

# **Becoming an agri-food super power: Exploring the politicization of the Chilean Food System**

Degree of Master of Science (Two Years) in Human Ecology: Culture, Power and Sustainability

CPS: Human Ecology  
Human Ecology Division  
Department of Human Geography  
Faculty of Social Sciences  
Lund University  
Author: Pedro Glatz  
Supervisor: Vasna Ramasar

**Abstract:**

This thesis examines the creation and development of the modern Chilean Food System. Providing a description of the system focused on the production and consumption areas, the fruit export complex and the salmon industry are characterized. They are situated within the context of the process of neoliberalization experienced by the Chilean society after the Military Coup of 1973. The priority given to the exports sector is described and the role of the national food system as a part of the third food regime is explained. Through a Marxist analysis of the commodification of nature the research shows how the food system plays a fundamental role in the success story of the modern Chile, while causing environmental and social conflicts. A detailed view of the consumption patterns, including a massive increase in obesity rates, will show the changes happened during the development of the new productive sectors. The current disconnection between the production and consumption sectors will be addressed. Taking Mouffe's theory, the thesis will show the apolitical condition of food in Chile, where despite the aforementioned situations, there is a lack of opposition to the food system as a whole. Based on a historical analysis, the research shows the neoliberal inspiration of the policies enacted since the Chilean Military Dictatorship. The need for a different approach to food will be highlighted, based on the evident inability of the hegemonic view to provide a healthy and sustainable diet to Chilean citizens.

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## 1. Introduction

“Por ahora no pido más  
que la justicia del almuerzo.”

Pablo Neruda, las Odas Elementales, 1954

“Sabes tú? Los extranjeros  
nos disputan lo que hubimos  
pero cubren de alabanzas  
la manzana que les dimos.”

Gabriela Mistral, Poema de Chile, 1967.

As long as I can remember my country of origin was represented to me as a paradise-like space for food production. Chile has been traditionally described as a mining country, and the sector still dominates the national economy. However, due to both the specific features of the sector, namely its geographical concentration in the less populated northern region of the country and the type of use that the commodity has, the relationship with the agri-food sector is lived in a much more intense way across the country.

In my case, I was born in the Los Lagos Region in the Southern area of Chile, and besides the omnipresence of potatoes, the biggest impact that an eatable commodity had in my everyday life was undoubtedly the salmon. As a kid this fish represented nature in its purest aspect. I remember vividly the adventure that was going to the sea and trying to catch one of these fierce animals. The reward of coming back home carrying the result of our efforts could be compared to many tales that I had read in adventure books. At the same time, salmon was an aspect of everyday life. You could see it as the source of enormous wealth for a particular family or as the reason for the massive migration directed to the biggest cities of the region. The cause of all this wonder was always located somewhere else, in distant countries where faceless people decided that it was worth it to pay enormous amounts of money to eat our local product.

As odd as it may sound, it is difficult to remember salmon as a big part of my diet, besides the times when we were fishing it with our own hands. I saw the intimidating aquaculture cages as the symbol of people profiting from nature, stealing our fish. Paradoxically, I was the one who

could have been described as a thief, considering that salmon was introduced by those companies into the ecosystem of my region, and the fish that we caught were the ones that escaped from the cages and reproduced naturally. As I grew up I became more and more aware of the “artificial” origin of our most valued animal, especially when, following a huge sponsorship agreement that was signed between the biggest salmon company and the local football club, the team decided to change its traditional green and white t-shirts for the orange and grey so characteristic of the salmon. In addition to this, the sports media started to refer to the team as “los salmoneros” instead of “the dolphins”, the usual nickname, referring to a native mammal species. At that point I started to contemplate for the very first time that there might be something particular about our relationship with salmon, considering how little we ate it and how important and powerful it was.

This brief review of a personal experience illustrates the importance that the food economy has in the Chilean society. My personal connection with the topic was the issue that convinced me to conduct research about this theme. I was motivated by what I experienced as a “banalization of food”. On the one hand, food can be considered to be quite a popular topic in the public discussion. It is common to see debates about the effectiveness of the newly approved nutrition labelling law or the feared effects of climate change in the conditions of production required for our valued export fruits. On the other hand, what has been described as “an explosion of the food scene in Santiago de Chile” by The Guardian (The Guardian, 2017) is currently taking place in the Chilean capital city. If you add to this mixture the common occurrence of food related environmental conflicts, especially the periodic salmon crises that have affected my region in the last decade, the importance of critically analyzing food becomes more acute. What confused me, was the absence of a narrative connecting the dots and inequalities expressed in this contradiction. The potential use of food as a political tool was evident for me, therefore I started to navigate into this fascinating issue.

As soon as I began the process, the complexity of the issue made me realize that the original aim of the research was going to surpass the scope of a master degree thesis. Therefore, I decided to use the thesis as a step towards a more ambitious research agenda. The product of that attempt, writing a text with an academic standard in order to provide a basis for a text oriented to a more general public demanded I focus the inquiries originally thought for the thesis.

With this in mind, the thesis will provide a critical analysis of the development of the current food system, starting with the agrarian economy. A brief summary of the agrarian reform pursued during the 60s and 70s and the subsequent neoliberal policies established by the Military Dictatorship will be provided. The rise of the export model of the food system will be problematized through the mention of the working conditions installed in the countryside and the increasingly experienced environmental problems caused by the food system. The present situation of the food system will be described as a national case of what McMichael (2013) has labelled as the “third food regime”. A focus on the changes experienced by the demand side of the food system is also required. With this in mind, the changes in diet and the debate regarding nutrition will be thoroughly analyzed. While a big part of the Chilean Society (mostly urban) has adopted a western version of the Industrial Diet, causing high levels of obesity, the awareness of a healthy and more sophisticated diet has become a sign of status amongst the middle and higher classes.

Using Chantal Mouffe’s theories, the food system will be situated within the neoliberal hegemony that frames the Chilean society and political system. An analysis of this interaction between three elements will be provided. The first one is the complex and multidimensional concept of food. The second one is the success history of an export-oriented industry that outlines the current and future development of the field, expressed symbolically with the concept “Chile agri-food superpower”. Finally, the contemporary challenges rising across modern food systems will be addressed. The debates conducted and policies implemented in a range of fields will be examined. Among these I have selected, (1) the carbon footprint of the agri-food economy, (2) the obesity and nutrition discussion and finally (3) the crisis experienced by the salmon industry. Topics such as the absence of a strong food sovereignty or peasant movement will be pointed as part of the reasons that explain the “solutions” implemented.

