

How does the global value chain of fresh fruit evolve both globally and specific for South Africa

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Chapter 1: Introduction

1.1: Background

The industry of horticultural products (i.e. fruits, vegetables and cut flowers) is the largest agricultural industry in terms of world trade, accounting for more than 20% of the total global agricultural trade (English et al, 2004).

For a long time, the value chain of agricultural business has been subject to studies, since it's a classic example of an integrated value chain. In the publication *Building competitiveness in Africa's agriculture: a guide to value chain concepts and applications*, Webber and Labaste (2010) said the following about value chains: "Value chains are a key framework for understanding how inputs and services are brought together and then used to grow, transform, or manufacture a product; how the product then moves physically from the producer to the customer; and how value increases along the way" (Webber & Labaste, 2010, p. 1). Specifically about value chains in agriculture, they continue: "Enhancing value chain competitiveness is increasingly recognized as an effective approach to generating growth and reducing the rural poverty prevalent in the region" (Webber & Labaste, 2010, p. 2).

When studying value chains, a classic approach to value chains in which a distinction between buyer-driven and producer-driven chains is made, has proven to be too basic and outdated (Gibbon et al., 2008). However, there is one concept that is being used broadly in newer academic research on the topic: Global Value Chains (Gereffi et al, 2005). This thesis will describe the transformation in value chain analysis and extensively explain the concept of Global Value Chains.

The relevance of this concept is clearly explained by the OECD (2013), that distinguishes two main reasons why Global Value Chains are being used in academic research:

1. The location of a country on the Global Value Chain affects the degree to which it benefits from participating in the Global Value Chain.
2. Engagement in a Global Value Chain enhances productivity and growth.

So fruit is a large agricultural industry. For doing research on agriculture, value chain analysis are relevant and within value chain analysis, Global Value Chains is a recognized concept. This all explains a lot about the research subject. However, this research is not only about a global analysis. A more detailed study of one of the biggest fruit producing countries, South Africa, will be complemented.

With a GDP of \$12,700 per capita, and 31,3% of the country living below the poverty line, South Africa is seen as a developing country (CIA Factbook, 2015). While the agricultural population of South Africa accounts for only 9% of the total population, numerous actors are very fond of South African's fresh fruit, boosting its demand. ⁱ In 1997, the fruit industry in

South Africa got deregulated. Since then the number of exporters, the number of brands and the export volumes have been increasing (Ittmann et al, 2007) and as of today, South Africa is one of the leading export countries in the fresh fruit industry (Retamales, 2011). Its exports go mostly to the UK and mainland Europe (Van Dyk & Maspero, 2004) although its sales to China and India are increasing (Eurofresh Distribution, 2015). With these trends taken into account, one could argue that researching evolution in Global Value Chains in fruit in South Africa and, as a benchmark, the world in general, could prove valuable for the country that is South Africa.

1.2: Main question & objective

The main question in this research will be: How does the global value chain of fresh fruit evolve both globally and specific for South Africa?

The objective of the thesis is to research global value chains of the fresh fruit industry and specifically for South Africa, and to look into shifts in this industry both global as local.

1.3: Scientific relevance

Since this is not a quantitative research, this paper will not elaborate about the export potential of the country. Instead, a more qualitative research is done that focusses on the global value chain of fresh fruit, both globally as locally in South Africa.

This will be done by describing value chains and different theoretical approaches to the concept of value chains. Porter (1985) laid out the concept of value chains, after which Gereffi (1999) introduced Global Commodity Chains. That theory denoted two types of value chains: buyer-driven and producer-driven chains. That dichotomy was, according to Sturgeon (2002) too shortsighted as he introduced Modular Production Networks as value chain type that falls in between the buyer-driven and producer-driven chain. Gereffi et al. (2005) finally introduced the concept that is called Global Value chains. It distinguishes five different governance types that a value chain of an industry is like, which in turn is the theory that this research will go into depth about. Identifying in which stage the fruit industry is situated both globally and locally in South Africa will be a major scientific aim in this research.

1.4 Research method

This is a theoretical research about the global value chain of fresh fruit, and the way this industry is evolving along this way. It will look into this on a global level, as well as on a local level (i.e. South Africa). There are three main theoretical frameworks that will be used (as described in paragraph 1.3): The Value Chain concept of Porter (1985), the Global Commodity Chains framework by Gereffi and Korzeniewics (1994) and the Global Value Chains framework by Gereffi et al. (2005). A number of case studies will be cited in order to apply these theories. The case studies of Kaplan & Kaplinsky (1999) and Dolan & Humphrey (2000) are the most

important case studies used for applying the theories. Also, interviews with Legerstee and Rijnhout will be used to obtain a practical view on the matter.

1.5: Structure

In order to research Global Value Chain of fresh fruit, and especially in South Africa, a conceptual framework for global export chains in general needs to be described, that gives insights in how global commodity chains work and how these analyses evolved in time. This framework will be explained in the next chapter, i.e. chapter two. The sub question that will be answered in this chapter is the following: How do Global Value Chains work?

Chapter three describes the global fresh fruit industry and trade. The sub question of this chapter is: What does the world trade of fresh fruit look like?

Chapter four aims at applying the theory of chapter two to the fresh fruit industry. The sub question that is involved in this chapter: How does the Global Value Chain for fresh fruit look like?

Chapter five assesses the Global Value Chain of fresh fruit for the country of South Africa. Along with this chapter, two sub questions will be answered:

- How is South Africa positioned in the Global Value Chain framework?
- What is the role of logistics in the fresh fruit export industry?

Chapter six is the last and concluding chapter. This chapter is being used to summarize the findings and sub question answers. It will also answer the main question and in conclusion, it will give a recommendation for South African fruit export companies.

Chapter 2: Global Value Chains; a conceptual framework

In order to analyze the fresh fruit industry and its value chain, it is important to understand how global export chains in general work. The sub question of this chapter will be: how do global value chains work?

2.1 The Value Chain

In his book *Competitive Advantage: Creating and Sustaining Superior Performance* (1985), Michael Porter coined the term Value Chain. This at that time novel idea of the value chain described the entire range of activities that are necessary to take a product from conception through all the phases of production to its final destination, the consumer. The way that value chain activities are carried out will determine the costs, and thus the profits (Kaplinsky & Morris, 2001).

Every activity that needs to be done before a raw material will reach its end consumer, is an activity that is performed in a particular link in the chain. Porter distinguishes between

“primary activities” and “support activities”, with primary activities being logistics, sales, production and support activities being strategic planning, R&D, human resource management. Thus, by taking every separate function apart, management won't look solely at the physical transformation of the product anymore, but will also value support services as value adding activities.



Figure 1: The value chain (Porter, 1985)

Figure 1 is a graphical interpretation that shows the support activities integrated into the chain as a whole. The “Margin” section is an implication that the profit margin of a firm depends on how much a firm has linked all its activities in the value chain.

Porter distinguished two important elements of modern value chain analysis (Kaplinsky & Morris, 2001):

- The distinction within a firm for two different forms of activities, primary activities and support activities, as described above, at which Porter calls every activity a *link* in the value chain. For a successful outcome, the *link* “production” is dependent on all the other factors in the chain. So instead of “production” being some kind of autonomous entity, in his analysis it is rather a member (*link*) of the total chain.

- The total sum of all the value chains of all the firms combined that make up the entire channel from raw material to end consumer, the so-called value system. The value system extends beyond the boundaries of an enterprise.

2.2: Global Commodity Chains

In 1994, Gereffi and Korzeniewics developed a framework called ‘Global commodity chains’.

This framework highlighted the importance of coordination across firm boundaries and also the importance of new global buyers as key drivers for production and distribution networks.

An important factor of Gereffi's findings was the distinction between producer-driven and buyer-driven global commodity chains (Gereffi, G. 1994). Producer-driven commodity chains were found in sectors that were technical intensive and which demanded high capital requirements. This naturally resulted in huge entry barriers which sustained the status of large manufacturers. Buyer-driven commodity chains, in contrast, were seen more in labor-intensive industries. A buyer-driven global commodity chain was a chain in which global buyers used explicit coordination, which eventually resulted in the creation of global-scale production and distribution systems. By this time, this was a brand new approach in comparison to producer-driven approach. Instead of vertically integrated behemoths, global commodity chains evolved into a way more dynamic entirety in which factors other than huge cross-border industrial organizations became of growing importance. (Gereffi et al, 2005). At the same time vertical disintegration took place by transnational corporations and are aiming more on innovation, product strategy and marketing. All of this was done while the direct ownership over 'support' functions such as generic services and volume production got reduced (Gereffi et al, 2005).

One more reason that vertical integration was much less common for buyer-driven chains, was because for these chains, firms that had their focus on the end product turned out to be the leading firms. These firm would distinguish in product design and branding rather than focusing on manufacturing and upstream margins (Gibbon, 2008). The buyer-driven commodity chain concept was implemented as a new network form, and during the last quarter of the previous century the firms in buyer-driven industries that proved to be outperforming were the ones that focused on the design, branding and marketing, while they organized production through networks of independent suppliers and contractors. In buyer-driven industries, the formal hierarchy vanished and the inter-firm relationship flourished (Bair, 2008).

But the focus on product differentiation became not only important for purely buyer-driven chains. Applications of Global Commodity Chain analysis started emphasizing more and more on process differentiation by taking strategic measures downstream. Marketing and design became more important factors in general for distinguishing your product and generating higher profits, also for classical product-driven markets (Gibbon, 2001).

It's evident that Global Commodity Chains analysis has proven valuable for a lot of companies. Global Commodity Chains analysis came up with ways for less powerful actors to attain more market share and more control globally. Global Commodity Chains analysis states that industrial policy tools, while proven very effective in the past, now have only a

limited amount of effect. Moreover, were global trade sometimes looked like a zero-sum approach in the past, focusing on chain co-ordination and the growing importance of agents to institute efficiency measures and cost-reduction have resulted in a welfare surplus globally. (Gibbon, 2001)

2.3: From Global Commodity Chains to Global Value Chains

One factor that appears to be an important driver for trade is the transformation from primary production to industrial upgrading. According to Gereffi, G. (1999), the industrial upgrading in East Asia has been substantial driver for the growth of international trade in this region, especially during the 1980's and 1990's (Gereffi, 1999). Global Commodity Chains analysis started to focus more on the process improvement. Global Commodity Chains analysis gradually changed into next-level analysis: Global Value Chains.

