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Organizational Structures in International High Value Food Chains

Evidence from Latin America



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**Organizational Structures in
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Part I: Organizational Structures in Latin American Non-Traditional Agricultural Export Supply Chains

I.1: Governance and Standards in Chilean-German Food Supply Chains

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1. Introduction

Today Chile is the Latin-American country with the most stable economy and the highest GDP growth rates. In contrast to Asia, this growth has not been driven by emerging manufacturing industries but by the agricultural sector. Thus, in the past three decades, Chile's non-traditional agricultural exports (NTAE) have significantly increased and, as a result, have strongly transformed rural areas in Chile (Challies and Murray 2011; The World Bank 2011). The NTAE strategy which was implemented by the military government of Chile in the late 1970s turned out to be very effective (Challies 2010). For instance, after only two decades, Chile became a leading exporter of farmed salmon and fresh and processed fruits. In the year 2004, Chile established a new agricultural and trade policy with the aim of developing and enhancing the agricultural export sector and making Chile among the top 10 exporters of agricultural products world-wide by the year 2015. Due to increasing globalization, companies are increasingly incorporated into the networks of international agri-food value chains and have to meet consumer demands in countries of the global North such as Germany (Challies 2010; Rivera Aedo and Lakner 2011). Vertical coordination as well as private and public food safety standards play an increasing role in Europe and the rest of the world (Theuvsen et al. 2007; Gawron and Theuvsen 2009). Especially the private standards are of particular interest due to the fact that they are emerging as main drivers of agri-food supply-chains (Henson and Reardon 2005; Henson 2006; Swinnen and Maertens 2007). These challenges, in connection to the ambitious goals of the Chilean agricultural policy and the rapid export growth, mainly raise two questions:

- How are Chilean export-oriented food supply chains organized and how are the companies along these chains working together?
- Are the chains capable of reaching the ambitious political goals?

To address these questions, we will first show the development of Chile's export orientation in agricultural products and the importance of the German market. An exemplarily analysis of the supply chains of Chilean salmon, raspberries and avocados exported to Germany will follow (Perez-Aleman 2005; Rivera Aedo and Lakner 2011; Challies 2010).

2. Chile's export orientation in agricultural products and the importance of the German market

In the past three decades Chile has pursued a strategy of strongly increasing exports of non-traditional agricultural exports (NTAE) (Challies and Murray 2011). Thus, the agricultural production was shifted away from traditional agricultural products to non-traditional agricultural exports (NTAE) such as fruits, vegetables and fish, in order to improve producer livelihoods. In the late 1970s, a free market reform was introduced by the military government of Chile under General Augusto Pinochet (Humphrey and Memedovic 2006; Challies 2010).