The thesis starts with the definition of the research questions (1.1) followed by background and context (2), where I will give a brief account of the general orientations of the Chilean political economy (2.1). In the same section I will highlight the relevance of the food system through the description of the agri-food superpower public strategy (2.2) and describe the choice of food system as the object of study (2.3). The third section provides the theoretical framework, including the Marxist discussion about commodification of nature (3.1), the food

regime theory (3.2) and the agonistic paradigm proposed by Mouffe (3.3). The section finishes with a summary of the three main models used to interpret the topic of study. Section four describes the methods used (4), with special attention to the analysis of public documents and its limitations. Later I present the analysis of the food system, by describing the evolution of the production sector (5) on two specific areas. The scrutiny starts with an analysis of the agrarian reform process (5.1) and the policies implemented by the Military Dictatorship to redesign the agrarian economy towards an export-oriented model (5.2). The rise of the fresh fruit export complex will be characterized economically, socially and geographically (5.3). A similar overview will be given for the salmon industry (5.4). After this, I will switch the view to the demand side in the food system (6), focusing on the current patterns of consumption and the debate about health, nutrition and obesity rates (6.1). Once situated with this general description I will bring the findings and analysis (7) present in three major topics where the food system has been addressed by the political institutions, namely the idea of sustainable food systems with a look of the situation regarding climate change (7.1), the answer to the constant crisis of the salmon industry (7.2) and the debate about the food labelling law (7.3).

## **1.1 Research Questions**

-How are the food related problems addressed by the Chilean political system? Which is their relation with environmental conflicts?

-How does the historical development of the Chilean political economy, specially the food economy, relate to these practices?

-How does this particular approach to food system relate to the “green policies” implemented in Chile?

-In which parts of the food system are the actors, discourses and policies concentrated? Which reasons explain this approach?



## 2. Background and context

### 2.1 A Neoliberal Revolution

Since the Military Coup was perpetrated in 1973, the Chilean economy has experienced an unequalled change. Characterized as a semi industrialized peripheral economic system (Ffrench-Davis, 2003), the Dictatorship initiated one of the first nation-scale experiments of a neoliberal transformation (Harvey, 2005), which established the foundations of the current Chilean political economy. The traditional success story that has been told to the mainstream audience states that, in opposition to the erratic previous path consisting in a development model dominated by the role of the State, the neoliberal reforms were able to modernize the country. The creation of wealth shaped this society into "the Latin American miracle" (Taylor, 2006). After the violent overthrow of the first socialist government democratically elected in Chile, the Military "Junta" decided to initiate a process of "counter revolution" (Valdivia Ortiz de Zárate, 2003) and follow the advices of a group of economists educated at Chicago University, under the tutelage of Milton Friedman and Arnold Harberger, prominent figures in the until then, irrelevant school of thought called neoliberalism. It seems relevant to situate these events on the global context. The world was experiencing the end of the most successful period of global modern capitalism, characterized by the constrained situation for capital accumulation in the developed countries due to the post war settlement that created the welfare state. (Wallerstein, 2016; Hobsbawm, 1995). It was in this context that the Chilean Dictatorship decided to go full into the neoliberal experiment, by giving "The Chicago Boys" power to overhaul the Chilean economy in ways that no democratic country could have possibly done at that period of time (Delano & Traslaviña, 1989; Moulián, 1997; Harvey, 2005). The nationalizations passed during the socialist government of Salvador Allende were reversed and privatized. Social security, education, public healthcare and education were put under the commandments of the market. Natural resource as fisheries, timber and mining were opened up to private and unregulated exploitation. Despite the claims of originality, the strategy included an intensified focus on the traditional extractivist tendency. As a result the mining and other already established national resource sectors experienced sustained growth. (Ffrench-Davis, 2003). Finally, foreign direct investment and free trade was encouraged, trade barriers where weakened and new incentives and regulations to enhance the insertion of Chile in the global economy put in place (Harvey, 2005; Moulián, 1997). This point will be crucial for the analysis provided by this thesis.

## 2.2 The state of Chile today

Four decades after the Military Coup, the current state of the Chilean society shows the inherent contradictions that this strategy of economic growth has produced. After 17 years of Dictatorship, the democratic opposition was able to defeat The Military Junta in a referendum in 1988. However this came with a cost, the recognition of the new Constitution as valid and the legitimization of the neoliberal reforms. Since the democratic transition started in 1990, there has been an increasingly growing position that described the democratic transition as a formal, but not social democratization (Garretón, 2012; Huneeus, 2014; Atria, 2014). “La Concertación”, the center-left coalition that has dominated the political institutions ever since, did not have major problems of adjusting to the global tide of neoliberal status quo expressed in the Washington Consensus. The most important newspaper in Chile with strong conservative tendencies, coined the term “south-american jaguar” describing the Chilean economy in comparison to the “Asian tigers” (El Pais, 1998). Despite some up and downs, the Chilean economy keeps the model and the economic growth remains somehow stable. The neoliberal system has remained untouched in its main structures. But what has this meant for the organization of Chilean society today?

On the one side the southernmost country of Latin America has become a leading economy within the region, with a strong export-oriented economy, reaching the highest GDP per capita of the continent, currently at 22,197.043 US\$ (World Bank, 2017) and even acquiring the right to become a member of the OECD group (OECD,2017). On the other side, the Chilean society has become one of the most unequal nations of the world. When measured by the Gini coefficient Chile gets a score of 0,505 (World Bank, 2017) placing it in the top 20 most unequal countries in the world. While this situation did not produce major political conflicts during the last couple of decades, in recent years an important process of social mobilization has shocked the previously calm and exceptional country.

This crisis has been characterized as a moment of rising of social movements in opposition to the traditional political parties and their inability to frame any opposition to the neoliberal model and its consequences (Donoso, 2011; Fleet & Guzmán Concha, 2016). Within these social upheavals the environmental conflicts have played a significant role, the most recognizable ones being the opposition to the Hidroaysén dam in the Patagonia (Romero, 2014) and other massive energy generation projects.

However, there is another factor present in many environmental conflicts that has been steadily overlooked, it is the active role that the food system plays in them. So far there has been a lack of frameworks to analyze how entrenched the food and the export-oriented economy is with the rise of environmental conflicts. Even less consideration has been given to the possibilities that this type of analysis can provide to the movements fighting for structural changes to the neoliberal model and alternatives to the status quo. In the last few years Chile has seen successive environmental conflicts related to the salmon and fisheries. In addition to this, the perpetuation of the poor working conditions of the peasantry in the export-oriented food complex (Mendoza & Donoso, 2011; Pinto & Kremerman, 2005). Despite the evident link between these situations and food, a critical approach to the subject is apparently absent from the political and academic discussion. Is the Chilean society experiencing a situation where food is being depoliticized to the extent that we cannot separate food as basic need from food as commodity?

### **2.3 Chile, an agri-food superpower**

In order to characterize the Chilean Food System it is mandatory to define the borders of the concept itself. This concept encompasses the activities of production, processing, packaging, distribution, retail, consumption and disposal of food (UNEP, 2016). Considering the importance of each phase, and the length and scope of this research, I will focus primarily on the production and consumption activities.

To situate the current discussion regarding food systems, we have to go back to the year 2006, at the beginning of the fourth government after the end of the Chilean Dictatorship. A new slogan came onto the scene in the food production sector. It was named “Chile Potencia Agroalimentaria” or “Chile agri-food superpower”. Through a presidential decision a presidential advisory council was created and named with this new motto. An ambitious objective was set: to increase the national income based on exports from the current US\$ 8.000 million to US\$17.000 million by the year 2014 – a doubling of the export income. This growth would have had the effect of giving Chile a position amongst the top 10 economies in the sector. Despite missing the target by a mere US\$ 1.000 million (ODEPA, 2015) the catchphrase has remained popular amongst the field, and it is commonly used by public and private authorities (ACHIPIA, 2016).

