recognized quality standards and certifications like GLOBAL GAP certificate, Buffer Zone Conservation Forest Area and operate under the Japanese five S systems in order to attract customers as well as to increase its competitiveness within the international market.

There is not much concern has given towards research and innovations. Most of the exporting companies do not engage in any kind of research and innovation activities while some of the leading exporting companies are engage in some researches and developments. However, this has not developed up to the professional level. Few of the large-scale companies are involved in research and development and this has given number of opportunities to the respected companies to perform successfully in the international market.

Since the initial cost for research and development is high, not many companies are willing to engage in it.

Sri Lanka engages in Harvesting, Cleaning and Sorting of cut foliage within the value chain and three activities carry out within the same exporting companies who engages in farming to as those three activities are bound with farming. The methodologies use in harvesting, cleaning and sorting are conventional methods, which are done by manually and no advanced technology is used in these steps. Most of the exporting companies in Sri Lanka, involve neither in any kind of value addition within the particular stages or any advanced technology for increasing the efficiency of the particular activities.

Many exporting firms are not involve in any value addition while packing and it does involves only in bulk packing and send it to Europe and the value adding steps are done within Europe and therefore most of the companies do only bulk packing. However, there are some evidences that some companies are engage in value addition while packaging. There are no evidences that Sri Lanka directly involves in any kind of Brand promotion via packaging and the products are sold under several European brand names after further value addition therefore packaging within Sri Lanka does not involves in any Brand promotion. Foreign owned companies are mainly involves in bulk packing and send the products directly either to the customers or to the mother companies while Local owned companies are trying to engage in some value addition within Sri Lanka.

Sri Lanka mainly involves in air cargo rather using sea cargo since the products are perishable and freshness is one of the main customer requirements. Sea cargo is much cheaper and cost effective than air cargo and therefore moving towards sea cargo could improves the competitiveness of Sri Lankan products within world market. Sri Lanka is an Island country therefore free of boarder chargers, special taxes or trolls and legal constraints unlike land locked countries, which make it more competitive in the international market.

Sri Lanka's significant geographical location in the world map makes a special focus towards Sri Lanka when considering about the international sea routes. It has located right across the international sea routes and has identified as one of the central port for international shipping. Its proximity for several destination regions in the world like East Asia, South East Asia, South Asia, Middle East, Europe, Africa and Australia, Sri Lanka can be developed as an international hub for shipping and transportation.

**Why do European investors invest for farming in Sri Lanka (As one of the important steps in Value Chain)?**

There are 45 exporting companies have registered in Sri Lanka Export Development Board and among them, only 21 exporting companies are actively participating in value chain. Further, 9 companies are foreign owned companies and as a percentage it represents nearly 43% out of total exporting companies which are actively participate in value chain. Favorable geographical features and climatic conditions, low cost of production, unskilled and skilled labor availability and arable land availability have identified as major reasons that the foreign investors are attracting.

Sri Lanka has an irregular topography starting from low-lying coastal areas and rising towards southern and central areas into hills and mountain ranges which reaches an altitude of 2524m. Many large-scale companies own several nurseries, which are located in three different elevations and climatic conditions where they have taken the advantage over geographical and climatic factors to grow large number of different plant species and varieties. Employees who employ within farms are, live in rural and surrounded areas where farms are situated. Most of them have joined with the company as unskilled labor, and with the seminars, workshops and in-farm trainings they have become skilled workers. People who employed in farms are rural middle-aged women who live in nearby areas and working as a supporting role for the family income. Thereby, labor cost is considerably low, compared to

other sectors. Further, since there is a higher supply for the skilled jobs like laboratory staff, with less opportunities in the field, salary is considerably low when compared to the developed countries. It is free to use natural water sources and ground water with the permission of environmental authority in Sri Lanka. Ability to use partner growers (outsourcing) is one of the main advantages combined with low cost of production. There are large numbers of small family entities who are willing to farm in their small scale lands as a part time job other than their main income source. However, the main problem for these small scale growers facing is to sell their products and large scale exporting companies are taking over this problem by buying those products from small-scale farmers. Since the burden of initial investment cost and maintaining cost is taken care by the government, it is very convenient and cost effective for large-scale companies to buy the products from partner growers. This is considered as a win-win situation for both parties.