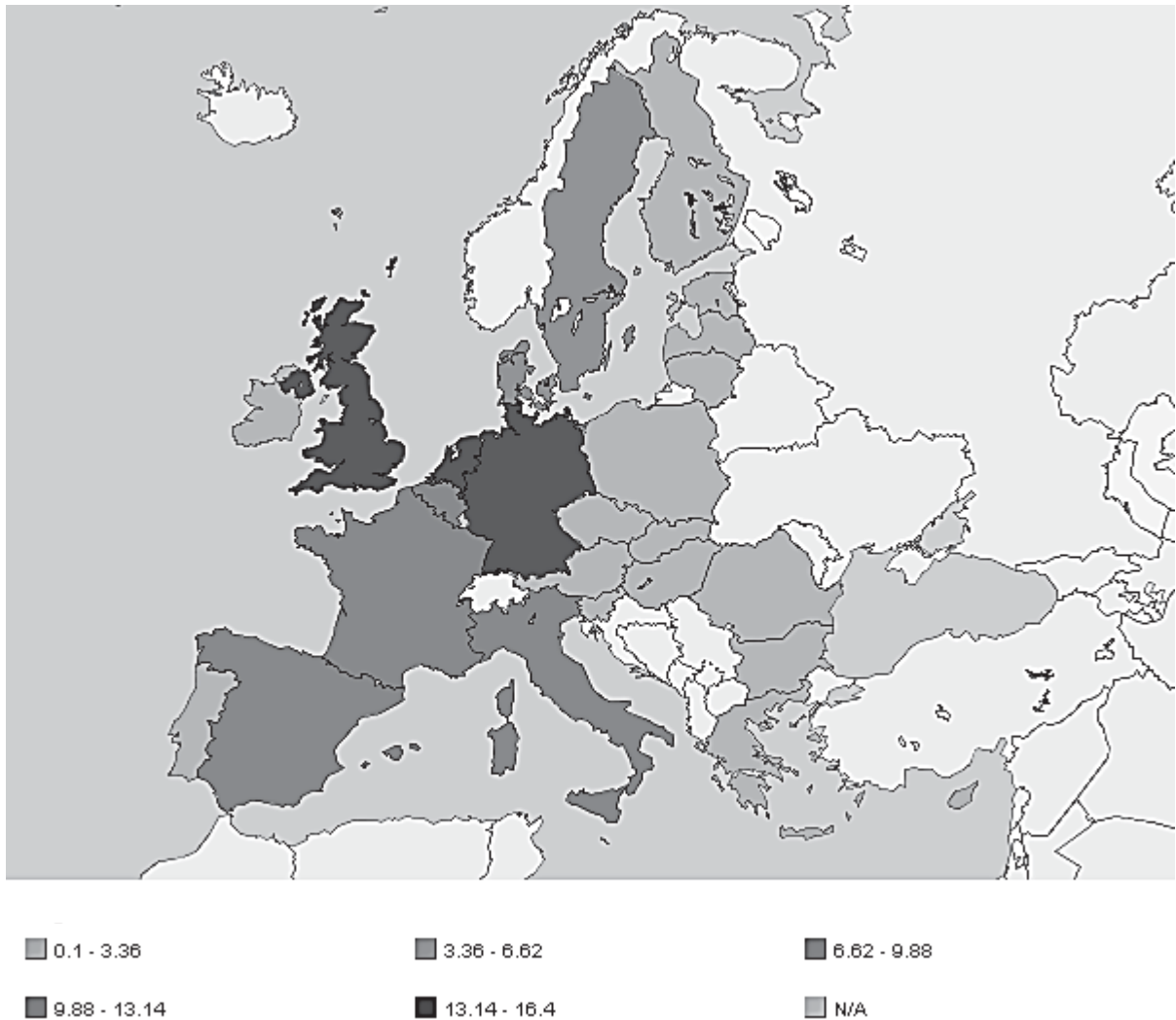


This reform included a “complete liberalization and deregulation of the economy to foreign trade and the reordering of the productive activity” (Rivera Aedo and Lakner 2011) and caused a deep recession accompanied by repression. At the same time, the free market reform increased the export orientation as well as foreign investments in the Chilean agricultural sector. The export orientation supported the production of NTAE products. This NTAE strategy turned out to be very effective. Within only two decades, Chile became not only the world’s largest exporter of farmed salmon but also a major exporter for fresh and processed fruits and other agro-industrial products. In the year 2004, the vision of Chile as a “Potencia Alimentaria” was established as part of a new Chilean agricultural and trade policy with a dual aim: it planned not only to develop and enhance the agricultural export sector, but also to make Chile belong to the top 10 exporters of agricultural products world-wide by 2015. In order to reach this aim, the private-public organization “Chile Food Power Council” was founded in 2007, creating the necessary regulatory frame work as well as the operational environment (Perez-Aleman 2005; Rivera Aedo and Lakner 2011; Challies 2010).

Today, Chile has free trade agreements with countries all over the world. Europe is Chile’s second most important trading partner in goods (Ottens 2011; Perez-Aleman 2005; Rivera Aedo and Lakner 2011; Challies 2010). Especially Germany is a large export market for agricultural products and, thus, significant for the Chilean agricultural export industry.