Regardless of the abovementioned conflicts within the food system, ironically Chile is experiencing an interesting “momentum” regarding food. In addition to the internationally recognized success case of the major export industries within the food system, namely the salmon and fresh fruit sectors, two parallel tendencies show this trend. On one side a major obesity crisis is already recognized as one of the main challenges. Almost 4 million people (a quarter of the adult population) is considered obese and the number is expected to increase to close to 40% by 2025 (Fundación Chile, 2012; Ministerio de Salud, 2016). This phenomenon is also another expression of the aforementioned social inequality, with evidence showing the link between income and obesity among the elderly population (Albala et al, 2011). The situation is even worse within the young population (Azar et al. 2015). Examining how family income is associated with overweight status, the numbers show that 16,9 % of the children that belong to families situated in the poorest households are considered obese or overweight. This number goes down to 9,6% amongst the children living in the richest households (Chile Vive Sano, 2017). Based on this situation, a recent bill was approved by the Congress, establishing one of the most restrictive food labelling regulations in the continent. On the other side, and again showing the nuances of the food system present in Chile, a major process of “gentrification of food” is taking place. The mix of a growing high cuisine industry, a shift on the diets and products consumed by the middle and upper class and a small but rising urban “food movement” (formed by individuals of these same social sectors), show the vigorous space of politicization that food can be. Initiatives like organic food cooperatives are growing in the capital city of Santiago (El Mostrador, 2016), but they are concentrated in the wealthy areas. Supermarkets with a target market consisting in middle and upper class have also recently incorporated organic vegetables and fruits to their shelves. (La Segunda, 2014).

However, the link between the food system as a whole, specially the conditions of production, and the environmental consequences of it have not been properly analyzed and proposed as a framework of political action. Entering the Anthropocene (Moore, 2016) and considering the urgency of a carbon free economy, the political debate in Chile appears unable to see the possibilities that a change in the food system could imply for the carbon footprint produced by it. In addition to this, the various movements of resistance against the extractivist industry situated within the food system, are mostly local efforts, mobilized by the direct effect of the particular project surrounding them, and not related formally to political movements with a bigger scope, causing the loss of the momentum, and a missed opportunity to make change

possible. The successive mobilization processes that have emanated from the salmon crises are a good example of this and will be analyzed deeper in the next sections.

With the background already set, in the next section we will present the methods selected to accomplish the objectives of the thesis.

### **3. Methods and Methodology**

The main motivations of the research were already described in the introduction. Therefore the original objective of proposing a holistic framework of analysis of food as an eventual concept to enhance political mobilization was reduced to a (still deep) analysis of the creation and development of the Chilean Food System. The research questions are heavily oriented to the role that the political system has had in the evolution of the food system. Consequently the method chosen has been an analysis of primary sources that show the interaction of the State and the Food System during the last 4 decades. With this in mind the sources used include the following data:

- Official databases of the Chilean National Government and International Organizations. National surveys of consumption were also used.
- Newspapers and websites articles.
- Legislative Discussions in Congress.

As shown above, we have chosen various types of primary data, which serves as the foundation for our research. However, in order to fully answer our research questions, we must also include secondary data in our empirical material. A vast amount of them were scrutinized, including academic literature, newspaper articles, grey literature, among others.

The theoretical framework chosen framed the analysis and choice of many sources. Discourse analysis was used within a Marxist orientation, trying to identify process of commodification of nature.

Finally it is relevant to state the limitations of the methods chosen. Because of the aforementioned problems, it was impossible to conduct interviews with key informants. This can be considered a potential problem for the research. However, the research questions orientated the investigation towards objectives that we were confident to achieve with the available sources. The last remark that needs to be made is the condition of personal identification with the influence of the aquaculture industry in the Los Lagos Region in Chile. We must admit that it means an obstacle to “neutrally” analyze the impact of the sector in the southern part of Chile, where the author was born.

## **4. Theoretical Framework**

### **4.1 Commodification of nature**

The analysis of food will be first realized through the lens of a marxist perspective. This approach starts the enquiry with the concept of commodity and its relation to nature. In the beginning of the first Volume of Capital, Marx states that

“A commodity is, in the first place, an object outside us, a thing that by its properties satisfies human wants of some sort or another.” (Marx, [1867] 2010: 27)

This satisfaction of needs that objects provide us is called use-value. However, according to Marx it is not what gives the commodity its specific features. As he points out, there are several objects that can provide the characteristic utility of use-value, such as products whose “utility are not due to labour such as air or virgin soil” (Marx, [1867] 2010: 30). In addition to this, there are objects that are also products of human labour, but not commodities, and food is a particularly useful example to prove this aspect of Marxist theory. Humanity has lived and

developed across millions of years without the existence of commodified food systems, by the means of hunter and gatherer and subsistence agriculture. So, according to Marx, what is the distinctive feature of the process of commodification of nature?

If we do not consider the use-value of commodities, there is another feature left to analyze, the fact that they are all products of labour (Marx, [1867] 2010: 28). We have already mentioned that it is possible to produce objects through labour, as is the case of subsistence agriculture. However, Marx adds another layer of complexity to certain objects that acquire the condition of commodities through certain specific type of labour. He states that the process “must not only produce use values, but use values for others, social use values.” (Marx, [1867] 2010: 30) Consequently, what transforms an object into a commodity is the labour “exercised with a definite aim, an activity that appropriates particular nature-given materials to particular human wants” (Marx, [1867] 2010: 31) This aim is what defines the commodity and results in the transformation of nature-given materials not solely for the matter of personal or even social use, but to produce a “two fold thing” Marx, [1867] 2010: 41, both a use value and exchange value.

The successive reflection of Marx regarding the creation of a universal means of exchange (money) should not obscure what concerns us the most in this section, the process of commodification of nature. He recognizes the need for a matter where the labour is applied in order to produce objects that will be inserted into the logic of exchange. In his words, “the bodies of commodities, are combinations of two elements – matter and labour. If we take away the useful labour expended upon them, a material substratum is always left, which is furnished by Nature without the help of man” (Marx, [1867] 2010: 31).

#### **4.1.2 From fictitious commodities to neoliberal ecologies**

Building on the seminal work of Marx concerning commodification processes, Karl Polanyi proposed one of the first clear expressions of the global capitalist massive process of commodification that was characteristic of the 20<sup>th</sup> Century. In his work he coined the concept “fictitious commodities” to refer mainly to labor, land and money, pointing their essential role in capitalist economies and their apparently irrational designation as commodities. For Polanyi, commodities were “objects produced for sale on the market” ([1944] 2001:75), however we

witness the exchange of things that were not necessarily “produced”, i.e. land. As he stated “land is only another name for nature, which is not produced by man” (Ibid.). Therefore the process of owning, buying or selling land is a fiction, a story that we tell ourselves, but one that has proven to be essential for the development of modern societies.