#### **Analysis of the value chain steps that takes part in the Netherlands**

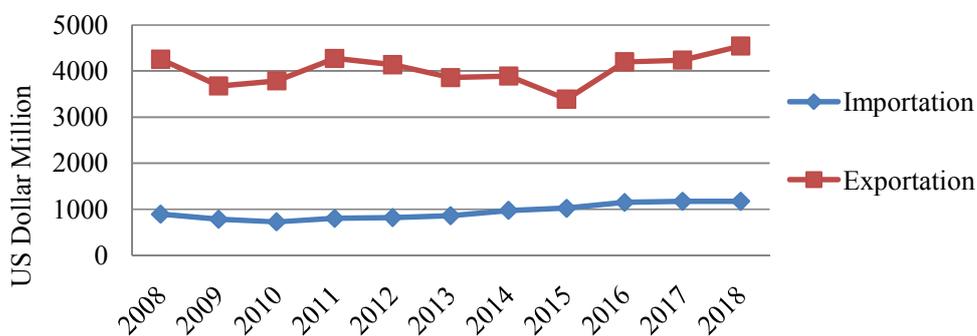
Sri Lanka does not directly send its production either to the auction or to the super market chains. Many companies are sending their products directly to a buyer who plays the role of an intermediary. Then this secondary buyer engages in either value addition or not and sell the products to super markets chains, wholesalers or to the auction. Sri Lanka average of nearly 30 Percent out of total foliage exports sent to the Netherlands.

Even though Sri Lanka exported nearly 30 Percent out of total foliage exportation to Netherland, Sri Lanka holds the 18th place among who supply foliage to the Netherlands. Sri Lanka is mainly supplying tropical foliages, which can maintain the competitiveness among other foliage supplying countries in the world and holding the 6<sup>th</sup> place among all tropical foliage suppliers to the Netherlands. According to the reports of Ministry of Foreign Affairs of the Netherlands as mentioned by Burke (2012), Dutch growers tend to supply several temperate foliage species. Further, using high technology along with green houses, Dutch

growers are trying to grow some tropical foliage species as well. However, due to increasing labor cost as well as high energy and maintenance cost, production of tropical foliage in the Netherlands is less competitive than international suppliers who are supplying bulk foliage for low cost and this could be considered as one of the opportunity that Sri Lanka receives.

Netherlands import considerable amount of cut flowers and cut foliage from different regions of the world. Figure 1 shows the annual cut flower importation and exportation by the Netherlands over last ten years (Value in US Dollar Million). According to the graph, average value of annual importation lies between 500 US Dollar Million to 1500 US Dollar Million while average value of annual exportation lies between 3500 US Dollar Million to 4500 US Dollar Million. The difference between average annual value of importation and exportation is about 2000 US Dollar Million where explains the role of global value chain.

**Figure 1: Total annual cut flower importation and exportation by Netherland over last ten years (Value in US Dollar Million)**