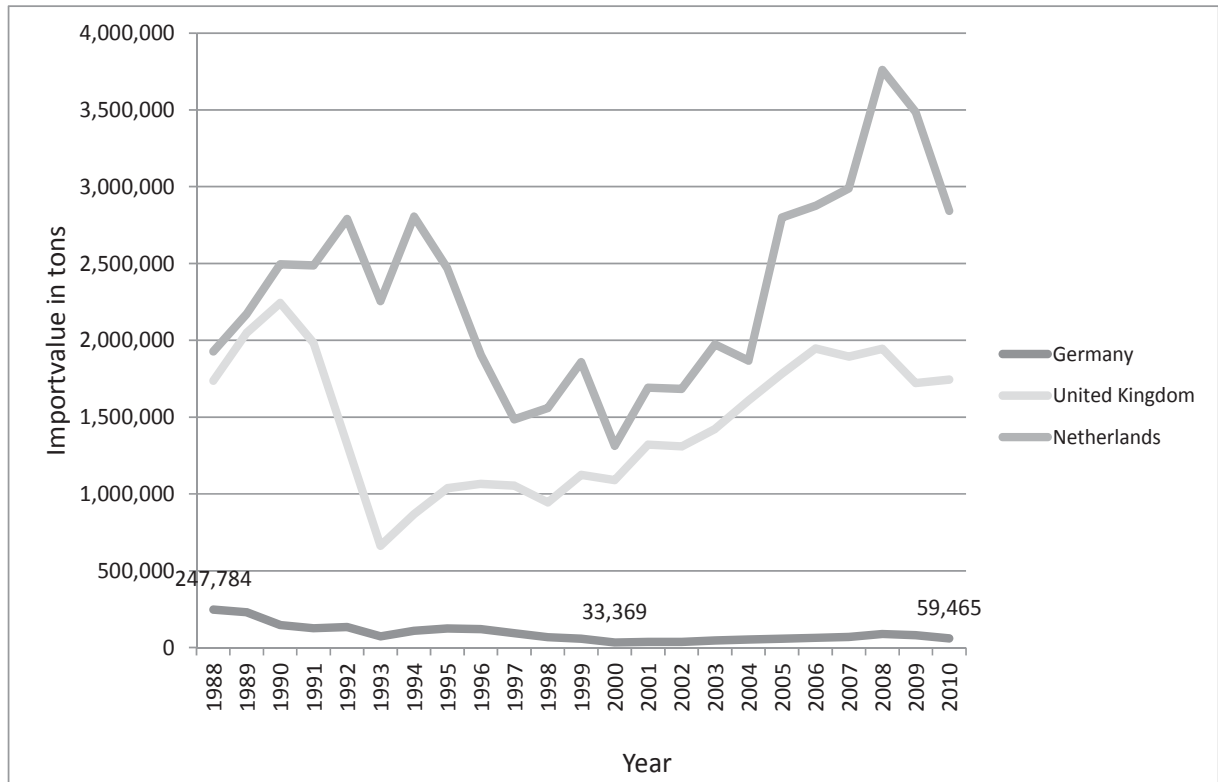
Figure 1: Extra-EU27 trade of foods, drinks and tobacco by import shares in %



Source: Eurostat (2010)

In the EU27, Germany is behind the Netherlands and before the UK, the second biggest importer of the product group “food, drinks and tobacco” from non-EU27-members (figure 1). In 2009 Germany imported 7.5 million tons of food and live animals with a value of 9.8 billion Euros from non-EU27 members. 1.8% of these imports are supplied by Chile which corresponds to import values of 179 million Euros and 88,077 tons (Eurostat 2010; Eurostat 2011). Figure 2 illustrates in detail that the value of Chilean exports to Germany are generally on the decrease since the late 1980s. Within the last 22 years the German import value of food and live animals decreased by about 76% from 247,784 tons in 1988 to 59,465 tons in 2010 (Eurostat 2011).

Figure 2: Chilean export values of food and live animals to the Netherlands, the United Kingdom and Germany since 1988



Source: Eurostat (2011)

This development is surprising when considering Chile's quite ambitious agricultural and trade policy and the fact that Chile's exports in food and live animals are rapidly on the rise to the Netherlands (since 2000) and the UK (since 1994) (Rivera Aedo and Lakner 2011; Eurostat 2011). This leads to the assumption that the reasons for this development can be found in the organizational structure of the value chains. Therefore, we will analyze the supply chains of Chilean salmon, raspberries and avocados exported to Germany.

3. Selected supply chains of major Chilean food exports to Germany

3.1 The Chilean salmon industry

The fish sector is very complex and provides an important export option for many developing countries in the world (Wilkinson 2006). In 2000, 56% of the world's fishing exports were produced and exported by Chile with 95% of this export volume being salmon exports (Perez-Aleman 2005). Fish also constitutes most of the Chileans agricultural product exports to Germany. In 2009, Chile exported 13,658 tons of fish to Germany with a total value of 84 million US\$, making Germany the leading importer of Chilean salmon in the European Union (Inter-American Development Bank 2011; Fischer 2010).