Even considering the process of commodification of nature already accomplished by the global capitalist economy, it experienced a major boost with the arrival of the neoliberal policies during the 70s and the 80s. As defined by Harvey (2005), neoliberalism consists primarily of a theory of political economic practices, with a focus on the role of individual economic freedom. It is the organization of social systems that recognize and enhance this feature of human societies within a social organization characterized by strong property rights, free markets and free trade. Neoliberalism, according to Harvey, assigns a role to the State consisting in the formation and preserve this type of institutional framework, even by the act of creating markets where they did not exist beforehand. This doctrine proved to be massively influential across the globe, as it was thoroughly implemented, and, as mentioned, Chile was one of the pioneer countries in adopting this trend. However it is crucial to add another layer of complexity to this concept, recognizing that the process of neoliberalization, rather than neoliberalism as a doctrine is what brings more light to the analysis of food and its environmental implications.

Noel Castree states that the scholarship studying this phenomenon acknowledges the object of research as a spatiotemporally variable process, rather than a fixed and homogenous thing (2008). The process of commodification of nature has continued to increase as will be illustrated in this thesis. The Chilean case provides a critical case to analyze the institutional framework put in place to enable the expansion of markets that require the use of natural resources (Tecklin et al., 2011).

With this in mind, it is relevant to describe the originalities of the neoliberal process of commodification. On the one side, the idea of fictitious commodity has reached an unprecedented level, with the frontier of natural and artificial becoming much more unclear. The creation of emission trade schemes is maybe the most recognizable mechanism of allocation of private rights from previously owned commons. However, regarding food systems, the list is numerous, including aquaculture (Longo et al., 2015), the rise of quality certification schemes of trade like fair trade or organic (Eden, 2011) and the creation of finance instruments linked to food (Clapp, 2014).



With this brief description about the process of commodification of nature, we can start to analyze the way that the modern global food system has evolved and provide a framework to analyze the Chilean sector.

## 4.2 The notion of Food Regime

In order to provide a critical analysis of the Chilean food system a global scope is necessary. Therefore, the concept of “food regime” becomes useful, especially considering the aforementioned internationally connected aspect of the food economy. According to McMichael (2009), the concept was firstly coined in 1987 by Harriet Friedman and pursued the goal of approaching the global food economy in a less mechanical way, acknowledging its pivotal role in the global political economy. Traditional interpretations of the evolution of the food system were based on a typical narrative of technological improvements and modernization of the production systems, lacking a focus on the relations of production, the global interconnections and power balances between national economies. Against this view, both authors provided a novel framework that highlighted the links between international relations of food production and consumption to processes of accumulation (Friedmann & McMichael, 1989).

Based on these concept, they propose stages of subsequent food regimes. The first stage, situated roughly between 1870 and 1930 was heavily influenced by the colonial powers and their domination across their overseas territories. McMichael uses the case of Britain as the best example of the dynamics of outsourcing its staple food production to the colonies, while establishing alien patterns of production. However, it is important to distinguish between the so called “settler” colonies, consisting of the United States, Australia and New Zealand; and the “colonies of occupation”. The former established one of the first industrial agricultural systems (Weis, 2013) and provided the nutrition required by the armies of urban workers across the European powers. They fed the growing working classes and kept the wheel of industrial capitalism spinning. (McMichael, 2009). The settler colonies, situated across the Global South, experienced a slower entrance to the food regime logic, characterized by the dominance of export-economies based on single products, like coffee or bananas.<sup>1</sup> This was a pioneer

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<sup>1</sup> The most important sector of the Chilean Economy over this period was the export of nitrate situated in the recently acquired territories of the Atacama Desert. Through a violent war against Peru and Bolivia, the Chilean state gained access to this valued mineral used as fertilizer and started a massive exploitation initiative

application of the Ricardian theory of comparative advantage that has played an important role in the development of the global food economy until the present.

During the postwar years a second food regime came to existence as the United States took the principal role in the global economy and staples played a strategic role during the Cold War. As the Third World development narrative started to become popular, USA re-routed its flows of surplus food to specific countries. The excess of production was caused by subsidies and technological improvements that increased the yields substantially. This represents an important break from production of food for consumption to production of food to maintain an economic system of subsidies and benefits. Therefore, in the midst of a race for industrialization among the periphery countries, their economies could focus on subsidies pointing to create an industrial sector, while they remained loyal to the Western hemisphere and the American area of influence. This was used as development assistance, but was simply another phase in the process of capital expansion on which the notion of food regimes is founded. This framework fits accurately with the agrarian reform process in Chile across the 1960s and 1970s, motivated partially by the shortcomings of domestic staples production during the industrialization process.

Finally, the author proposes a third emergent regime, starting during the late 1980's. This phase is characterized by the emergence of new actors such as China and Brazil and the rise of massive transnational corporations that dominate the scene of food globally. Under the umbrella of the World Trade Organization and the neoliberal tide, the best expression of the power of these companies are the supermarkets and the growing importance they have acquired globally. By acting as oligopolies, these massive companies have acquired an essential position in the food system (Reardon et al., 2010). This has been possible due to the technological improvements across the supply chains, a process that has shaped the formation of a global trend of privileged consumers with all year round access to fresh fruit, vegetables and fish. Once again the food regime theory will prove to be a prolific lens of interpretation for the Chilean agricultural political economy, characterized by a successful fruit-export complex and the aforementioned aquaculture.

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that dominated the economic landscape for decades. The scope of this thesis makes it impossible to go further on this particular topic, but it shows how embedded has the food economy been with the process of capital accumulation and expansion (Bellamy Foster et al,2009 and Hornborg, 2011)

A final aspect developed by McMichael refers to the rise of diverse foci of tensions across the food economy. Movements such as Food Sovereignty, Slow Food, Community Supported Agriculture and a growing demand for organic food are just the most recognizable expressions of this situation. This particular aspect will be also highlighted while studying the Chilean experience, especially the discussion about new policies regarding climate change and food labelling.

Given this general background about the theoretical approach that will be used to analyze the Chilean food system, the next step requires a more general discussion about the Chilean political debate and provide the lens of interpretation that will be applied to analyze the policies implemented in the food sector.

### **4.3 On the political and the limits of discussion within Chilean neoliberalism**

#### **4.3.1 What is the political?**

The framework selected to examine the phenomenon of the food system and the way that the political system addresses it in Chile is the work by Chantal Mouffe on the distinction between *the political* and *politics*. This method of analysis is based on the post-marxist reflections started by herself and Laclau during the 80s (Laclau & Mouffe: 2001) and continued through the umbrella concept of agonism (Mouffe: 2005, 2011). Within this interpretation of society, the development of the global capitalist society has become intertwined with the hegemony of a liberal way to understand the political aspects of our social life. It is on this specific aspect where our inability to oppose the biggest challenges of our current times is rooted, specifically the dreadful social consequences of the current global capitalist system and its principal expression, neoliberalism. These massive events, e.g. global inequality, environmental devastation or climate change, are understood and approached as technical issues to be solved within a given framework, not disturbing realities that need to be attacked with political critique, mobilization and transformation of the social structures. In opposition to this she states:

“by the political I mean the dimension of antagonism which I take to be constitutive of human societies, while by "politics" I mean the set of practices and institutions through which an order

is created, organizing human coexistence in the context of conflictuality provided by the political” (2005:13)

Therefore, she situates the antagonist opposition of social interpretations of reality as the basis of human culture, and, in addition to this, considers the current social arrangement as an act of hegemony, and consequently, of exclusion of those that not adhere to those principles. Based on this, neoliberalism has proceeded to deny the political within human societies, expressed in acts as symbolic as Margaret Thatcher declaring “there is no alternative” or Francis Fukuyama announcing “The End of History”. The action of limiting the scope of political agency for individuals and groups within modern societies is the basis for the limited notion of *the political* that we should oppose, and will play a fundamental role in the successive analysis of this thesis, regarding the Chilean Food System.