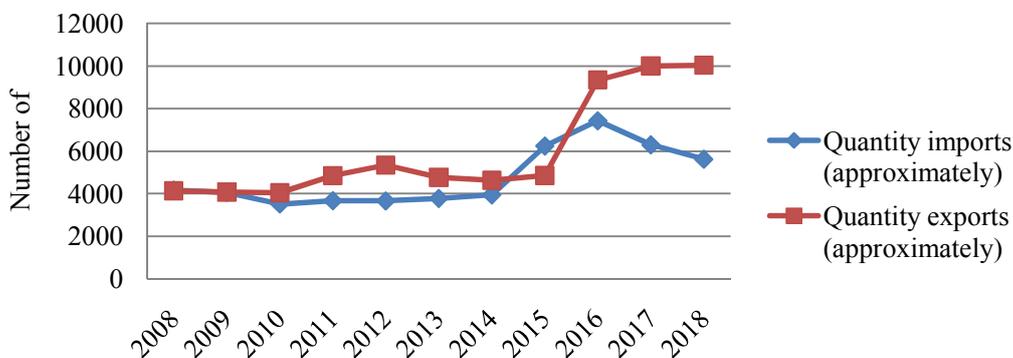
**(Source; Global Trade Atlas)**

Figure 2 shows annual cut flower importation against exportation over past 10 years as a quantity in million (NO) and it shows that the quantity of cut flower imports and exports are quite same or lies very closely over last ten years except 2016, 2017 and 2018. However, according to the figure 15, which was above, revealed that there is a considerable gap between the average value of annual imports and exports. Value addition along the global

value chain could explain this incompatibility as the Netherlands imports cut flowers as raw materials, value addition and export as a value added product.

**Figure 2: The Netherlands annual cut flower importation vs. exportation as in Quantity**

**Million**

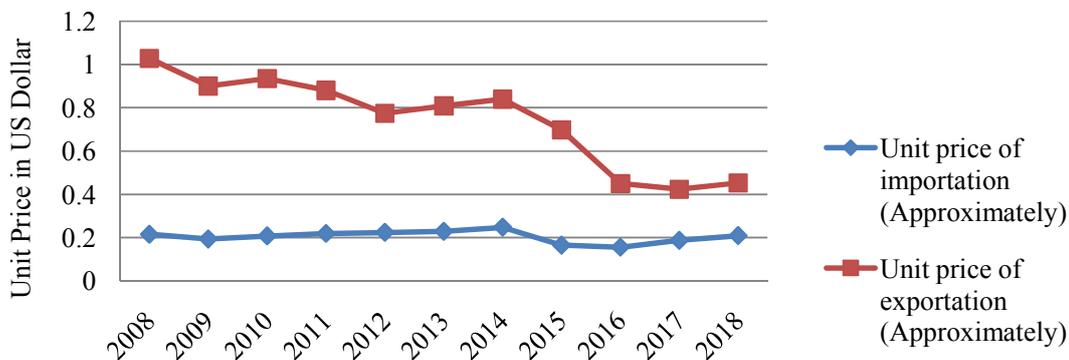


**(Source; Global Trade Atlas)**

As shows in the figure 3, there is a considerable difference between the unit value of a cut flower at importation and exportation.

**Figure 3: Unit price of a cut flower at importation vs. exportation over last ten years**

**(Approximately)**

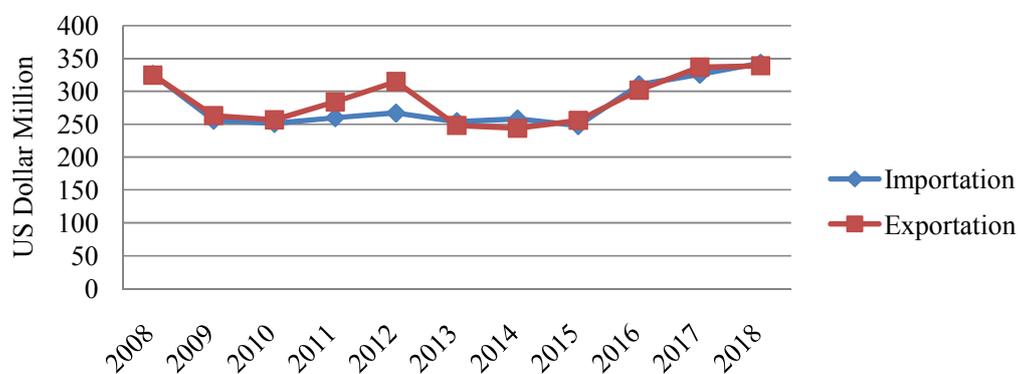


**(Source: Global Trade Atlas)**

Further, figure 4 illustrates the figures on annual foliage importation and exportation from 2008 to 2018. According to the figure 4, it shows that the cut foliage importation and

exportation are quite same or lies very closely, which makes the difference between cut foliage exportation and importation is negligible when compared to the cut flowers. This gives an impression about cut foliage production of the Netherlands where its production is quite low or negligible when comparing to other floriculture products. Though it does not engage in cut foliage production, the Netherlands holds the first place for cut foliage importation in the world and again this explains Holland's role in global value chain of floriculture industry.