Table 1: Chilean salmon products exported to Germany by companies in 2009

Company	Export value (US\$)
Frozen fillets of Atlantic salmon and Danube salmon	35,366,266
Acuinova Chile S.A.	8,402,076
CIA PESQUERA CAMANCHACA S.A.	6,478,650
Empresas Aquachile S.A.	3,974,657
Cultivos Yadrán S.A.	2,843,432
Comercial Austral S A	2,714,887
Salmones Friosur S.A.	2,293,597
Granja Marina Tornagaleones S.A.	1,425,034
Servicios de Acuicultura Acuimag S.A.	1,255,910
Sea Garden S.A.	1,227,545
Congelados Pacífico S.A.	736,968
Frozen pieces of Atlantic salmon and Danube salmon	17,098,368
Invertec Pesquera Mar de Chiloé S.A.	9,739,494
Congelados Pacífico S.A.	2,692,227
Empresas Aquachile S.A.	1,159,072
Pesquera Los Fiordos Ltda.	934,577
CIA PESQUERA CAMANCHACA S.A.	893,320
Cultivos Yadrán S.A.	812,712
SOC DE INVERSIONES REBOLLEDO FERREIRA LIMITADA	443,487
Salmones Multiexport S.A.	234,166
Integra Chile S.A.	146,256
Marine Food Chile S.A.	33,932
Frozen other meat of Atlantic salmon and Danube salmon	13,368,303
Cultivos Yadrán S.A.	6,154,580
Salmones Multiexport S.A.	2,742,122
Cultivos Marinos Chiloé S.A.	2,490,870
CIA PESQUERA CAMANCHACA S.A.	531,475
Multiexport Foods S.A.	311,986
Acuinova Chile S.A.	220,857
SALMONOIL S.A.	163,725
Comercial Austral S.A.	156,540
Sociedad Comercializadora Alto Chamiza Ltda,	156,176
Congelados Pacífico S.A.	152,225
Frozen pieces of Pacific salmon	4,286,730
Invertec Pesquera Mar de Chiloé S.A.	3,310,969
Empresas Aquachile S.A.	888,093
Sea Garden S.A.	87,668
Frozen whole Atlantic salmon and Danube salmon without livers, roe and milt	1,585,873
Multiexport Foods S.A.	1,301,654
Empresas Aquachile S.A.	284,220
Frozen headed and eviscerated Atlantic salmon and Danube salmon without livers, roe and milt	106,686
Multiexport Foods S.A.	78,218
Servicios de Acuicultura Acuimag S.A.	18,316
Empresas Aquachile S.A.	10,152

Source: ProChile (2011)

Table 1 provides a detailed overview of the Chilean salmon exports to Germany in 2009. Most of these exports were frozen fillets, frozen pieces and frozen other meat of Atlantic



salmon and Danube salmon. Frozen whole Atlantic salmon and Danube salmon without livers, roe and milt, frozen headed and eviscerated Atlantic salmon and Danube salmon without livers, roe and milt and frozen pieces of Pacific salmon were also exported from Chile to Germany in 2009 (ProChile, 2011). All of these products have a similar supply chain. After being harvested on the fish farm, the salmon are packed into bins with ice and sent to the processing plant by truck where they are processed into the different kinds of products. All products which are produced for the export to Germany are frozen and stored in the cool storage. The frozen fish is then packed into containers which are sent to the processing plant by the shipping company. These containers are then transported to one of the Chilean ports. The most important ports in Chile for exporting salmon are in Valparaiso, San Antonio, Lirquen, San Vicente. From these ports, the frozen salmon products are shipped to the German ports in Hamburg and Bremerhaven. The wholesalers or retailers which receive the frozen salmon products distribute them to consumers directly or reprocess them in German processing plants before selling them in supermarkets (Colvin, 2011).

The Chilean salmon industry is highly concentrated in a region 1,000 km South of Santiago called the Region Los Lagos (or 10th Region) and provides about 55,000 jobs. The industry consists of 90 companies, 70% of which are located in the Region Los Lagos (Perez-Aleman, 2010; Felzensztein, 2010). Furthermore, the salmon industry is characterised by an increasing participation of foreign firms and increasing vertical integration (backward and forward) in the supply chain. For example, the large enterprises Marine Harvest Chile (Netherlands) and Mainstream (Norway) belong to the leading firms in the Chilean salmon industry as well as Aquachile (Chile), Camanchaca (Chile), Multiexport (Chile) and other Chilean companies. While Marine Harvest Chile and Mainstream mainly export their products to North and South American and Asian countries, the Chilean export companies sell large amounts of salmon to Europe, especially to Germany (table 1). All of these firms have in common that they are vertically integrated. Nevertheless, they also make use of subcontracting and outsourcing (Perez-Aleman, 2005; Iizuka, 2004; Fischer 2010, ProChile, 2011). Especially the stages of the supply chain from the production to the shipping in Chile are highly vertically integrated. Thus, a typical export company owns the salmon farm, the processing plants and the commercial and administrative units. The frozen salmon is sold to import companies in the particular countries. The export companies are connected to the import companies by contracts. The duration of these contracts depends on the import companies' marketing strategy. The contracts tend to be very short if the import company operates on a spot-market basis, but the export companies also have contracts which have a duration of up to one year. These contracts usually define volumes, prices and the specifications of the product. The most important product specifications fixed in the contracts are the type of processing, packaging, microbiological characteristics and analysis of the salmon (Colvin, 2011).