#### **4.3.2 A limited role for radical politics**

If we adhere to the conclusions proposed by Mouffe, the consequences for radical politics are essential. As it will be thoroughly exposed, in the current political debate, opponents of the mainstream neoliberal model are completely excluded of any relevance within the institutions. However in the field of environmental politics, this situation becomes even worse.

One of the characteristics of the conventional way of doing green politics consists in the depoliticization of the problem (Swygendouw, 2007a) by the way of the demand for a consensus in order to implement policies to solve the issues we are facing, like climate change. The dramatic calls for fast action made by mainstream speakers fighting for the cause normally include two features. On the one side we find the enunciation of a supposed consensus among the political and scientific community regarding the policies needed to solve the problem, usually focusing on a technological fix (Carton, 2016). In addition to this a fixation with market-oriented policies that mark the limits of the political action within the strict boundaries of neoliberalism (Carton, 2016). Evidently, the existence of opposing hegemonical notions of how societies, economies and production can be organized is neglected. *The political* remains absent.

This problem is aggravated by the lack of a privileged subject of change (Kenis & Lievens, 2014, Swygendouw, 2007a). In other areas of political conflict we can easily point to the subject of

struggle, women in the case of feminism; ethnical minorities for racism, students for educational conflicts, etc. However, concerning environmental depletion, the subjects are as numerous as the multiple effects that nature has on our life. In addition to this, the object of focus for environmental change is also unclear (Kenis & Lievens, 2014) . Who does the environmentalist movement or citizen see as the adversary? The answers seem to be, once again, quite numerous. On the one side, it is possible to give that role to actors as the state, governments or companies. We can point also to actions, like consumption or intensive use of resources. Finally there is even a strong case for opposing against the system as a whole, a situation graphically illustrated by the chant “System change, not climate change”, famous amongst the climate justice activists.

With this framework in mind, we can situate the discussion about the Chilean political economy as an example of the ideological landscape that Mouffe described. Consequently, we witness the absence of a valid discussion about the possibilities of an overhaul of the food system in order to accomplish any goal defined as valid, e.g. the environmental depletion caused by the agri-food system. Using Mouffe’s work I will present a critical view of the analysis of modernization made by Beck and Giddens that paved the road for the “third way” doctrines. These authors predicted the shift of conflicts from the social structure sphere to a situation where they would be essentially focused on the individual sphere. Against this notion, I will suggest that the lack of alternative proposals to organize the Chilean Food system in a more sustainable way, are based on an exclusion of this oppositions, due to the hegemony of a neoliberal way to address the political. This situation is exacerbated by the aforementioned features of green politics, and the particular traits of food as a commodity and the recognition of this aspect in the Chilean institutions that regulate the food system.

#### **4.4 Summary- A framework for analyzing the politics of food**

Food systems have received increased attention by scholars and public opinion during the last years. This has been based on two main narratives. On the one side, there is a broad recognition of fact that we are experiencing the first signs of a global ecological crisis that can be summarized in the designation of our current geological era as the Anthropocene (Moore, 2016). This general situation would have demanded by itself a critical analysis of the situation regarding food systems and their role in the global environmental depletion. However, the food crisis of 2008, consisting on an unprecedented spike on global prices of fundamental staples

(Patel, 2012) gave an even bigger urgency to the need for a renewed analysis of the food economy. Following Marsden and Morley (2014) I will focus on the two main dimension that this new branch of agri-food studies has identified as the most relevant topics. One of them is overcoming of traditional categories of thought and action, like the binaries of nature-society. The second one is the recognition of the centrality of food issues in broader socially and economically sustainable development. This demands a scrutiny of the food question considering its wider political, social and economic conditions.

A Marxist analysis of commodification of nature, linked with the food regime theory will allow me to show the particular evolution and present state of the Chilean Food System. The establishment of food as a commodity and specifically, the priority given by the political institutions and policies to the export-oriented commodification of nature will be characterized as an expression of the apolitical condition that the neoliberal hegemony produces within Chilean politics. Particular decisions, policies and developments will be investigated as responsible for the present lack of a privileged subject of change regarding food systems as a whole, despite the abundance of discussion about food related problems. The answer to environmental depletion, health related issues like obesity and climate change will be described as narrowly focused and limited. By doing this, we will explore the (a)political condition of food in Chile in relation to the neoliberal political economy.

## **5. The food economy: the supply side**

Considering the length and orientation of the present research, I will focus my attention on two aspects of the food production sector that play a significant role in the export-oriented sector, that is the agriculture sector and salmon aquaculture. Through a historical account their present situation will be characterized. These illustrative examples will be used to provide a context to situate the political discussions and interventions regarding the food system in two of the sectors that are more significant to the area. The choice of these two examples is based on two motivations, firstly, their economic importance, and secondly, their symbolic relevance. Let us begin then the review of the agriculture sector.

## 5.1 The agrarian economy

Among the Neoliberal reforms implemented by the Chilean Dictatorship the devolution of the previously expropriated land during the process of Agrarian Reform was one of the most significant ones (Ffrench-Davis, 2003). Therefore, a critical analysis of the modern landscape of Chilean agriculture has to begin by focusing on this troubled period of the Chilean history. It has been recognized amongst scholars that the transformations experienced during the more than 10 years of sustained agrarian reform policies in the 60s and 70s set the trajectory for the development of the agrarian economy for the decades ahead (Valdés & Foster, 2014; Bengoa, 2013; Bellisario, 2007a). A massive process of political mobilization overlapping three governments with profound ideological differences shows the importance that the Agrarian Reform had in the political discussion in those days. Immersed in a continental debate about the roots of the structural dependency that affected the Latin American economies, the concentration of property was seen as one of the main reasons for the inability of the Chilean economy to grow as expected and provide quality and egalitarian nutrition for its inhabitants. The structuralist<sup>2</sup> strategy that was being promoted by the ECLAC (The UN Economic Commission for Latin American and the Caribbean) and executed in most Latin American countries consisted of an aggressive process of industrialization through the intervention of the State, while simultaneously using tariffs and barriers to promote domestic production and the development of local markets. The application of this recipe produced some positive effects in Chile, however the urbanization and modernization of the industries left the rural sector with a diminished role within the economy. This became more explicit as the costs in food imports rose substantially. This was caused by an archaic and inefficient production system in the countryside, with the best example being the massive and unproductive estate called “hacienda”. The urban centers experienced an accelerated modernization process that provided access to market-based relations and public services. This process of rural-urban transfers (Geisse, 1983) gave access to opportunities for political participation through leftwing parties and labor unions. In opposition to this, the situation in the countryside was described as “feudal” (Chonchol, 1974). In this context the process of Agrarian Reform came to overhaul the social and economic structure inherited from decades of slow growth. At the moment of the military coup, close to 10 million hectares had been expropriated, while giving

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<sup>2</sup> For a deeper analysis of this crucial Latin-American school of thought, Prebisch, 1981; Cardoso & Falleto, 1969 and Rodriguez, 2006)

birth to a mixed system of property and administration between the State and the farmers. (Bellisario, 2007a). The particular aspects of the process exceed the scope of this brief description, but the intensity of the confrontation that took place in the Chilean farms can be appreciated by the repression (Ibid.) and policies exercised by the Military Dictatorship.