**Figure 4: Annual Cut Foliage importation and exportation by the Netherlands over last ten years**



(Source: GTA)

Netherlands imports both cut flowers and cut foliage in large quantities from other countries, add value or do branding and re-exporting the products. According to the reports of Ministry of Foreign Affairs of the Netherlands as mentioned by Burke (2012) about 90% of the imported foliages are re-exported within European Union.

The supermarket chain directly buy cut flowers and foliage from the auction on a daily basis and process in to bouquets at their own packing plants and sent to their supermarkets with their own brand names. According to Burke, only by Dutch Flower Group, (one of the largest flower companies in the world) exports average of 5 million bouquets per week.

Large quantities of flowers and foliage, which are imported from other countries handled by few large-scale wholesalers and these wholesalers, distribute the quantities within the network of Dutch cut flower wholesalers. Then the flowers could go through several lines within the value chain. Some flowers and some foliage are put into the auction and those flowers are bought from several buyers like super markets, retailers, flower re-exporting companies, etc. Some of the flowers and foliage directly go the supermarket chains and some flowers directly go to the re-exporting companies without entering to the auction. There are about 650 flower exporters in the Netherlands and these companies export either cut flowers or foliages as wholesale or as already processed bouquets mostly within European Union. Most of these companies have their own brand recognition in the market. Further, there are several online flower shops like Flowers NL, which delivers flower bouquets in a big range. Supermarket channels within the Netherlands are playing a big role in marketing cut flowers and foliage.

#### **Comparison of present status between Sri Lanka vs. Kenyan Floriculture industry**

Kenya has to register their varieties under Kenya Plant Health Inspectorate Services. With the changing consumer preferences, new varieties of rose breeds are introduced frequently.

Sri Lanka does not engage in any commercial level breeding practices in order to have improved varieties in floriculture industry. Even if there is a potential to improve commercial plant breeding in Sri Lanka, it is considered as one of the capital intensive and high risk but long-term investment along with less flexibility because of highly changing consumer preference developing countries like Sri Lanka are not willing to invest on commercial level plant breeding. Developing countries including Sri Lanka and Kenya are importing planting materials from European breeders who are holding the competitive advantage because of the ability to monitor the market closely and to adopt changes in consumer preferences along with future predictions.

With the development of the industry, many new technologies have adopted by flower growers in Kenya. These include green houses with modifications with artificial heating and cooling ability. Some of the firms have used geothermal energy for heating purposes according to Whitaker and Kolavalli (2006). Irrigation systems of Existing greenhouses are switching to hydroponic while all the new green houses are included with hydroponic systems. Drip irrigation lines of the green houses have combined with fertilizing systems along with computerized control systems. However in Sri Lanka, though most of the growers use green houses there are only few main exporting companies who has capabilities to change the microclimate within greenhouse using advanced heating and cooling technologies and there are no cases have been observed where using geothermal energy.

Harvesting of cut flowers and foliage is considered as highly labor-intensive activity, since it should be done frequently and manually, in order to preserve its quality. With high labor availability and low labor-cost, Kenya has gained the comparative advantage over it. Further, there were no evidences that Kenya has adopted mechanical harvesting for cut flowers. Cleaning, sorting and packing, there are records that some large-scale producers have adopted mechanical methods. Sri Lanka has not yet involved in any mechanical harvesting while enjoying low cost labor availability. Further, cleaning and sorting is done by manually as there are no any evidences that even large-scale companies are using advanced machines or automated systems for cleaning and sorting. There are not enough records that any of Sri Lanka Floriculture exporters have their own agencies or freight forward services, except which provided by customers who are in Europe.