Now that the producer-driven versus buyer-driven framework had arisen, the conceptualization of governance shifted. Sturgeon (2002) observed that just arguing which actor is the driving factor behind the chain is too basic, as global chains were starting to focus more on coordination. He introduced the Modular Production Network: lead firms focused on creation and differentiation downstream while it outsourced their manufacturing capacity to turn-key suppliers. The concept relies on inter-firm relationship and generic manufacturing. In the context of globalization, Sturgeon argues that the modular production network results into a better economic performance for the firms. As example, Sturgeon used the US electronic companies of the 1990s. Lead companies like Dell and Compaq subcontracted manufacturers of computer parts, not necessarily for cost-cutting reasons, but rather because they were seen as 'turn-key' suppliers: the subcontractors provided their clients (i.e. the end consumer, *not* the lead firms) with a full range of services while they didn't need a great deal of assistance from the lead firms. They could operate and serve the end consumer without much dependence of the lead firm. With the complex and less standardized services that the suppliers were offering, lead firms wouldn't quickly change supplier.

In response to the concept of Modular Production Networks , Gereffi et al. (2005) acknowledged that the previous model of two opposites (dynamic inter-firm relationships versus vertically integrated firms) were actually ends of a spectrum of coordination, so they added three more distinct governance types to the model: Modular, Relation and Captive.

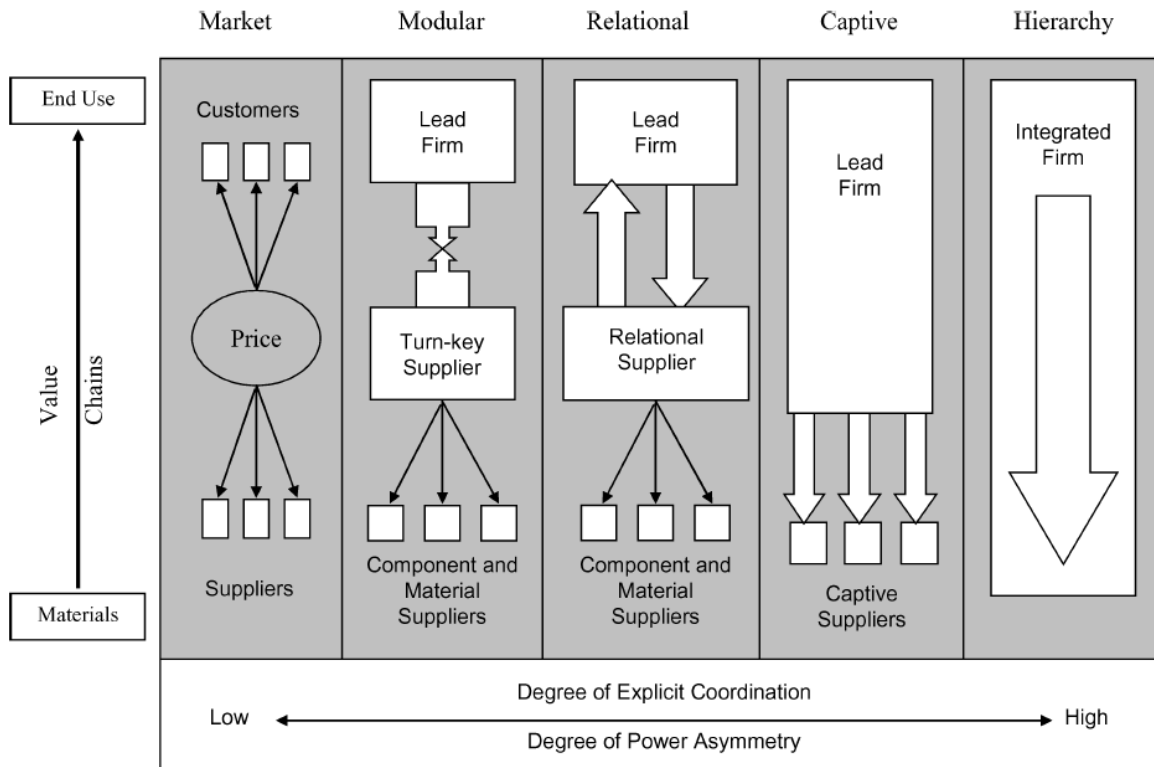


Figure 3: Five Global Value Chain governance type (Gereffi et al, 2005).

The *Hierarchy* governance type is the classic production chain where one firm was direct owner of the entire chain. A good example is the bicycle industry in the end of the 19th century. Vertically integrated firms manufactured bicycles, in which one firm owned every segment of the value chain. It turned out, however, that production of bicycles worked more efficiently when this industry became fragmented. Slowly but surely, fragmentation appeared in every segment of the value chain, until the industry was *Market*-based (Gereffi et al, 2005).

The *Market*-type is one in which the suppliers have the capability to make products without much inputs from buyers. The price is set on a market exchange where buyers respond to the prices set by the sellers. Another example for this governance type one could think of, is one of a classic fresh vegetables market. Until the 1980's, fresh vegetables that were sold in retail stores in the United Kingdom. Vegetables were, for example, harvested in Kenya. Traders there bought the produce at the farms and sold it to wholesale markets in the United Kingdom, from which the retailers bought it (Gereffi et al, 2005).

Modular value chains are slightly different than *Market* value chains, as customers rely on one turn-key supplier, who outsources the production to suppliers further upstream in the value chain. The case that is used in this research to further explain this governance type is the case of US electronic companies, which is described earlier in this paragraph.

The governance type that is closest to the *Hierarchy* type is the *Captive* type one. Although upstream there is more than one supplier, the suppliers are relatively small and they are really dependent on the large firms that are buyers. The suppliers in this industry face switching costs and since there are not many buyers, their choices are very limited and thus their ‘captivated’ status as suppliers to big lead firms. An example of a *Captive* network was the textile industry of the 1950s and 1960s: this assembly oriented model required explicit coordination by big foreign lead firms (mostly from the US), in the form of cut fabric and detailed instruction to the actual manufacturing companies in East Asia (Gereffi et al, 2005).

The *Relational* type is where explicit coordination plays an important role, as there are more complex interactions between buyers and sellers with mutual dependence. While the influence of the lead firm in this governance type is not so dominant as in the *Hierarchy* type, long-lasting relationships and trust do play an important role in the *Relational* governance type. To explain this, we look again at the textile industry in East Asia: assembly companies became more domestically integrated over time and the goods they exported had more value added by the assembly companies. A lot of interaction was required in order to exchange information between buyers and suppliers sufficiently, and thus personal relationships between the two actors were being built (Gereffi et al, 2005).

In order to quantify the differences between the types, Gereffi and others used three independent variables that made the distinction between the governance types more clear: Complexity of intern-firm transactions, the degree to which this complexity can be mitigated through codification and the extent to which suppliers have the necessary capabilities to meet the buyers’ requirements. This leads to the following table:

Table 1 Key determinants of global value chain governance


Governance type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply-base	Degree of explicit coordination and power asymmetry
Market	Low	High	High	Low
Modular	High	High	High	
Relational	High	Low	High	
Captive	High	High	Low	
Hierarchy	High	Low	Low	

Table 1: Key determinants of global value chain governance. Source: Gereffi et al, 2005.

Each governance type provides a different trade-off between the advantages and risks of outsourcing. For example, in a *Captive* value chain, the ability to codify the transactions should be high, otherwise the relationship between the supplier and the buyer should be much more profound than the superficially relationship that this type of value chain assumes.

And the capabilities of the suppliers for this type will be low, because if the supply of the product was complex and heterogeneous, the supplier had a better negotiation position and would not have been held 'captive'.

2.4: Current trends in global chains

The phase of economic globalization that is seen in the present is not only associated with disintegration and the position of suppliers anymore. The changing patterns of ownership are becoming more important in the globalization trend, too. Like stated before, multinational corporations from developed countries that set up production plants through Foreign Direct Investments (the so-called FDIs) in developing countries are no longer the trend in terms of globalization. Many countries, especially countries with labor-intensive industries have industrial capacities that are either owned by national firms of the producing countries or by firms owned by other developing countries (Gibbon et al, 2008).

The production networks globally have especially advanced in labor-intensive sectors and had a substantial impact on the labor-rich countries incorporated into Global Value Chains (Gibbon et al 2008).

In the context of the Global Value Chains framework, lead firms are faced a couple of choices when it comes down to production networks and trading in global industries. The first is whether to outsource supply, procure in-house or find a combination of the two. The next choice that should concern firms is what the characteristics of the product will be. One should think which standard of quality it wants, and for which price (Gibbon et al, 2008).

2.5: Conclusion chapter two

This chapter explained the concept of Global Value Chains and the evolution of this framework over time. In 1994 the Global Commodity Chains theory was introduced, to be followed up by the Global Value Chains theory in 1999. Distinctions were made between producer-driven industries and buyer-driven industries. In the decade that followed, a framework has been made. The Global Value Chain now distinguishes five governance types: *Market, Modular, Relational, Captive and Hierarchy*.

Chapter 3: The global fresh fruit industry and trade

This chapter is meant to give insights into the size of the fresh fruit export market globally. The sub question of this chapter is: What does the world trade of fresh fruit look like?

3.1: Distinctions in fresh fruit

Before this research can give a detailed description of the global value chain of fresh fruit, it is necessary to explain what product we are actually describing.

Firstly, the distinction ‘fresh’ fruit is an important one. Fresh fruit is fruit that is produced for the purpose of fresh consumption. It means this fruit will for example not be turned into juice and will not be canned. That would fall under the category of ‘processed fruits’. The reason that this distinction is made, is because the difference in end consumption has a significant impact on the supply chain process (Goedhals-Gerber et al, 2014).

Besides the distinction in Fresh Fruit and Processed Fruit, Fresh Fruit can be further differentiated. Within Fresh Fruit, there is Deciduous Fruit, Citrus Fruit and Subtropical Fruit. The reason that it is relevant to make this distinction, is because there are differences in the climate that these fruits need in order to grow, as well as differences in storage temperatures. Deciduous fruit comes from trees or vines that lose their leaves in winter time and grow better in mild to colder climates. The fruit can be stored at low temperatures around 0°C. Citrus trees keep their leaves in winter and grow best in warmer climates. Storage temperatures for citrus fruits are in the 3.5 to 8°C range. Subtropical fruit grow best in climates that are tropical or just outside the tropical regions the trees keep their leaves in winter. The fruits do not like storage temperatures below 6°C.