In addition to increasing vertical integration, the companies in the Chilean salmon industry are horizontally cooperating with each other. In this regard, the private institution Salmon



Chile is the most important industry association because it includes most of the salmon companies in Chile. This association represents the interests of the industry on national and international levels and supports the companies in improving farming practices, finding new sales markets in the world and solving problems abroad by taking the leadership of the matter. Additionally, Salmon Chile is very important for managing crises in the industry such as the ISA (Infectious Salmon Anaemia) outbreak in 2007. In commercial issues, the Chilean Salmon companies are supported by the governmental institution ProChile (Asche, Hansen and Tveteras, 2010; Colvin, 2011).

As previously mentioned, the Chilean salmon industry was affected by ISA. Although some of the companies already had experiences with ISA in other production countries, the industry suffered greatly by the disease for several reasons. First, the production companies focused on scale economies and not on disease management since relevant diseases did not exist at the beginning of salmon production in Chile, because salmon is an exotic product in Chile. Second, production risks had been overlooked by the industry and risk reducing measures had not been implemented. Third, an existing lack of transparency accompanied by infrequent reporting of the disease allowed the virus to go unnoticed by the industry at large. Fourth, whereas other salmon diseases can be contained through medical treatment, the ISA virus results in a very high mortality rate. In this regard, ISA led to a high decrease in salmon production and in smolt release. Thus, the Chilean production of Atlantic salmon decreased from 379,000 tons in 2008 to 211,000 tons in 2009 and to only 98,000 tons in 2010. It can be assumed that the damage caused by the disease will be long-term and the industry will only be able to recover very slowly. Therefore, it is even more important that the companies on the production and the export levels of the supply chain work more closely together to hold the disease under control (Colvin, 2011; Asche, Hansen and Tveteras, 2010; Cottet et al., 2010).

The Chilean salmon industry is subject to several public and private standards. The Codex Alimentarius, containing a Committee on Fish and Fisheries Products, together with the WTO SPS/Technical Barriers to Trade agreements constitute the international framework for food safety. This framework aims at trade liberalisation and the protection of the health of humans, animals and plants. It is likewise included in voluntary international standards, such as ISO. International standards are represented mainly by ISO 9000 and ISO 14000 in the Chilean salmon industry. The ISO 22000 standard is also important in aquaculture since it constitutes a food safety management system and contains the Hazard Analysis and Critical Control Points concept (Iizuka, 2009; OECD, 2011). Most salmon farmers adopt the concept of Hazard Analysis and Critical Control Points for Processing Plant (HACCP-PP) as well as the concept of Hazard Analysis and Critical Control Points for Cultivation Centre (HACCP-CC) since these concepts are included in several Chilean national standards addressing the salmon industry (Iizuka, 2009). In 2001, Environmental Regulations for Aquaculture (RAMA) were established by the Ministry of Economics. These Regulations conform to international environmental standards and include requirements for the prevention, mitigation and correction of



aquacultural impacts in order to achieve a sustainable development of Chilean aquaculture. Later, in January 2002, the so-called Sanitation Regulation (RESA) was established in order to protect, control and eradicate hazardous diseases in aquaculture, especially in salmon farming. Furthermore, the government aimed at establishing private-public collaborations such as the Clean Production Agreement which was signed by the Association of Salmon Industries for the first time in 2001 (Iizuka, 2004). There are also regional standards, such as Sistema Integrado de Gestion (SIG), Acuerdo de Produccion Limpia (APL) and Codigo de buenas practicas (CODIGO), which all address the salmon industry (Iizuka, 2009).