## **5.2 The counter-reform. The rise of the export-oriented economy**

The achievements of the agrarian reform were completely erased through a massive process of privatization and redistribution of the expropriated land. This occurred between 1974 and 1980 (Valdés & Foster, 2009). The public goal of the policy was to give dynamism to the countryside. This objective consisted in the development of an export-oriented agrarian economy. The neoliberal theorists and policy makers working for the Military Dictatorship saw the redistribution of land as a tool to create this export-oriented agrarian economy. In addition to this, a less explicit aim was related to the political role that the peasant movement played in the Chilean society. The Dictatorship saw the political mobilization of peasants as something dangerous that had to be somehow stopped. (Velasco, 2007b)

The counter-reform was based on the familiar notion that an efficient market had to be created in the countryside. With this goal in mind, the Dictatorship started the devolution of numerous expropriated farms to their former owners. Another part of the previously expropriated land was sold and another group was assigned to peasants by a quite arbitrary application process. The ideological orientation of the latter policy becomes clear as we notice that “black lists” of politically active peasants were created in order to avoid the assignation of land to the more radical farmers (Ibid.2007b). A valid comparison can be made with the analysis that Swyngedouw develops for the construction of the modern Spanish hydroscape during Franco’s Regime (2007b). In both cases we can see the use of reforms tending to overhaul the landscape and bring modernization to the country. At the same time, the two policies had other more explicitly political goals. On the Chilean case, it was the destruction of the peasant movement. On Spanish territory, the objective was (among others) to eradicate the autonomist aspirations. The two processes had a fundamental role in the way that the domestic economies developed in the following decades.

On a different level, the Dictatorship eradicated the elements that distorted the markets. Therefore, they eliminated price controls, subsidies and aid policies orientated to the farmers.



The bureaucrats who worked for the regime were quite efficient in their purpose, and in a matter of a few years, the predictable scenario was a reality: a massive transformation had happened again in the Chilean countryside. Many of the landlords who received property back ended up selling their estates. At the same time, numerous peasants who became owners had to sell their recently acquired properties too, pushed by the new scenario of a market focused on exports rather than domestic consumption and the mentioned lack of support by the state. The policies had the desired impact and soon a new agrarian bourgeoisie took the leading position for years to come. The constitution of this group was fundamental to the development of the fruit export sector (Bengoa, 2013)

Profound changes in the structure of the global food economy were happening while these events took place in Chile. The slow but steady rise of the neoliberal wave across the world happened to be the best environment for the development of a successful export-oriented agrarian economy. The constant push for a liberalization of global trade provided a boost to the intentions of the Chilean technocrats and their views about the growth of a strong agrarian bourgeoisie with connections to the developed countries' markets. The comparative advantages of the Chilean geography, mainly the diversity of climates and soil were the perfect fit for both the local and global effort for inserting agrarian products in the global flow of goods. In that sense, the already mentioned effect of the counter-reform, concentration of land and the availability of a capitalist labor system in the countryside, in addition to the slow rise of what McMichael (2009) frames as the "third food regime" can be defined as the foundations of the current situation of the Chilean agrarian economy. The aspects of this framework that fit perfectly to the Chilean case are specifically the primary role assigned to the private initiative and the shift of the focus from staple grains and domestic markets to nontraditional products (primarily fresh fruits) and global markets. The pioneer-like role that Chile played in this new scenario with the neoliberal reforms already mentioned, was opposed to the late neoliberal turn that the rest of Latin American countries experienced (Chang, 2009). This situation provided the perfect environment for the fast growth of a new sector, the fruit export complex.

### **5.3 The fruit export complex**

In the two decades following the Military Coup, agriculture and forestry exports rose from about 2 to 28 per cent of the country's total exports (Kay, 2002). This number by itself shows

the explosion of the sector. While fruit production was already a sector in the agrarian economy, it was not until the decisive effort made by the Military Dictatorship that the conditions for the growth of this industry were set. It is essential to distinguish the particular characteristics that a product has to have in order to be successfully inserted in the global economy. The fruit coming from a peasant small farm and oriented to the domestic market and the one produced in industrial farms for exports share the property of being a case of “commodified nature” (Marx, [1867] 2010). However, the conditions required for the latter demand a much deeper commitment to the laws of market as a whole. A useful example which to compare to is the analysis of the privatization of water in England made by Karen Bakker (2007). In her research, she argues that as much as people were paying a price for water before the privatization processes conducted in the UK during the 90s, it is debatable if water could be considered a commodity in the traditional sense. Neither the quality, nor the supply was standardized, therefore it lacked an essential feature of a commodity (Bakker, 2007). In the same way, the fruit demanded by the international markets had to be produced specifically for that purpose, requiring a quality standard that exceeds the one prevailing in the traditional Chilean agrarian economy.