Deciduous fruit can be further split into table grapes, pome fruit (apples and pears) and stone fruit (apricots, peaches, nectarines and plums). The citrus fruit group is divided into oranges, grapefruit, lemons, limes and soft citrus (e.g. mandarins). Subtropical fruits are, among others, mangoes, litchis, melons and bananas.

3.2: Global production and export figures

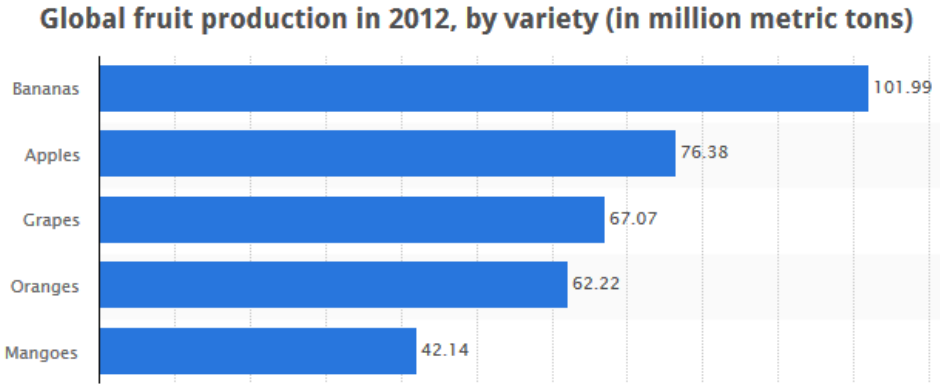


Figure 4: Global fruit production in 2012, by variety (Source: FAO/Statista 2015)

The difference in production between the Northern Hemisphere and its southern counterpart is worth to mention. For example, the total production of apples in 2012 was, as figure 4 shows, 76 million metric tons.

Figure 5 shows the production of the six biggest apple producing countries in the Southern Hemisphere. Note the slight general growth in production by these countries over the last five years, which in absolute terms can mostly be attributed to Brazil, Chile and Argentina. It is interesting to mention that the share of global production of apples from Southern Hemisphere countries was a mere 5.7 million, or 7.5% of the total global production of in 2012.

SOUTHERN HEMISPHERE PRODUCTION (METRIC TONS)

Country	2008	2009	2010	2011	2012
APPLES					
Brazil	1 124 160	1 222 890	1 279 120	1 339 000	1 335 478
Chile	1 504 101	1 330 617	1 624 242	1 588 347	1 625 000
Argentina	950 000	845 497	1 050 000	1 115 950	1 250 000
South Africa	770 741	817 698	724 232	781 124	795 758
New Zealand	446 000	431 000	450 000	445 000	448 000
Australia	265 481	295 134	264 401	299 778	289 064
TOTAL	5 060 483	4 942 836	5 391 995	5 569 199	5 743 300

Figure 5: Southern Hemisphere apple production (Hortgro, 2014)

The next figure gives more insights into the biggest Southern Hemisphere countries in terms of deciduous fruit production. This is total deciduous fruit, so processed and fresh combined. Notice how the total growth of production by these countries is almost solely due to the growth of production in Chile.

SOUTHERN HEMISPHERE PRODUCTION (METRIC TONS)

Country	2008	2009	2010	2011	2012
ALL DECIDUOUS FRUIT					
Argentina	4 982 011	4 308 945	4 861 369	5 144 827	5 210 000
Chile	4 713 160	4 823 262	5 377 136	5 555 851	5 627 000
South Africa	3 287 761	3 173 977	3 105 819	3 093 549	3 261 101
Brazil	2 802 126	2 819 468	2 873 384	3 123 775	3 105 223
Australia	2 519 763	2 359 596	2 186 557	2 265 500	2 193 921
New Zealand	777 100	760 900	758 714	812 795	831 100
TOTAL	19 081 921	18 246 148	19 162 979	19 996 297	20 228 345

Figure 6: Southern Hemisphere production of deciduous fruit (Hortgro, 2014).

The distinction between Northern Hemisphere and Southern Hemisphere countries is relevant for deciduous fruit industry, because of the opposite harvesting calendars. Whereas tropical fruits, which are harvested in a shorter proximity to the equator, can be harvested in the same country throughout the year, deciduous fruits are more subject to seasonal change. Apples in the Southern Hemisphere, are, for example, harvested from March to July (Van Dyk & Maspero, 2004), whereas apples in the Northern Hemisphere are harvested from August to November.¹ Dividing countries into those regions make them more relevant to compare, since within the deciduous fruit industry, countries are not competing with countries from the other Hemisphere.

As stated in the previous paragraph, the distinction between fresh and processed fruit should be made. Although there is not much data available for this distinction, there is some recent information in the distribution between fresh and processed citrus fruit. In the 2010/2011 season, 115 million tons of citrus was produced, of which 29 million tons of citrus was processed, which leaves 86 million tons fresh produce for the end consumer (FAO, 2012).

Also, since this research focuses on global value chains in fruit, it is relevant to know how much fresh fruit actually gets exported. In 2010, the global production of apples was 70.58 million metric tons. The amount of fresh apples that actually got exported, was 8.56 million, or 12,1%.

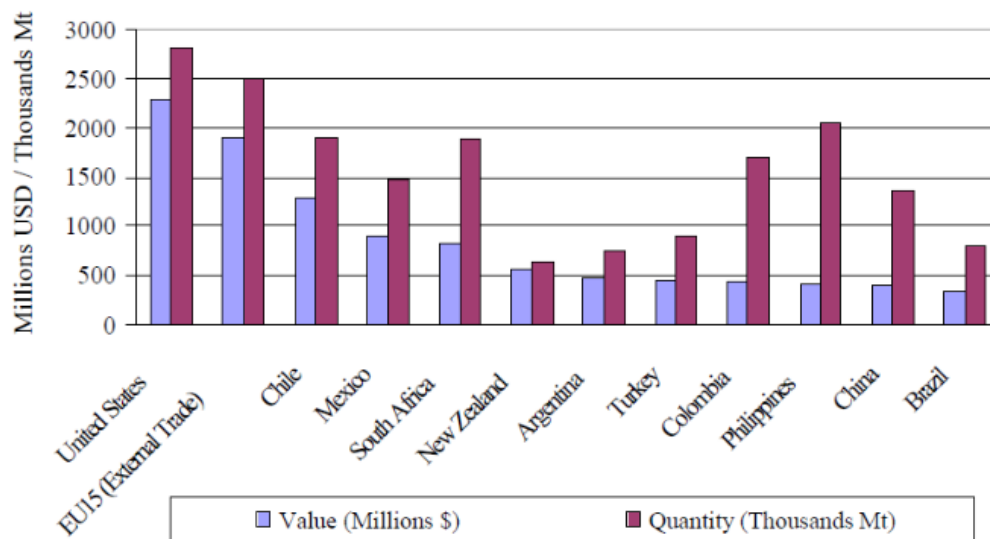


Figure 7: Most important fresh fruit exporting countries 2003 (Retamales, 2011)

Figure 7 shows the biggest exporting countries for fresh fruit. The figure not only gives a good insight in which countries are important for this industry, but also the value per million

¹ Depending on the apple cultivar and the exact climate of the region the apple is grown

tons of fresh fruit. For example, Chili exports more or less as much fresh fruit as South Africa, but the total value of its fresh fruit exports is almost twice as high as its competing African country. Moreover, the countries China and the Philippines are quite remarkable in this figure. The quantity of the fruit produced is in both countries a lot higher than its value in US dollars, compared to most countries in the figure. This implies the lower quality and the production of less valuable cultivars of fruit that is exported from China and the Philippines.

3.3: Conclusion

In this chapter, a distinction between 'fresh' and 'processed' fruit was made, and secondary data showed that by far not all the fruit is fresh fruit.

This chapter made a distinction in deciduous, citrus and subtropical fruit as well. Numbers of the most produced fruits globally were shown, with bananas being the fruit that is most produced. Since this research is about global value chains, a figure of the largest fresh fruit exporting countries was also presented.

Chapter 4: The Global Value Chain of the Fresh Fruit Industry

This chapter will use the theoretical framework of Global Value Chains and assess this theory to the global industry of fresh fruit. This chapter aims at answering the following sub question: How does the global value chain for fresh fruit look like?

4.1: Export process of fresh fruit

Firstly, a general export process will be described. This gives the reader an idea of how the actual value chain takes place. As figure 8 explains, fruit is harvested and directly cooled in a cold storage, usually supplied by the farmer. For fruit to remain fresh, it has to keep cool during the entire supply chain process. This means the fruit will get on to a refrigerated truck to the package facility, which is at a chilled temperature. After it is packed, the fruit is transported in cold transport all the way to its final destination, the supermarket, sometimes storing it for short periods in cold warehouses along the way. The figure explains the entire chain, from harvesting to consumption. In paragraph 5.3 of this research, the entire chain of a South African apple is precisely described for a more detailed view of how a fresh fruit chain

looks like.



Figure 8: Diagram of the fruit export process (Freiboth et al., 2013)

4.2: Lessons learnt from the Deciduous Fruit Canning Industry

Kaplan & Kaplinsky (1999) researched the Deciduous Fruit Canning Industry (DFCI), and specifically canned peaches from South Africa versus the canned peaches from Greece. Although this is processed fruit and this research aims at fresh fruit, Kaplan & Kaplinsky give very thorough insights about market distortion in that industry, partially due rising bargaining power of retailers.

	USA	Europe	Japan	Changes in three-year time horizon
Low prices	4.3	4	3	Becoming much more important in Japan, from 1.7 in 1992 to 3.7 in 2000
Conformance to standards	4	4.7	4.7	Little change
High quality	3	3.7	4.7	Little change
Packaging	3.7	4	4	Becoming more important in all markets
Reliable delivery	5	5	5	
Volume flexibility	2.7	2.7	3	Becoming more important in all markets
Product variety	3	4.3	4.3	Little change
New products	3.3	4	2.7	Becoming more important in all markets

Table 2: Critical success factors for canned peaches in different markets, with 1 being least important and 5 being most important (Source: Kaplan & Kaplinsky, 1999).