3.2 The Chilean raspberry industry

Chile's second most important agricultural product export to Germany is fruit. In 2008, Chilean fruit exports to Germany amounted to 43,995 tons with a total value of 82.9 million US\$, with fresh raspberries representing 47.31 tons with a value of 147,141 US\$ and frozen raspberries represent 5,022.76 tons with a value of 13,683,503 US\$ (Inter-American Development Bank, 2011; ProChile, 2011). The raspberry sector is not, and probably will never be, as important in terms of GDP and national export earnings as the major fruit sectors but "(...) it is highly significant for smallholder grower livelihoods at the local scale" (Challies and Murray 2011, p. 37). Since the sector fits very well to smallholder cultivation, the raspberry industry is characterized by a particularly high participation of smallholder farmers. "In this sense, the development of the sector also represents an opportunity from the point of view of the state, which has declared its intention to support competitive smallholder agriculture, and is keen to showcase its efforts in this respect" (Challies 2010, p. 3). Due to these specific characteristics, which are contrary to those of the salmon supply chain, the raspberry supply chain is an interesting object of analysis (Challies, 2010).

In 2008, Chile exported raspberries with a total value of 13,830,644 US\$ to Germany (table 2). These raspberry exports exclusively consisted of frozen and fresh raspberries. Although raspberries are generally processed in various ways, such as pulp, juice, freeze-dried and dehydrated fruit, the most common processing in the raspberry industry is to freeze the berries. There are two different types of freezing raspberries: "individually quick freezing" and "block freezing" (ProChile, 2011; Challies, 2010).



Table 2: Chilean raspberry products exported to Germany by companies in 2008

Company	Export value (US\$)
Frozen raspberries	13,683,503
Exportaciones El Sauquito E.I.R.L.	2,482,961
Iansagro S.A.	1,128,633
Arlavan S.A.	884,449
Valles Andinos S.A.	872,044
Nordex S.A.	782,753
Exportadora e Importadora Latinfruits S.A.	757,861
Exportadora Copramar Ltda.	640,404
Exportadora Frucol Ltda.	616,481
Framberry S.A.	580,095
Exportadora e Importadora Maule Ltda.	468,648
Fresh raspberries	147,141
Hortifrut Chile S.A.	79,178
Sociedad Tergreen Ltda.	51,863
Comercial Fruticola S.A.	16,100

Source: ProChile (2011)

Despite of the relatively small market shares, Germany is an important importer of Chilean fresh raspberries while North America is the main importer (Challies and Murray, 2011). Chile produces raspberries predominantly for the international market with the advantage of exporting to the global North in off-season (Toledo and Engler, 2008). This is due to the short shelf-life of about 5 to 7 days and the high perishability of fresh raspberries which leads to a high importance of accessibility and proximity to export markets. If the markets are geographically close enough, the fresh berries can be transported by truck or train, otherwise they are transported as air-freighted fruits. Usually, fresh raspberries are sold by supermarkets in punnets; restaurants are a market niche for export fruits and only reached by little quantities. This is different from frozen raspberries. The individually quick frozen berries are indeed offered in different bags in supermarkets, whereas the block-frozen raspberries are used by the importing companies for further processing because of their lower quality (Challies and Murray, 2011; Challies, 2010). As mentioned above, the raspberry products are transported by air-freight to Europe and not by ship, such as the salmon products. After harvest, the raspberries are transported by truck from the fields to the processing and packaging plants. The processed and packed berries are again transported by truck to the departure airport. After the arrival at the destination airport, the raspberries are transferred to airport distribution warehouses from whence they are sent to a customer's distribution center. Finally, the raspberries are transported to retailers or gastronomy (Shelford, 1999).



Especially the perishable nature of the fresh raspberries makes their production and export a challenge, requiring higher quality standards than for frozen raspberries (Challies and Murray, 2011). Chilean raspberry exports must meet the guidelines of:

- GAP (good agricultural practice),
- GHP (good hygiene practice) and
- GMP (good manufacturing practice)

enshrined in EU and US regulations. These public standards are complemented by the major private standards in the EU and the US, the USA's Gap scheme and GlobalGAP. The latter is mainly adopted by the Chilean exporters because it offers market access for both the EU and the US market, thus, providing the possibility to switch markets (Challies and Murray, 2011).