**Value addition at the upstream of the value chain that taken place in the Netherlands or other destination countries**

Even though the Netherlands has known as the world leading flower producer, Netherlands import a significant amount of cut flowers from other countries like Kenya and imports a

significant amount of cut foliage from different developing countries including Sri Lanka. There is not much difference between imports and export in the Netherlands considering about the quantity of cut flowers and foliage. However, according to the secondary data sources, there is a significant difference between importation and exportation in the Netherlands when considering about the value of the cut flowers and foliage. This gives a clear picture that how the Netherlands engage in value addition, Branding and Marketing as the leader of the flower industry.

This is where Sri Lankan cut foliage as well as Kenyan cut flowers assemble into one product according to some primary data sources. Some of the companies like “Tropiflora” have their branches in Kenya as well as Sri Lanka where Mother Company owned warehouses situated in Holland. Large-scale Kenyan flower exporters have opened their own sales offices in Europe in order to manage supply chains more effectively while most of the exporters are work through import agents. Many Kenyan exporters have eliminated intermediaries and developed direct relationships with supermarket chains in Europe. On the other side, some of the wholesalers have opened their own purchasing offices at Kenya itself by moving upstream in the supply chain.

Sri Lanka stays far behind than Kenya when considering the status of marketing and distribution. Except from the importing agents from Europe or from Mother companies, neither there are such bodies owned by Sri Lanka for backing up Sri Lankan cut foliage within Europe nor purchasing offices have opened up in Sri Lanka because of the less quantity produced.

### **Summary**

Sri Lanka is not in optimal capacity of the value chain and there are several potential ways to improve it. The steps Sri Lanka participates actively in the value chain are, propagating, farming, harvesting and bulk packing and exporting according to the analysis. However, it

has identified that Sri Lanka does not engage in plant breeding, value addition after harvesting, marketing or trading and it has found that most of these mentioned activities are done in Europe.

There is a potential to improve product upgrading since exporting firms can diversify its products by increasing number of varieties that they grow as well as value adding to the existing products at different stages especially at packaging. Process upgrading has identified as the most effective and practical way of improving the Sri Lanka's role in global value chain. It includes both management approaches as well as technology in order to use the current resources more efficiently and effectively. Adaptation of advanced technology in farming, harvesting, cleaning and packing is very less, compared to other successful cases like Kenya.

Under Functional upgrading, Sri Lanka can engage in marketing and direct trading following the examples of Kenya and further according to the case study results, it has identified that has already engaged in marketing and direct trading with a very small quantities which are not significant compared to bulk trading to the Netherlands through middlemen. Though there is a potential to improve, engage in commercial level plant breeding has identified as not very effective in Sri Lanka considering about the comparative advantage over developed countries.

Looking further in to the value chain, Sri Lanka's foliage plays a specific role at Dutch flower industry. Sri Lanka's cut foliage have used in making flower bouquets and more likely to either re-export them within European Union or send them to the supermarket chains or retail sellers. Important facts that identified through this paper are, even though the Netherlands has known as the worlds' leading flower producer, it is more likely that the Netherlands import a significant amount of cut flowers from other countries like Kenya and imports a significant amount of cut foliage from different developing countries including Sri

Lanka. According to the secondary data sources, it has revealed that there is not much difference between imports and export in the Netherlands considering about the quantity of cut flowers and foliage and this paper discusses how the Netherlands engage in value addition, Branding and Marketing as the leader of the flower industry. Sri Lanka is holding the sixth place, over global tropical foliage suppliers to the Netherlands holding the comparative advantage over most of the sub tropical and temperate countries along with the Netherlands.

It is very important to open the country for foreign investors and to facilitate them with favorable land and labor policies in order to encourage the foreign investors. Foreign investors especially from developed countries like European or Japanese play a critical role in industry development with their specialized knowledge, advanced technology and strong interrelationships and connections with larger markets and shareholders.

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