The factor that plays the most important role for canned peach markets around the world, is *Reliable delivery*. As chapter 5 of this research will elaborate more on this, this factor is an important factor for retailers, not only in the processed fruit market, but also the fresh fruit market. Although peaches are a seasonal product in a country, the retailer still wants to have it in the supermarket shelves every day of the year.

Another thing that is interesting about table 2, is the variable *Changes in three-year time horizon*. Three of the eight factors of success were becoming more important in all the researched markets, with not a single factor of success becoming less important over the course of three years in the end of the 1990's. Table 2 clearly shows that buyers of canned peaches have become more demanding. This chapter will reveal that buyers of fresh fruit are in somewhat the same powerful position.

4.3: A buyer-driven Global Value Chain

For the global industry of fresh fruit, it is obvious that this sector nowadays is a buyer-driven industry: it is a labor-intensive industry with inter-firm relationships rather than vertically integrated multinational behemoths. With this in mind, it should be no surprise that fresh fruit and vegetables (FFV) is one of the few primary commodities to which Global Commodity Chains analysis has been applied (Gibbon, 2001). Fresh fruit supply chains are increasingly buyer-driven, deriving more and more from supermarkets control over information concerning consumer trends, and a growing concentration of ownership and market share in the retail sector (Gibbon, 2001).

The biggest supermarkets in EU, in 1996, had a total food market share of more than 50% (Baas et al, 1998). While this might seem like a contradiction of the disintegration that buyer-driven chains stand for, it is not. The retail chains don't coordinate supply chains directly. They adopt Just-In-Time stockholding and Just-In-Time delivery strategies and externalize a wide range of functions to preferred suppliers. This is in line with the Global Value Chains analysis, which assumes disintegration of production and also describes re-integration through inter-firm trade.

Dolan & Humphrey (2000) describe how UK supermarkets used to buy fresh fruit on domestic wholesale markets. But with a demand for a higher product variety and greater knowledge of the production systems, the supermarkets increased their presence in the chain by reducing the number of suppliers and thus inter-firms relationships became ever more important.

4.4: Historical governance types of Fresh Fruit Chains

In chapter 2, Gereffi and others built further from the framework of Global Value Chains and a more expanded approach was made than the classical buyer-driven versus production-driven approach. With three independent variables, complexity of inter-firm transactions, ability to

codify transactions and the capabilities in the supply-base, five governance types were identified: *Market*, *Modular*, *Relational*, *Captive* and *Hierarchy*. Since this approach is more profound and descriptive, it is relevant for this research to identify to which governance type the value chain of fresh fruit belongs.

In classical global value chain terms, this value chain is a buyer-driven chain (see paragraph 3.1). This means that the price is derived from the retail firm downstream, i.e. the lead firm in the model from chapter 2, which in turn declares that this industry is not a *Market* governance type. The next example of a Golden Delicious apple will help explain why the fresh fruit industry is not a *Market*, and will try to explore which governance type might fit the industry best.

Fifteen to twenty years ago, the supermarket industry in Europe consolidated, with a couple of big chains in every country. They didn't want a deviating quality of the fruit anymore, just because it wasn't the season for the type of fruit or the farm in the producing country couldn't deliver. One important factor for the retailer became that it wanted year round deliverable quality fruit. This meant that they wanted the Golden Delicious apple not only when it was harvested in Europe during autumn, they also wanted to sell this apple in summer. In the Southern Hemisphere, the harvesting period for Golden Delicious is also in autumn, which means for Europe that the apple is being harvested in spring, which makes it deliverable in summer. The demand of the retailer implicated that the importer had to find a reliable export partner or producing partner in the Southern Hemisphere as well as in Europe. The requirement that the importer always had to deliver meant that the importer could not just partner up with a small farm somewhere in South Africa. If the farm had a bad yield one season, the importer couldn't deliver its promise to the retailer and lost its client. The process above shows that the global value chain of fresh fruit is not a *Market* anymore, since the price is not set by the sellers. Moreover, it describes a *Modular* governance type, since the retailer is obviously a lead firm, with mostly one turn-key supplier, which is an importer that outsources the actual production to a few suppliers upstream (i.e. the fruit producing farms).

4.5: Current and future governance types of fresh fruit chains

Nowadays, the power of the retail companies in this industry is even bigger. The interviews conducted for this research revealed that retailers are becoming ever more demanding.² While fifteen years ago retailers demanded a supplier to have continuity in quality & availability, nowadays the retailers are also demanding lower prices.

In table 2, it is already stated that the factors continuity in quality and continuity in availability for canned peaches were becoming more important by the end of the nineties. Dolan &

² See Appendices 3 & 4.

Humphrey (2000) laid down the increasing bargaining power of UK supermarkets in the fresh fruit industry at the end of the last decade. The interviewees from fresh fruit import companies confirmed similar demands from retailers for the same industry for the same time period, and acknowledged that demands are actually even tougher nowadays.

The increasing power of retailers described above, has changed from the governance type of this industry from *Market* to *Modular* about two decades ago. The increasing power of these leads firms in the last fifteen years, and especially the demand for sustainability and transparency, has definitely changed the governance type to *Relational*. There are three clear differences between *Modular* and *Relational* value chains: The ability to codify transactions is lower in *Relational* chains, while the degree of explicit coordination and power asymmetry are higher than with a *Modular* chain. The transactions become more complicated because of the sustainability aspect, which makes it harder to codify, and this makes the explicit coordination more important: the (relational) supplier and the lead firm become mutual dependent. Also, since the supermarket giants in Europe grew bigger, their purchase price become lower and the power asymmetry grew once more. When talking of the future of this industry, one interviewee argued that it might shift more and more into a *Captive* value chain, in which the importer is *captivated* by the lead firm.

The producer from outside of Europe is likely to not be *captivated* by retail companies in Europe in the near future since it has a couple of markets to sell its fruit to. Another interviewee said that fruit farms in South Africa are producing more and more for the internal market and markets other than Europe: especially India and China are growing customers for the South African fresh fruit farmer.

One might think that Indian and Chinese retail chains just copy the (successfully proven) European retailers, so that the South African fruit farmer remains in the same position, even if it shifts to a different market. However, Pongpanich & Phitya-Isarakul (2008) show in an empirical study of Thai fruit exporters to the Chinese market, that the Chinese fruit import market right now works quite differently: "Modern trade retailers such as hypermarkets and supermarkets are the preferred channels for consumers who purchase Thai fruits. Most importers use the consignment model that translates into high price volatility and poor visibility with the end consumer. In addition, this model is highly fragmented since it involves numerous stages of distribution that includes importers, first-tier wholesalers and second-tier wholesalers. The result is higher transaction costs and a lack of consistent product quality for both retailers and consumers" (Pongpanich & Phitya-Isarakul, 2008). Note that this is an empirical study on China, thus the hypermarkets, supermarkets, wholesalers, importers and consumers mentioned in this quote are all Chinese-based actors. Pongpanich & Phitya-Isarakul clearly show that the fresh fruit industry in China right now is at a *Market* stage. With first-tier and even second-tier wholesalers, the industry is highly fragmented and the degree of explicit coordination in this

value chain is very low, making the fresh fruit industry in China a completely different story than the EU market.

4.6: Conclusion chapter four

This chapter was meant to answer the question: How does the global value chain for fresh fruit look like?

After the conceptual framework of global value chains was explained in chapter two, chapter four was meant to place the fresh fruit industry inside this framework. For the fresh fruit industry, one could speak of a *Relational* governance type, since the mutual dependency of the lead firm (i.e. retailer) and the relational supplier (i.e. import firm) is really striking.

It is relevant to mention that a shift in this chain is definitely observed, as this industry started out as *Market*, then become a *Modular* type, before it went to its current state, *Relational*. Research suggests that, with lead firms becoming more powerful (at least in Europe), lead firms could take over import firms and the chain could change to a *Captive* one.

Chapter 5: The Value Chain of Fresh Fruit in South Africa

In chapter 4 of this research, the Global Value Chain of fruit is investigated, in which there was a clear shift observed from a *Market* value chain to a *Relational* value chain over the timeframe of about half a century. This research has the aim to show the global value chain of fresh fruit globally, but also specifically for South Africa. Therefore, this chapter will elaborate on the value chain of fresh fruit that is exported from South Africa.

The two sub questions that belongs to this chapter are: How is South Africa positioned in the Global Value Chain framework? And: What is the role of logistics in the fresh fruit export industry?

5.1: Overview of the South African Fresh Fruit industry

Before answering the sub questions, this paragraph will present statistics with regards to the subject.

Figure 9 shows the distribution of hectares planted per deciduous fruit. Note that especially

grapes and apples are using a lot of the agricultural space in South Africa.

TOTAL AREA PLANTED

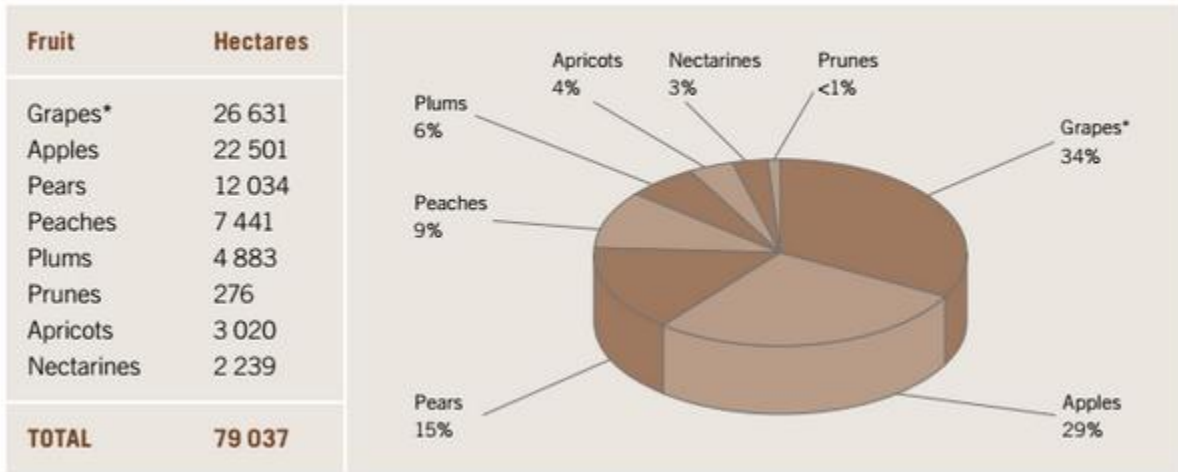


Figure 9: distribution of hectares planted per deciduous fruit. Source: Hortgro, 2014