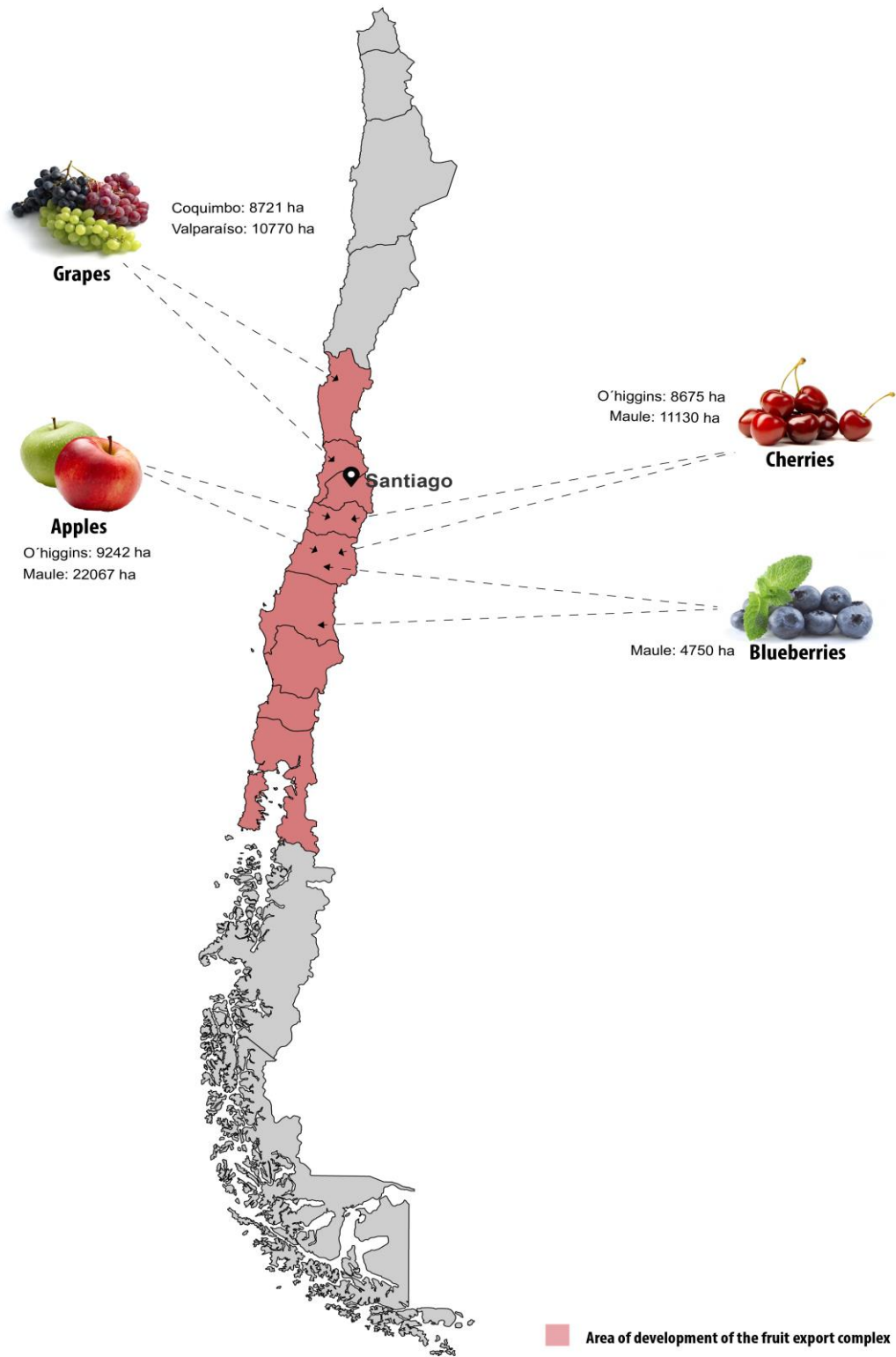
This shift in the conditions demanded by the product it is embedded in the transition to the third food regime mentioned before (McMichael, 2009). The increased wealth produced in the developed countries gave birth to larger middle classes that created the demand for food products all year round. This was one of the structural drivers leading to the rise of the Chilean fresh fruit complex (Murray, 1997). However, the internal conditions that Chile was experiencing were as important as the appetites (and dollars) of the first world. Due to the structuralist political economy dominant in Chile during the middle decades of the last century, the orientation of the food economy was pointed solely to the domestic market. Consequently, there was a lack of incentives for capital to be invested in the countryside. With the violent fall of the Chilean democracy in 1973, the Military Dictatorship initiated the process of neoliberalization. An active policy against the rural labor unions was initiated. The conditions were set to develop an export-oriented fruit complex.

### **5.3.1 A geographical characterization**

Chile has a very particular geography, and amongst its more than 4.000 km of length contains a diverse topography. The most populated area has historically been the region that surrounds

the capital city of Santiago, what has been called “the central valley”. It is on this same area where the agricultural tradition has been stronger both economically and culturally, being the dominant feature of the Economy during the Colonial period and the first century of independent history (Salazar, 2000). It was the region that witnessed the most intense political mobilization during the Agrarian Reform (Chonchol, 1976) and it is the area where the fresh fruit complex has mainly developed. The area encompasses the territory between the Coquimbo and Los Lagos Region, where the so called “Intermediate Depression”, a successive number of valleys dominate the landscape. The Mediterranean climate is optimal for the production of fresh fruit, especially between the Coquimbo and Maule region.

# Map 1



### 5.3.2 The rise of the fruits

The goal of establishing a modern fruit production sector was an old idea among the agrarian debate. During the 50s and 60s the first plans and policies were installed by the State through the Production Development Corporation (CORFO). This agency was the most important public organization that promoted economic growth in Chile that had a huge role during those years in the industrialization initiatives. However, the political and economic situation of the countryside, dominated by the agrarian reform process, proved to be an obstacle impossible to overcome for these plans (Gómez, 1994). The radical politicization of the countryside provoked numerous occupations conducted by the peasants. They were trying to put pressure on the government in order to accelerate the expropriations and assignments of property to the peasants. This had a negative effect on the production and made it difficult to guide the agrarian economy towards the diversification of the cultivars (Ibid.)

It was not until the aforementioned process of counter-reform conducted by the Military Dictatorship that the growth of the fruit sector became viable. The newly acquired dynamism of the market of agricultural land and the elimination of trade barriers were two powerful drivers for the rise of fruit production and export. Low wages and poor working conditions which include seasonal contract practices that have become part of the Chilean cultural landscape<sup>3</sup>, characterized these process. Technological support was provided by the international companies that entered the national Economy, as Dole and Chiquita and as well by the Fundación Chile, a public-private organization that has proved to be essential for the development of the modern export-oriented sector (Ibid.).

The “comparative advantages” included the low cost of the workforce and these made the success story of the exports of fruits like red apples and grapes a familiar story. Between the years 1974 and 1997 the nominal value of fruit exports rose from US\$ 30 to almost US\$ 1.400 million (Kay, 2002). Despite the end of the Dictatorship in 1990 and the arrival of a new center-left coalition, the “Concertación”, to power, the situation remained untouched in its dominant structures.

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<sup>3</sup> The word “temporera”, loosely translated to “temporary worker” refers specifically to the fresh fruit sector seasonal workers. All sorts of cultural products have been based on this figure, including a famous cumbia song and popular “telenovelas” that have shaped the image of the feminized labor in the Chilean countryside.