The food crisis of the North American fresh raspberry market in the 1990s also played a role in the establishment and adoption of high quality standards in Chile. Between 1996 and 1998 Guatemalan raspberries were identified as the source of *Cyclospora* outbreaks in North America. This food crisis not only motivated Guatemala to implement stricter food safety controls but also had effects on the competing countries Mexico and Chile (Henson and Blandon, 2007). Whereas the Guatemalan government implemented certifications and quality controls, such measures were provided by the ASOEX (Exporters' Association) in Chile (Agosin and Bravo-Ortega, 2009; Henson and Blandon, 2007). The certifications and quality controls were received well by European supermarkets which increasingly tend to be direct importers of raspberries since intermediaries are rapidly diminishing in this industry (Agosin and Bravo-Ortega, 2009). Despite the strongly buyer-driven chain, there are various governance mechanisms in place which control the nodes of the raspberry supply chain. Whereas the large farmers usually have formal connections to the fruit companies, the small-scale farmers are more loosely connected (Challies and Murray, 2011). Concerning the horizontal cooperation, the most important organization for the Chilean horticultural producers is the Fedefruta F.G. It is a non-profit organization taking care of various matters of Chilean horticultural producers such as protection in case of problems, support, distribution, qualification, research and certification. In total, Fedefruta groups number over 1,000 producers and twenty associations of the horticultural sector throughout entire Chile. The work of Fedefruta especially focuses on incorporating producers in strategic alliances and representing the interests of these producers (Fedefruta, 2012). The counterpart organization of the exporters in the Chilean horticultural sector is "La Asociación de Exportadores de Chile A.G." (ASOEX) which is a private organization representing the interests of the Chilean exporters of fresh fruits and vegetables. This association's purpose is to facilitate and support Chilean fruit and vegetable exports, promote, initiate and protect the trade with horticultural exports, enter new markets and support the professional development of its members. ASOEX also distributes technical and commercial information as well as offers research assistance for the development within the sector. Fur-



thermore, ASOEX is the responsible entity for the management of the international plant protection convention (ASOEX, 2012).

3.3 The Chilean avocado industry

Avocados also belong to the important Chilean NTAEs (Challies and Murray, 2011). In 2007, Chile became the second largest avocado producer in the world behind Mexico. The avocado importers can be divided into two large blocs, Europe and the United States. While the US avocado imports have been increasing continuously, Europe's imports are characterized by up- and downturns. This is due to a lack of consistent supply from traditional suppliers such as South Africa, Israel and Spain on the one hand and the incapability of Chile and Peru to compensate for the variations in supply on the other. This incapability can be explained by the preferences of European consumers for green-skinned avocados (Chile produces mainly black-skinned avocados of the variety Hass). (FAO n.d.; Naamani, 2007). Hence, in 2008, Chilean avocado exports to Germany only amounted to 169,2 tons with a total value of ca. 180,000 US\$; exports stayed at a similar level in 2009 (table 3) (Inter-American Development Bank, 2011; ProChile, 2011). Nevertheless, Germany is considered as one of the key export markets for avocados and the Chilean avocado industry is currently increasing its efforts to expand its export volume to the German market (Crane; Haeussler Perez and Waissbluth Lanis, 2011).

Table 3: Chilean avocado products exported to Germany by companies in 2009

Company	Export value (US\$)
Hass avocados fresh or dried	177,986
Exportadora Propal S.A.	125,186
Exportadora y Servicios El Parque Ltda.	52,800

Source: ProChile (2011)

The Chilean avocado industry consists of approximately 9,900 producers and 16 export companies, but only 2 of them export to Germany. 80% of the production comes from only a quarter of the producers and 85% of the total production is exported by 10 of the 16 exporters. Therefore, the Chilean avocado industry is not dominated by smallholder growers as is the raspberry industry but by big producers. Hass avocados are grown on a total of 26,000 hectares in Chile. 11% of the acreage are in the IV Region, 18% in the Metropolitan Region, 4% in the VI Region; the largest portion is located in the V Region due to the mild climate and the high water quality (Comite de PaltaHass, 2012; Comite de PaltaHass, 2012a; Haeussler Perez and Waissbluth Lanis, 2011).

The avocado supply chain begins with the harvest at the production plant when the avocados have reached a minimum content of 9% oil and 23% dry matter which are necessary for desired quality and transportation. Hass avocados are harvested in a green unripe state, they are not very perishable in comparison to raspberries and salmon. Thus, they last for 45 days until they start spoiling. After harvest, the avocados are filled into 400 kg bins which are signed