WORLD PRODUCTION - APPLES

APPLES	PRODUCTION (METRIC TON)				
	2008	2009	2010	2011	2012
China	29 850 772	31 684 433	33 265 186	35 986 667	37 001 590
USA	4 369 591	4 402 069	4 214 599	4 275 108	4 110 046
Turkey	2 504 490	2 782 365	2 600 000	2 680 075	2 889 000
Poland	2 830 658	2 626 273	1 877 906	2 493 078	2 877 336
India	2 001 000	1 985 000	1 777 200	2 891 000	2 203 400
Italy	2 210 100	2 325 653	2 204 972	2 411 201	1 991 312
Iran	2 718 775	2 000 000	1 662 430	1 842 972	1 700 000
Chile	1 504 101	1 330 617	1 624 242	1 588 347	1 625 000
Russian Federation	1 122 400	1 441 200	992 000	1 200 000	1 403 000
France	1 701 752	1 803 370	1 788 433	1 857 349	1 382 901
Brazil	1 124 155	1 222 885	1 279 124	1 338 995	1 335 478
Argentina	950 000	950 000	1 050 000	1 115 951	1 250 000
Ukraine	719 300	853 400	897 000	954 100	1 126 800
Germany	1 046 995	1 070 678	834 960	898 448	972 405
Uzbekistan	585 000	635 000	712 000	779 000	820 000
South Africa	770 741	817 698	724 232	781 124	795 758
Japan	910 700	845 600	786 500	655 300	793 800
North Kora	680 564	719 608	752 020	752 300	785 000
Hungary	568 600	575 368	496 916	292 810	650 595
Rest of the world	10 882 163	10 933 232	11 043 958	11 338 533	10 666 907
TOTAL WORLD	69 051 857	71 004 449	70 583 678	76 132 358	76 380 328
% CHANGE (YEAR-ON-YEAR) -		2,8%	-0,6%	7,9%	0,3%

Figure 10: world production of apples per country

The fresh fruit industry in South Africa is actually really focused on export. This is clear if you look at figure 10 and 11. Figure 10 shows us the world production of apples per country, where South Africa is placed 16th in the world. However, figure 11 gives us insights about the ten biggest exporting countries of fresh apples. Here it is ranked number eight globally, and in 2012 it exported 48.4% of its apples, 4 times more than the world average of 12.1% (see paragraph 3.2 of this research).

TOP 10 FRESH APPLE EXPORTERS, 2007 - 2012 (METRIC TONS)

Country	EXPORT VOLUME (METRIC TON)					
	2007	2008	2009	2010	2011	2012
China	1 020 315	1 153 373	1 171 817	1 123 053	1 034 635	975 878
Italy	784 886	683 377	732 794	857 330	975 833	933 910
Chile	774 634	766 254	678 629	837 149	800 834	762 005
United States	663 465	712 527	816 167	780 332	826 458	863 152
Poland	434 506	370 991	777 071	724 699	533 585	951 036
France	685 339	684 081	611 279	695 760	729 297	624 856
Netherlands	395 218	391 778	406 676	352 846	341 297	264 750
South Africa	334 336	358 119	338 829	305 783	335 000	385 000
New Zealand	292 413	260 759	302 854	284 187	287 000	305 000
Belgium	344 289	261 917	286 306	245 806	267 901	180 609

Figure 11: top 10 fresh apple exporting countries

The most of the deciduous fruit that is exported to the northern Hemisphere reach the consumer through the means of contractual agreements via preferred category suppliers to the large supermarket chains (National Agricultural Marketing Council, 2007).

5.2: Deciduous fruit insights and analysis

In order to obtain a more detailed view of the export process of fresh fruit in South Africa, industry perspectives from two fruits (apples and peaches) will be analyzed. The information is obtained through Hortgro, an organization that supports the horticultural industry in South Africa. It are perspectives based on a price model that Hortgro created, so these numbers are an estimation. The final sales prices are weighted estimated averages from UK & European Markets in South African Rand (ZAR).

	APPLES		PEACHES	
	Rand	%	Rand	%
Sales Price	194,38	100,0%	71,10	100,0%
Receiver Cost	41,78	21,5%	9,35	13,1%
Receiver Commission	11,30	5,8%	4,57	6,4%
Delivery Price Receiver	141,30	72,7%	57,18	80,4%
CIF	131,40	67,6%	52,98	74,5%
Shipping Cost	28,40	14,6%	8,42	11,8%
FOB	103,00	53,0%	44,56	62,7%
Exporter Commission in Rand	10,93	5,6%	3,91	5,5%
Local Cost	7,07	3,6%	2,42	3,4%
DIP	85,00	43,7%	38,23	53,8%
DFPT Levies	0,75	0,4%	0,71	1,0%
PPECB	0,48	0,2%	0,51	0,8%
Carton Size	12,5		2,5	
Cartons/ton	80		400	

Figure 12: Export Perspectives (HORTGRO, 2014)

Figure 12 gives the detailed costs of the value chain of apples and peaches from a South African port to a receiver in UK or Western Europe. The bold percentages are cumulative. CIF stands for Cost, Insurance and Freight, FOB for Free On Board and DIP for Delivered In Port. For example, the cost for a fruit importer in Europe to get one carton of apples (a carton contains 12,5 kilograms of apples, so one ton has 80 cartons). on board of a vessel in a port in South Africa, will cost the importer ZAR 103,00 (EUR 7.20). This includes costs like haulage and custom clearance in South Africa. However, this does not include the cost of actually getting the carton shipped to a port in Europe. If the importer wants to include this, the importer should pay the CIF price. An importer and exporter communicate before the actual order is placed, if the importer pays the CIF price or the FOB price. If, for example, the importer has a shipping agreement with a shipping line, it will prefer the FOB price since the company already has a party that is responsible for the shipping itself. If, however, the importer trades for the first time in a certain country, it might not have such agreements in place and might prefer the CIF price, so that the exporter will be responsible for the shipment.

Appendix 2 is a graphical representation of the hypothetical cost structure of an apple farmer and a nectarine/peach farmer is approximated. This figure gives a very clear insight in the cost

structure of a farmer and a lot of information about the value chain of these fruits can be derived. For example, Hortgro assumes that a farmer does the packaging (which happens to account for a significant share of the total costs).

There is a reason we discuss these two fruits. Apples and pears have somewhat the same price structure, as well as peaches and other stone fruits, and there is some difference in the cost structure along the supply chain of these two fruits. For the producer of the fruits, the most important percentage in figure 12 is the DIP percentage. As calculations later in this paper will show, the amount of profit that a farmer makes is determined a lot by the DIP price.

Looking at the DIP percentages of apples and peaches, one can see that this number for apples is 43,7% and for peaches 53,8%, a difference of slightly more than 23%. However, there's no reason to argue the profit margins of a peach farmer will be higher just yet. The following calculations will give insights into the cost structure and profit margin of a farmer, after which an approximate difference in profit margin between apple farmers and peach farmers is determined.

To calculate the Net Farm Income (NFI), one should subtract DFPT & PPECB Levies (i.e. certificates), Transport To Port (TTP), Production and Packaging costs (PP). Calculating the crop budgets information further, one would find out that one ton of apples generates 327 EUR in Production and Packaging costs, which is 4.09 EUR per carton. Add up the levies and the costs are 4.17 EUR. The only variable needed now is TTP, which we do not know. Thus, the best approximation of the NFI for apples we can make is the following (DIP is 85,00 ZAR thus 5.95 EUR):

$$\text{NFI} = \text{DIP} - (\text{PP} + \text{Levies}) - \text{TTP} \rightarrow \text{NFI} = 5.95 - 4.17 - \text{TTP}$$

Most apples are produced in the Western Cape and Cape Town is South Africa's biggest port for the export of fruit. Since Cape Town is situated in the Western Cape Province, this means that most of the apple farms are not far away from the port used for export, implying a low TTP. Moreover, to ship a carton of apples from a port in South Africa all the way to Europe, costs 1.99 EUR. One can reasonably argue that transporting apples a couple of hundred kilometers in a reefer container on land in a country with solid highways is less costly than shipping it more than 13000 kilometers on a vessel to Western Europe. Given that reasoning, it is reasonable to assume that TTP costs make up less than $5.95 - 4.17 = 1.78$ EUR, meaning that according to this analysis, the farm owner makes a profit on its apple production.

To make a relevant comparison with peaches, the best approximation of the profit margin is the following ratio: $(\text{NFI} + \text{TTP}) / \text{DIP}$. We will call this value Net Farmers Income Before Transport (NFIBT). For apples, $\text{TTP} + \text{NFI} = 25,32$. In order to obtain NFIBT, we need to divide this number by DIP: $(25,32/85) = 29,79\%$. The higher the NFIBT, the higher the profit of a farm

owner. Using the same calculations for peaches, a NFIBT of 38.97% is derived. The difference in NFIBT between those is an astonishing 30.8% in favor of peach farmers.

This proves that the height of DIP is not much influenced by the production costs but rather by the height of the end price. This is in line with the earlier conclusion in this research that the fresh fruit industry is an industry where the price is determined by the lead firms downstream (i.e. retail companies).

The detailed calculations that support the results in this paragraph are attached in the appendix of this research.

5.3: Value chain of a South African apple

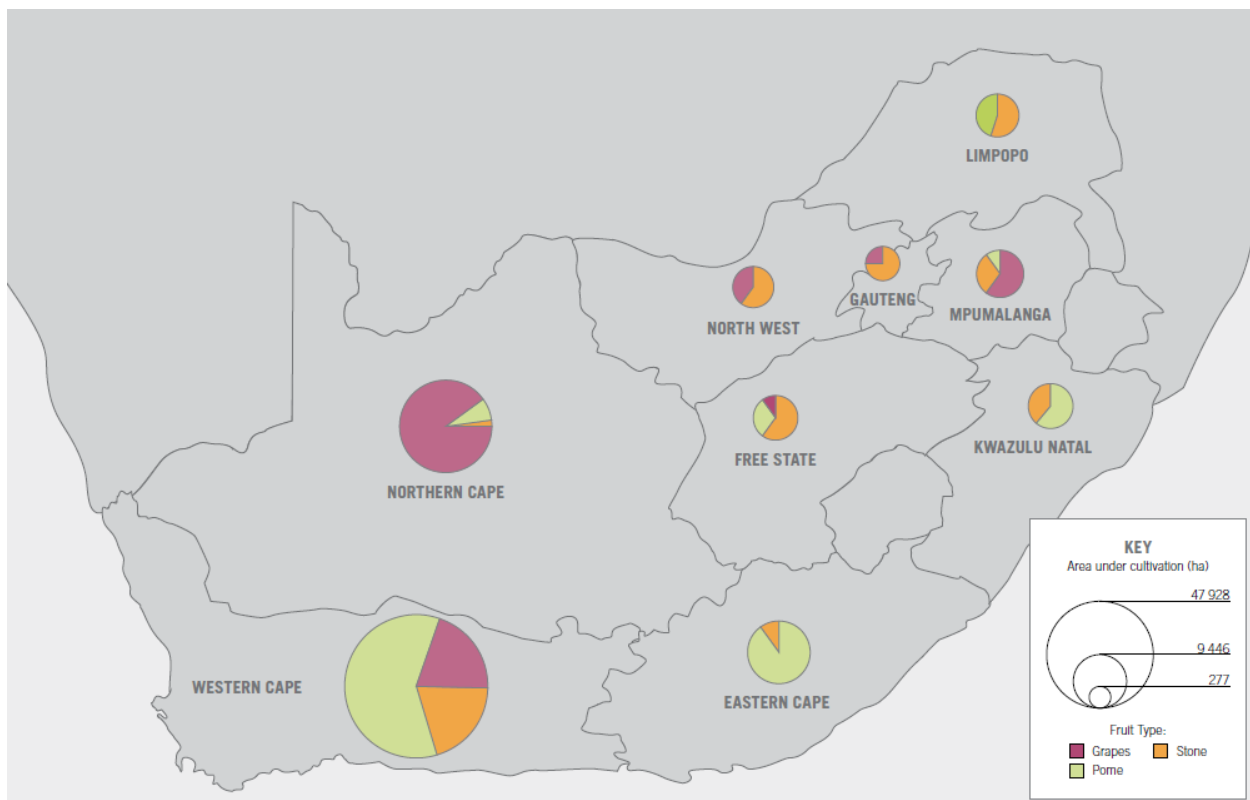


Figure 13: area under cultivation per deciduous fruit type (HORTGRO, 2014)

The apple is the most exported fruit in South Africa. In the season of 2013, the country produced a total of 907 million kilograms of apples. 245 of this was processed, so this leaves us 662 million kilograms of apples, of which 459 million kilograms are used for export, or 69% (USDA, 2015).

During this value chain analysis, this paper will shortly describe the supply chain of a

hypothetical carton of apples that is produced in South Africa and exported to Europe. Please do note that this is a description of an figurative supply chain with figurative collaborations between companies. Any actual agreements or collaborations that might exist between the companies that are used in this example are purely coincidental.

Figure 14 facilitates a graphical interpretation of the process. Do note the importance of refrigerating throughout the chain. DC stands for Distribution Center.

The apple grows in one of the farms of Fruitways Farming in Western Cape, the province that produces the most fruit, and with 74% of all the hectares of deciduous fruit orchards situated in the Western Cape, and thanks to its climate and relative good infrastructure, it is especially the biggest province for deciduous fruit (National Agricultural Marketing Council, 2007).

Fruitways is a farming, package and export company for apples and pears in South Africa. Their clients are main retail chains in domestic as well as foreign markets, with an especially large share of exports to the UK.

For this example, the specific farm is located in Elgin, a small town located 70 kilometers east of Cape Town. From March until September, during autumn and winter, the apples are harvested at the farm. They are put in so-called bins, or wooden boxes that contain approximately 360kg of apples. Right after, the apples need to be pre-cooled. This is a process where the fruit is cooled quickly to a lower temperature to further slow the deterioration process. During this pre-cooling process, the temperature should drop to about 0 degrees Celsius.

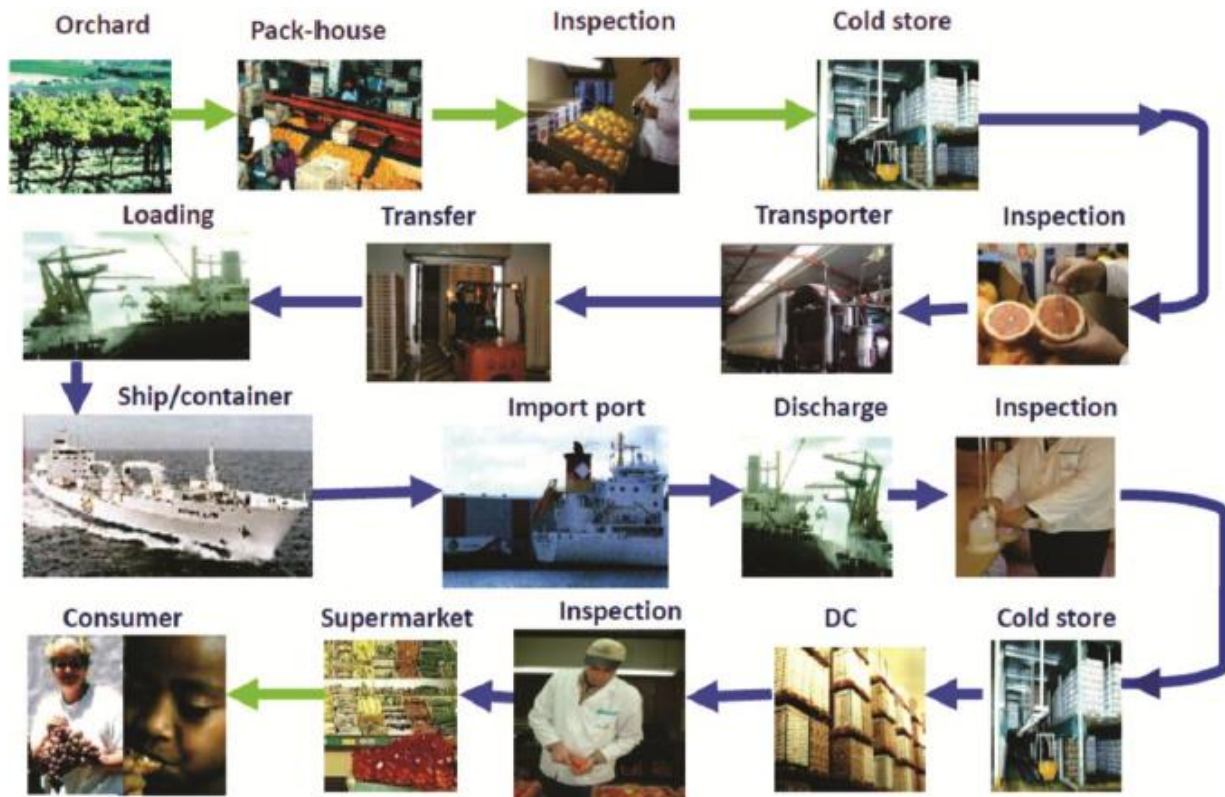


Figure 14: The export fruit logistics cold chain of South Africa (Haasbroek, 2013)

The apples are divided and packaged into cartons of 12,5 kilograms of apples, this is done in a Fruitways Packing facility, also located in Elgin. The packaging is done in a cooled warehouse. Right after the packaging, the inspection will be done by the PPECB, which has a small office in the package facility itself.

The Fruitways Marketing office in Somerset West is now in contact with Olympic Fruit from Barendrecht, The Netherlands. Olympic Fruit agrees to buy one container of apples from Fruitways. Fruitways pays for the costs of the transport to the port, the costs of the terminal operator and the costs of the vessel operator, which means that the payment is done under CIF-conditions (Cost, Insurance and Freight).

The cartons are loaded into a refrigerated container, called a reefer container (Goedhals-Gerber et al, 2014). A 20 feet reefer container has a Maximum Load Weight of 27000 kilograms. This means one reefer container will load 2160 cartons. A truck from FPT Logistics & Terminals is subcontracted by Fruitways, and transports the container to the port of Cape Town. A fruit terminal from FPT will store the fruit in its cold storage, until the Maersk Line loads the container in its vessel towards the port of Rotterdam. After 13 to 15 days it will arrive in Rotterdam. The moment the container is loaded off the vessel, the CIF agreement is satisfied, and Olympic Fruit will take responsibility over the container. They decide to let it stack up for pick-up by APM terminals.

Olympic Fruit now still has to pay export payments to the APM terminal. Once this is paid, Importer Olympic Fruit obtains a pin code from the APM terminal that the container is exempt. This pin code forwards Olympic Fruit to a transport company which they work with, A.F.L. Barendrecht. This company sends a truck to the APM terminal, picks up the container and drives directly to a client of Olympic Fruit, a retail chain in the Netherlands, where the carton of apples is sold to the end consumer.³

5.4: Position on the Global Value Chain

For assessing the position of typical South African fruit producer, the insights gained in chapter four are useful. The current governance type of the fresh fruit industry was *Relational*. Also, research suggested that with lead firms becoming more powerful in Europe, lead firms could take over import firms and the chain could change to a *Captive* one.

When applying this findings to South Africa, an interesting paradox is observed. While a shift in governance type in Europe has been identified, Asian demand for fresh fruit is surging (Eurofresh Distribution, 2015). This means that a lead firm in Europe might try to captivate a South African apple producer, but with demand in Asia surging, the producer could just ignore the big and powerful retail firm and sell in Asia. The two interviews that have been used for this paper have seen the same event happening. While European importers and producers are getting more and more captivated by big European retail companies, South African exporters and producers saw an increasing demand for its high quality fresh fruit in Asia, especially from China and India. For the position on the Global Value Chain in the future, it is hard to predict a possibly shift for these South African companies. While an observable trend is seen in Europe to the *Captive* governance type, this is not to be concluded for the country that is South Africa, due to the increased demand from a couple of importing countries.

5.5: Conclusion chapter five

The two sub question for this chapter were: How is South Africa positioned in the Global Value Chain framework? And: What is the role of logistics in the fresh fruit export industry?