with an identification card to secure the traceability of the fruits. Subsequently, the bins are transported to the packaging plant where they are first cleaned on a conveyor with soft brushes and afterwards manually sorted according to damage and quality, before being mechanically sorted according to weight. The sorted avocados are thoroughly packed into cardboard boxes which are available in different sizes depending on the requirements of the import countries. These boxes are piled on pallets for further transportation. These pallets receive not only a specific identification number which ensures to secure traceability but also further detailed information required by the different sales markets the boxes are signed with. Some companies also use of tracking and tracing systems to provide traceability. The packed avocados on the pallets are then cooled to 4°C in precooling chambers before being stored in refrigerated chambers at the same temperature and officially inspected by the “Chilean Agriculture and Livestock Service”. After this, they are transported mainly to the ports in San Antonio and Valparaiso (Lirquen only counts with 10 containers per season). From here they are shipped to Rotterdam, Netherlands, and forwarded by refrigerated trucks to the wholesalers, retailers and supermarkets in the various countries, including Germany. After arriving in Germany, the avocados start maturing when they are exposed to oxygen and the temperature is raised to 22°C. This maturing process takes 4 to 5 days (Haeussler Perez and Waissbluth Lanis, 2011).

The close business connection of the Chilean and the Mexican avocado industries might lead to the assumption that the Chilean avocado industry is also characterized by a low degree of integration as is the supply chain of Mexican avocados (Coronado et al., 2010; Huacuja and Flavia, 2008). Generally speaking, the coordination of the Mexican avocado supply chain can be described as informal due to the fact that most of the supply chain actors are connected via verbal marketing contracts and vertical integration is rare (Romero 2006). Thus “the Mexican avocado sector is characterized by high price variation, low levels of investment in production improvements, and unpredictable variations in the quantity and timing of demand. Prices are negotiated on a daily basis between producers and buyers” (Coronado et al., 2010, p. 3). However, some Chilean producers have very short term contracts and deliver to several export companies while others have an exclusive contract with only one export company for the whole season. Contracts between Chilean avocado producers and exporters cover aspects of commercialization (for a bottom price/minimum guarantee) and technical advisory; in very few cases credits are provided. Additionally, some of the 16 Chilean avocado exporters are vertically integrated and owned in different shares by groups of producers. Nevertheless, they also buy parts of their export products from independent producers. Thus, the connection of avocado producers and exporters in Chile can be described as a mix of different kinds of vertical cooperation. One of the biggest avocado exporters in Chile is owned by 80% of its avocado producers which export their products with this export company. The remaining 20% of these company’s exports are produced by producers which do not own a part of the exporter. The other companies in the top 5 of the Chilean avocado industry are vertically integrated by



about 20% of their export volumes (Haeussler Perez and Waissbluth Lanis, 2011). In this context, it is surprising that the global company Chiquita Chile exports avocados of independent producers, since they sold their own unprofitable avocado farms during 2007 and 2008. At the same time, the Chilean transnational firms work successfully with vertical integration. Santa Cruz, one of the major Chilean transnational export companies for avocados, is predominantly vertically integrated and owns packing houses as well as farms. Additionally, the company has a network of importers available all over the world, including Germany. Other transnational companies for Chilean avocados such as Propal, Cabilfrut, El Parque, Agricom prefer long-term relationships with producers and buyers. Downstream the export companies are usually connected by contracts to the import companies. Most of these contracts are concluded before the harvest season. Another option for the export companies to sell the avocados is to ship the fruits themselves and sell them to import companies in the port of entry. Although a high degree of trust exists between the trading partners, the export companies use of insurance to clarify the liability, e.g. in case of poor quality due to transport damage (Mc Grath et al., 2008; Propal; Cabilfrut; ElParque, 2009; Agricom; Chiquita Brands International 2007; Haeussler Perez and Waissbluth Lanis, 2011).

Despite the differences with regard to the degree of vertical integration, the companies do not differ in their desire to meet the quality requirements of the consumers. Although avocados are not as perishable as salmon and raspberries, their sensory and nutritional characteristics do deteriorate when they are exposed to heat or air. In addition, the avocado industry is affected by the same private and public standards as the raspberry industry. The adoption rate of international quality standards such as GlobalGAP is around 90% at the producer level. This is due to the fact that producers have limited sales options for their products if they are not certified. In general, the supermarket chains in the import countries have been the drivers of the private standard adoption in the Chilean horticultural sector because they have established them as a requirement for the export of products. Thus, the Chilean producers need to adopt private standards in order to obtain access to European sales markets. Further incentives for private standard adoption, such as higher prices, are not provided by the customers (Coronado et al. 2010; Mc Grath et al., 2008; Propal; Cabilfrut; ElParque, 2009; Agricom; Chiquita Brands International, 2007; Haeussler Perez and Waissbluth Lanis, 2011).