To explain the function of logistics in the fresh fruit export process, paragraph 5.2 supplied industry perspectives for two fruits, apples and peaches. These industry perspectives gave very detailed information about the value added process of every step in the supply chain. Also, calculations were used to estimate profit margins for producers. All this resulted in a clear overview of the fresh fruit export process.

South Africa's global value chain for fresh fruit is in the *Relational* type, with no clear directions for the future, as the consolidation seen in Europe might not result in a shift to

³ Value chain described in a conducted interview, see appendix 3.

Captive in South Africa due to the growing demand for fresh fruit in Asian countries.

Chapter 6: Conclusion

The last chapter of this research will answer the sub questions and main question of the research, as well as giving a recommendation and the chapter ends with a remark about limitations of this research.

6.1: Sub questions

This paper has answered five sub questions:

1. How do global value chains work?
2. What does the world trade of fresh fruit look like?
3. How does the global value chain for fresh fruit look like?
4. How does the global value chain for fresh fruit in south Africa look like
5. How does the fresh fruit export process look like?

The answers of these questions gave a general understanding of the global export of fresh fruit, and a better insight into the framework of Global Value Chains. In this paper a generic global commodity chain was discussed, where the only distinction that was made, was between those of producer-driven industries and buyer-driven industries. From the literature discussed, more and more leading firms in different industries prevailed into buyer-driven firm types, which shows a trend shift from producer-driven into buyer-driven firms in general. Research on the matter continued, and a framework of five governance types was constructed. This research extensively described these five types: *Market*, *Modular*, *Relational*, *Captive* and *Hierarchy*.

6.2: Main question

The main question of this research is: How does the global value chain of fresh fruit evolve both globally and specific for South Africa?

It was concluded that fresh fruit is positioned within the framework as a *Relational* type, with the lead firm and the relational supplier being mutually dependent since lead firms are more powerful than a *Market* or *Modular* type would suggest, but still is dependent of the supplier as end consumers are more and more demanding in terms of sustainability and transparency and the supplier can deliver both. For the position of fresh fruit on the framework, a future shift to the *Captive* type for the European market is expected, as supermarket giants are getting increasingly more powerful. For South Africa, thanks to the increased demand for its fresh fruit in Asia, this future prediction is invalid, meaning that the outlook for South African exporters and producers of fruit is positive.

6.3: Recommendation

This research has shown that fruit producing and exporting companies in South Africa are situated in an interesting position: their historical market, Europe (UK included), consists of lead firms that are supermarket chains. In the past twenty years, these have appeared to become more powerful in the fresh fruit industry. This means importers and producers in Europe are in a narrow position, with profit margins getting lower and expectations growing bigger. However, South Africa companies have been exporting more and more to other countries, especially India and China. These countries not only pay a higher price for the fruit, but also have a less captivated value chain, which means that South African companies can be more flexible with their deliveries to these countries than they would have in Europe otherwise. This research thus recommends South African producing and exporting companies in the fresh fruit industry to focusing more on exporting to Asian markets.

6.4 Limitations

The interviews conducted and some of the research papers consulted for this research have remarked that a big problem in the value chain of fresh fruit right now is the scarcity of reefer containers. This problem is a research topic on its own and not in the essence of this paper to describe. However, the problem is significant and has a direct effect on the value chain of fresh fruit.

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Appendix

Appendix 1: Calculations supporting paragraph 4.2

Industry Perspectives Deciduous Fruit				
	Apples		Peaches	
PP Cost / ton	R	4,675.71	R	8,844.92
PP Cost / carton	R	58.45	R	22.11
Levies / carton	R	1.23	R	1.22
PP + Levies	R	59.68	R	23.33
DIP	R	85.00	R	38.23
DIP -(PP + Levies)	R	25.32	R	14.90
NFI + TTP	R	25.32	R	14.90
NFI + TTP / DIP		29.79%		38.97%
NFIBT		29.79%		38.97%
Difference NFIBT Apples & Peaches		30.80%	Formula: (C37-B37)/B37.	
			This number is in favor of Peaches	

Appendix 2: Crop Budgets (HORTGRO, 2014)

	APPLES	NECTARINES/ PEACHES
	Bearing Rand	Bearing Rand
Yield (ton/ha)	55	25
Number of trees per ha	1 650	1 250
Pre-harvest costs	56 908	62 688
Plant material	-	-
Land preparation	-	-
Irrigation	-	-
Drainage	-	-
Trellising	-	-
Fertilizer	5 281	10 343
Herbicides	881	922
Pesticides	7 418	9 554
Fungicides	2 442	12 579
Rest breaking agents	2 764	-
Consultants	870	870
Seasonal Labour	25 483	19 229
Fuel (diesel)	5 671	5 681
Repairs & maintenance	1 500	1 503
Electricity	3 200	1 845
General	162	162
Pollination	1 238	-
Harvest & Post-Harvest	148 686	111 658
Transport rental	19 360	18 825
Packaging	111 592	83 330
Seasonal Labour	16 297	8 923
Fuel (diesel)	1 136	459
Repairs & maintenance	300	121
Overhead costs	51 570	46 777
Fixed labour	13 642	13 642
Water costs	2 150	2 150
Other overheads	17 430	17 430
Interest on loans	9 589	8 135
Depreciation on orchard	8 759	5 420
Total cost	257 164	221 123

Appendix 3: Interview met Michael Legerstee van Olympic Fruit 13/05/2015

Intro: Sinds 2008 verschillende BV's in één Group. Wanneer is Olympic Fruit (OF) zelf opgericht?

Olympic Fruit 1 januari 2001 opgericht door Thijs van den Heuvel. Begonnen met witte asperges uit Griekenland. Daarna pitloze druiven, was daar één van de opzetters daarvan in Nederlandse markt. Group verschillende BV's, ook een BV in Chili en ook een BV in Spanje. Hoofdman Roodzand (H-R) als export tak in Rusland, Turkije en Balkan. Teeltbedrijven opzetten in Ethiopië en Zuid-Afrika. Diverse klanten, focus op retail vanwege constante, stabiele prijzen, geen dagmarkt maar juist vaste weekprijzen die worden afgesproken.

Cluster 1: markt specifiek

Wat doet Olympic Fruit precies?

Olympic Fruit is de importtak, met specialisme in Citrus en Druiven. Specialisme > generalisme. Voorwaarden als importeur interessant te zijn voor retailers: continuïteit in kwaliteit, continuïteit in beschikbaarheid, duurzaamheid (MVO, hoe ga je om met watervoorziening, kinderarbeid etc.), efficiëntie (kostenefficiënt vanwege marginale marges) en transparantie (inzicht geven in manier van zakendoen, geen foute gewasbeschermingsmiddelen gebruikt, best apart zien van duurzaamheid. Gaat dus over je hele keten en niet alleen van hier in Barendrecht.

Wie zijn jullie klanten?

35% van onze klanten zijn retailers en 65% foodservice (groothandel, Makro, DeliXL). Bij retailers moet je denken aan supermarkten. Voornamelijk Plus supermarkten, Coop, en een deel van de supermarkten van Superuni. Buiten Nederland is OF leverancier voor een aantal grote supermarktketens door heel Europa. Fruit kan door OF worden verpakt. Zo verpakken we bijvoorbeeld fruit voor een supermarkt label uit Zweden. Onze focus ligt op retail. Zou houden wij ons steeds meer bezig met consumertrends, marketing en category management. Handel kun je zo krijgen van leverancier op je zolderkamer, maar je gaat niet binnenkomen bij de retailer. Concurrentie stuk groter bij importeurs dan bij retailers, daarom retailers goede uitgangspositie.

Importeert Olympic Fruit direct vanuit producenten?

Olympic Group heeft twee bedrijfsmodellen: OF is productspecialist in Citrus en Druiven en houdt zich bezig met fruit import. Hoofdman-Roodzand is marktspecialist en exporteert fruit naar andere landen, met name Rusland. We hebben veel contact met de directe producent, ook omdat dit een vraag is vanuit de retailer. Een retailer ziet niet te wachten op een standaard importeur, die wil rechtstreeks contract met de bron, zo ook beter inzicht in de keten. Hierdoor loopt het business model van OF in gevaar en dat beseffen wij ook zeker. We proberen hierop in te spelen door klantrelaties goed te houden en door altijd te kunnen leveren.

Kun je kort uitleggen hoe zo'n importproces in zijn werk gaat?

Telers exporteren vaak naar meerdere afzetkanalen, ook vanwege risicospreiding vanuit de teler.

Teler maakt dus afspraken met rederijen om de reefer containers te regelen. Reefer worden steeds schaarser, vooral vanwege gestegen vraag, voornamelijk in Zuid-Amerika. Grote telers of exportbedrijven hebben contact met rederijen, OF doet dit niet.

Rederijen zijn bijvoorbeeld Maersk en CMA. Deze bedrijven hebben de containers, daar gaat het echt om in deze chain. In de hele chain moeten die reefer worden ingeplugd om koud te blijven. Transit tijd van ZA naar Rotterdam tussen 15-18 dagen. Vervolgens krijgt OF alle exportdocumenten van de partij in ZA. Komt veel bij kijken, eerst moet een instantie in ZA de vracht controleren. Eenmaal in Nederland moet KCB ze controleren. Als de vracht meteen doorgaat naar Rusland dan vindt daar keuring plaats. Als een container aankomt in de haven dan moet er worden gekeken naar inkoopcondities. Ging het hier om een CIF levering of bijvoorbeeld FOB? Vervolgens moet de terminal operator, bijvoorbeeld APM worden betaald voor opslag. Rederij geeft aan OF een pin code door als de container vrij is gegeven, dit geeft OF door aan transportbedrijf dat samenwerkt met OF, en die brengt het of naar de opslaglocatie van OF in Barendrecht, of die rijdt direct door naar de klant. We zien het liefst dat de container direct naar de klant gaat, dat scheelt ons weer opslagkosten.

Zijn er een aantal grote spelers in de markt of is deze juist heel erg gefragmenteerd?

Het proces begint bij de vraagprijs. Trend in de sector zijn nu globale handelsstromen. Klassiek ging het van bijvoorbeeld Brazilië naar Barendrecht, daar wordt het verpakt en doorgestuurd naar Rusland. Tegenwoordig gaat er steeds meer meteen van Brazilië naar Rusland. Het is belangrijk voor Olympic Fruit om dan nog je toegevoegde waarde laten zien door veel contacten te hebben, alles te kunnen leveren. Olympic Fruit kent bijvoorbeeld de Russische markt goed. Fruit afkomstig van landen buiten Europa kunnen nog steeds via OF naar Rusland worden geshipt. Ook maken we steeds meer afspraken met telers en rederijen om zo weinig mogelijk zelf opslag te hebben.

Een aantal organisaties in Midden Amerika hebben een dominante positie in de bananenhandel. Zouden organisaties dit ook met andere fruitsoorten kunnen bedenken?

Bananen moeilijke markt, heel erg van temperatuur onderhevig. Bananen in een reefer container worden in het laatst erbij gezet omdat die nog moeten rijpen. OF doet niets in bananen dus ik weet er verder niet zoveel van. OF wil echter wel een dominante positie vergaren in de Citrus- en Druivenhandel. Dit proberen we te doen door mee te gaan met de trend die retailers hebben. Oftewel, dit willen we bereiken via achterwaartse ketenintegratie. Dus aan ene kant langdurige contracten en relaties aangaan met leveranciers, en aan de andere kant investeren in eigen teelt. Zo zijn we nu voornamelijk in Ethiopië en Zuid-Afrika opties aan het bekijken om een dergelijke business op te zetten. Dit is nog helemaal nieuw voor OF. Ook willen we retailers nog meer betrekken bij bedrijfsvoering van leveranciers. Zo gaan we bijvoorbeeld samen met een Nederlandse retailer naar een leverancier in ZA om toegevoegde waarde voor OF duidelijk te maken.

Zou je kunnen zeggen dat er nu een trend gaande is van *Market* naar *Captive*?

Ja absoluut, tegenwoordig is het een minimale voorwaarde dat je het hele jaar rond kwalitatief hoogstaande producten moet leveren, waar dit vroeger juist nog echt een Unique Selling Point kon zijn. Maar eigenlijk dus al die vijf punten die al eerder was. Steeds meer druk vanuit retailer, OF moet zich daar steeds meer op aanpassen.

Wat zijn algemene dingen/problemen waar je tegen aan loopt bij fruit importeren?

Problemen waar we tegen aanlopen zijn voornamelijk in zaken doen met Rusland. Heel Europa mag vanwege de ban op fruit hun fruit niet exporteren naar Rusland, dus we voeren alleen nog maar door vanuit andere landen. Daarnaast is in Rusland een typische cultuur van betalingsproblemen en andere moeilijkheden zoals het dreigen met claims.

En zoals eerder aangegeven is ook de schaarste voor reefer containers een groot probleem, dit maakt de betrouwbaarheid van leveringen kleiner en transportkosten hoger.

Cluster 2: Toegespitst op ZA

Wat exporteren jullie uit ZA en waarom?

We exporteren veel verschillend fruit uit ZA. In November – Februari kun je eigenlijk alleen maar druiven uit ZA krijgen, druiven kunnen in die tijd niet uit andere landen in het zuidelijk halfrond, zoals Chili worden geleverd. Een ander pluspunt voor ZA als leverancier is dat de klant Zuid Afrikaanse Citrus wil. ZA heeft een unieke marktpositie; het klimaat in ZA is droger dan Zuid Amerika. Geen problemen met zakendoen in ZA specifiek. Wel probleem in 't algemeen, Retailers knijpen de markt uit; zelfde prijzen maar hogere kwaliteitseisen. Mogelijkheid in BRIC landen: soms zelfs hogere prijzen in die landen met heel veel lagere kwaliteitseisen: kansen!

Een bedreiging is ook dat de binnenlandse markt groeit en er daardoor minder wordt geëxporteerd.

Appendix 4: Interview met Conrad Rijnhout van VerDi Import 18/05/2015

Intro: VerDi Import is begonnen in 1998, hoeveel werknemers heeft de organisatie in totaal?
Verdi Import heeft 25 werknemers, dat is zowel personeel dat op kantoor werkt als in de loodsen. Verdi Import focust zich op de klassieke afzetmarkt van fruit, wij zijn echte handelaren. We verkopen onze producten waar we het beste kunnen verkopen, en hierdoor fluctueren de prijzen per dag.

Cluster 1: Markt specifiek

Wat zijn jullie klanten?

Wij verkopen behoorlijk breed, denk aan fruitmarkten in Nederland en andere landen in Europa (met name Engeland en Finland), maar bijvoorbeeld ook aan grote cateraars. We leveren ook een klein beetje aan supermarkten, bijvoorbeeld Boni en Plus. Daarnaast spelen we in op tekorten van supermarkten.

Hebben jullie voor de import van fruit contact met exportbedrijven of producenten?

Zowel direct vanuit exporteurs als direct vanuit de producent. Alhoewel ik graag direct contact heb met de producent is het belangrijk om niet alleen zaken te doen met directe producenten. Dit is om risico te spreiden, een producent kan een slechte oogst hebben gehad of iets dergelijk.

Zijn hier een aantal grote spelers in die markt (zoals bij bananen) of juist heel erg gefragmenteerd?

Alhoewel er wel een paar grotere spelers zijn, is de markt nog steeds erg gefragmenteerd, dit komt omdat het om een erg dynamische markt is, zowel aan de vraagkant als aan de aanbodkant. Daarnaast is er bij grote bedrijven veel verloop van personeel. Klantrelaties zijn erg belangrijk aan de aanbodkant van deze business. Zo kom ik regelmatig langs in Zuid Afrika. In een groot bedrijf zou iedere twee jaar een andere afgevaardigde van het bedrijf langskomen omdat het verloop daar groter is. Zoals ik al eerder zei zie je het wel, dat er wat grotere spelers zijn. Voorbeelden zijn bijvoorbeeld Univeg en Total Produce. Die kopen kleinere bedrijven op, echter houden die kleine bedrijven nog wel hun eigen naam en reputatie. Daarnaast is de markt gewoon heel erg dynamisch. Een grote importeur kan wel een betrouwbare producent hebben, maar de lading kan nog steeds vertraagd zijn. Ondanks technische verbeteringen kan er natuurlijk altijd een douanecontrole plaatsvinden of kan er slecht weer op zee zijn waardoor een container vertraagd is. Dan zal een afnemer een andere leverancier bellen om daar zijn fruit af te nemen.

Iedereen die fruit exporteert vanuit Zuid Afrika moet voldoen aan de eisen van de PPECB. Daar betaald een bedrijf een kleine fee aan, en de PPECB zorgt voor de handhaving van fruit.

Wat zijn algemene dingen/problemen waar je tegen aan loopt bij fruit importeren?

Het is een erg dynamische business met alle gevolgen van dien. Het kan zomaar dat volgende week de vraag voor citroenen in China heel groot is en daardoor de prijs ineens een stuk hoger

wordt. Prijsfluctuaties zijn dus grote problemen. Daarnaast hebben we last van hoge transportkosten die worden veroorzaakt doordat een aantal grote spelers in de rederijwereld veel macht hebben.

Cluster 2: Toegespitst op ZA

Wat voor problemen kom tegen bij het importeren van fruit uit Zuid Afrika?

Het grootste probleem is duidelijk de schaarste. Bij opkomende markten is er steeds meer vraag naar goed fruit uit Zuid Afrika. In China en India zit een grote groep welvarende mensen, die gewoon heel erg veel willen betalen voor fruit. Echter zijn daar de eisen soms wel strenger: zo moeten sinaasappelen die naar China worden geëxporteerd tenminste 21 dagen-1 graden Celsius gekoeld zijn alvorens het in China aan komt. Opkomende markten in het Midden Oosten, zoals Saoedi Arabië hebben daarentegen weer minder strenge eisen.

Nog een probleem van ZA is de kosten van reefer containers. Het is goedkoper om een reefer container uit India te laten komen dan uit ZA, terwijl een container van India niet via het Suezkanaal gaat maar juist onder ZA door naar Europa vaart. ZA is voornamelijk een exportland en importeert bijna geen fruit, hierdoor kunnen grote bedrijven zoals Maersk misbruik maken van hun monopoliepositie. Dit is ook het geval in Zuid Amerika, maar niet het geval in fruit-exporterende bedrijven in Azië.

Wat zijn de voordelen van het importeren van fruit uit ZA?

Strenge controle door PPECB, mede daardoor erg goede kwaliteit. Transportkosten zijn lager dan fruit uit Brazilië en voornamelijk lager dan de kosten uit Chili. Bureaucratie is laag en communicatie verloopt erg goed met Zuid Afrika.

Kun je verklaren waarom er zoveel werkloosheid is in Zuid Afrika maar tegelijkertijd er een grote vraag is voor Zuid Afrikaans fruit?

Als ik een boerderij bezoek in Zuid Afrika dan zie ik daar voornamelijk werknemers uit bijvoorbeeld Zimbabwe, Namibië en Botswana werken. In Zuid Afrika is er in enige vorm sprake van een sociaal stelsel, waardoor veel mensen in Zuid Afrika te lui zijn om daadwerkelijk te gaan werken.

Jullie verkopen alleen stone fruit uit Spanje. Waarom verkopen jullie geen stone fruit uit ZA?

Dit is iets wat we niet het hele jaar rond willen hebben. Weinig mensen in Nederland kopen bijvoorbeeld nectarines in de winter. Enkel grote supermarkketens verkopen nectarines in de winter, omdat veel consumenten daar kopen. Een kleine groenteboer op de hoek gaat niet een hele pallet afnemen in de winter.

Heeft VerDi Import geen last van het feit dat Spanje haar positie als fruit producerend land wil behouden?

Een duidelijk voorbeeld is het probleem van Black Spot in sinaasappelen. Dit is een virus dat op de schil van sinaasappelen zit. Het is bewezen dat dit virus zich niet kan verspreiden zodra het

verplaatst worden. Spanje zegt daarentegen dat dit wel het geval is, waardoor ze de EU zo ver hebben gekregen dat Zuid Afrika heel zorgvuldig haar sinaasappelen moet inspecteren. Daarnaast zit er na 15 oktober importhellingen op sinaasappelen buiten de EU. Dit komt omdat vanaf dan het seizoen van sinaasappelen in Spanje begint.

ⁱ 1: "Big demand for South African lemons" Freshplaza.com: <http://www.freshplaza.com/article/138087/Big-demand-for-South-African-lemons>

2: M. Legerstee, see appendix 3