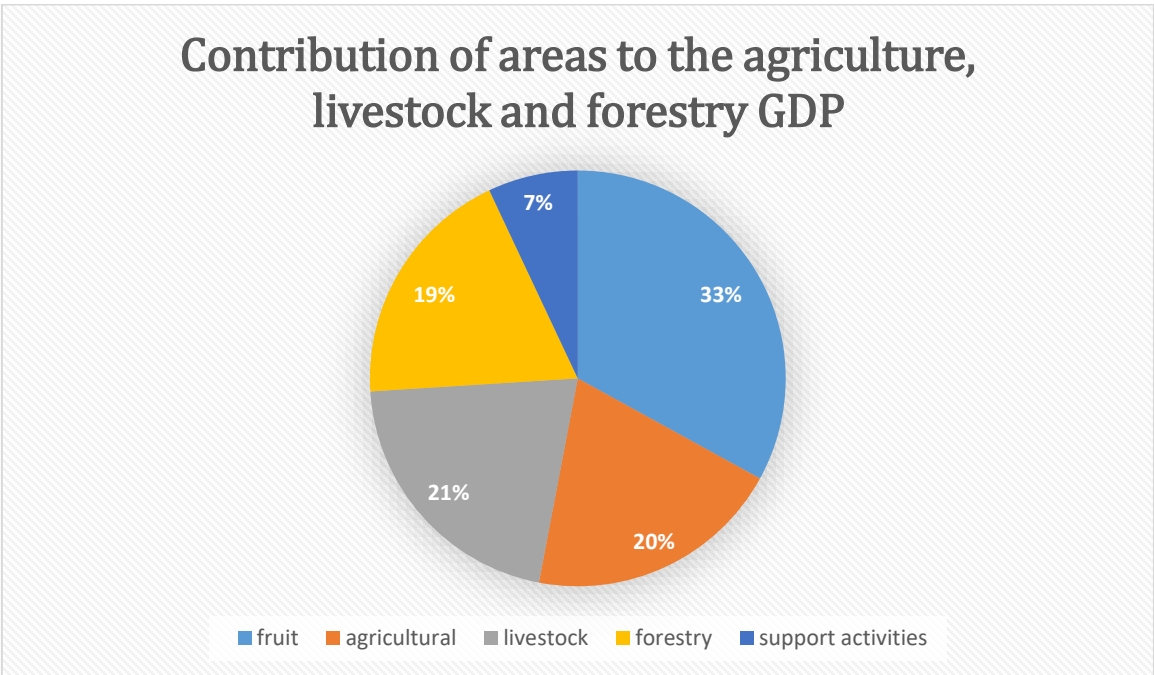
For a better understanding of this process it is useful to bring Chantal Mouffe's concepts back to the table. As it was mentioned, she describes the operation of modern political systems by the act of distinguishing between the political and politics. The apolitical conditions of debate in the Chilean transition to democracy consisted in the act of denying the possibilities of structural change of the neoliberal structures. This was expressed vividly in the discussion regarding the role of subsistence agriculture that happened shortly after the return to democratic governments. An interesting debate took place between the intellectuals and politicians that discussed the electoral program for the "Concertación" in the agrarian policy area. (Berdegué, & Rojas, 2014). The first tendency proposed to stick to the status quo, taking the traditional orthodox neoliberal position which dismisses the role of peasants in modern economies. Therefore policies should aid the transition of peasants to other occupations. In opposition to this idea, a minority opinion opposed this path that condemned peasants to poverty and to massively migrate to urban centers. They proposed to establish subsidies and regulate prices to help peasant agriculture to survive in the new environment of a globally connected food system. Unsurprisingly they were defeated, and a "compromise" solution was decided. The successful path of exports would remain, while policies to help the insertion of small and middle sized agriculture in the international market were installed. Despite the acknowledgement of the existing problem, namely the potential extinction of small scale peasantry as a valid lifestyle, the solution frames the desired outcome as one which excludes the possibility of peasants to remain existing on a permanent basis. Therefore, this operation constitutes a textbook case of exclusion as Mouffe (2005) understood it. Building on her work, we can propose that advocating for an economic system that values subsistence agriculture has become something invalid in the Chilean political landscape. The Concertación's technocrats chose to embrace the recipe of the Washington Consensus. By taking this decision, they showed that the path of the agrarian economy was going to be determined with a primary focus on the exports. The time for adventurous policies like the Agrarian Reform was decades behind and the decision proved to be just one step in the same path leaning to the construction of Chile as an agri-food superpower.

The ground was set for a steady growth of the sector that holds until present days. The current situation is vividly expressed with the following quote said by the President of the Federation of Fruit Exporters:

“The fruit export sector includes more almost 8.000 producers and 747 of which export more than 30 varieties of fruits that reach more than 1.700 million people across 100 countries across the world” (Cooperativa, 2015).

The exports have reached 2.312.546 tons which account for more than 4 billion US\$ and the size of the sector is a bigger part of the GDP than the also successful forestry sector, as well as livestock sector (ODEPA, 2015). This situation is represented in figure 1.

**Figure 1**



Source: prepared by ODEPA with information from the Central Bank of Chile. (ODEPA, 2015)

An extensive account of the products exceeds the scope of this thesis, however a closer look to 4 specific products can be especially revealing of the trends in the sector. The exports of grapes, apples, blueberries and cherries account for almost 3 billions US\$ of the exports. While grapes and apples have been part of the fruit export complex since the beginning of its development, cherries and blueberries have increased their production substantially during the last decade (Table 1)

**Table 1: Evolution of exports of selected fruits**

Products	Volume (tonnes)			Value (thousands of USD )	
	1984	2004	2014	2004	2014
Fresh Fruit Total	448.300	2.128.455	2.312.546	1.977.409	4.286.102
Grapes	178.400	693.053	731.827	865.284	1.492.651
Apples	208.400	739.049	819.951	399.265	754.743
Blueberries	0	10.105	83.855	82.029	518.687
Cherries	0	11.305	85.266	0	44.870

Source: ODEPA (2015) and Gómez & Echeñique (1994).

The reasons behind this change can be again pointed to the stage of development of the third food regime already mentioned, particularly for the case of blueberries. Blueberries have been labelled as a “superfood” (Fundación Chile,2012), the type of healthy product that has become trendy during the present food regime. In addition to this, the increase in the demand by the developed countries mixes perfectly with the counter stationary position of Chile and its privileged climate for the production of the desired fruit. It is relevant to point the dynamic nature of the fruit export complex. Even if the basic structure was set a couple of decades ago, its particular behavior remains sensible to the global demand and trends. The fluid estate market and the incentives for exports explain this dynamism.

The change of the production landscape has had some important effects in cultivations of other products, specifically annual crops like wheat or legumes. The total area dedicated to these crops has decreased steadily, reaching its lowest point of 700.000 hectares in 2014 (ODEPA, 2015). The case of legumes is the most astonishing case among this type of crops, for example beans, a traditionally “typical” Chilean product has decreased its production measured by both area and tons<sup>4</sup>. The same case applies for chickpeas and lentils (Table 2)

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<sup>4</sup> A popular saying to identify something as local states “is more Chilean than beans”.



**Table 2: Production of legumes**

Products	Volume (tonnes)			Area (ha)		
	2004-2005	2014-2015	Variation (%)	2004-2005	2014-2015	Variation
Beans	44.597	14.888	-67	23.540	13.685	-42
Peas	1.686	255	-85	1.414	564	-60
Chickpeas	2.919	137	-95	3.090	254	-92
Lentils	1.063	398	-63	1.160	942	-19

Source: ODEPA (2015)

This chapter will conclude with a brief characterization of the roles played by the specific actors in the countryside, and how this can be linked to the decrease of annual crops in comparison to the fruit produced for exports. Based on the work of Bellisario (2007b) it is possible to distinguish four main groups among the agrarian economy. The agrarian bourgeoisie, the rural middle class, family peasants and agrarian proletarians. The situation of the latter class has been briefly addressed in section 5.2, noticing its birth after the process of counter-reform performed by the Military Dictatorship. In addition to their role, it is the interaction between the three other groups that can shed some light to the changes in the orientation of the agrarian economy. As mentioned before, the privileged objective of the Chilean Food System is to produce for exports. The declared desire of inserting part of the small and middle scale agriculture into the global flows of exports has been somehow successful. The establishment of this rural middle class, which is part of the fruit export complex (Bengoa, 2013) is an expression of this. However, the effects of the obvious incentive of switching from the traditional annual crops like legumes to the more profitable fresh fruits has been felt in a much more intense manner in the peasant agriculture. Despite the difficulties that this concept can entail in modern Chile (Berdegué & Rojas, 2014) and the lack of up to date data regarding the number of agrarian exploitations<sup>5</sup>, it is possible to propose a preliminary conclusion from an interpretation of the available data. With the general trend of switching to more profitable fresh fruit cultivars, the peasant exploitations are the ones which keep producing legumes. They are less efficient and are unable to fulfill the demand for the domestic market. Therefore, the decrease in the

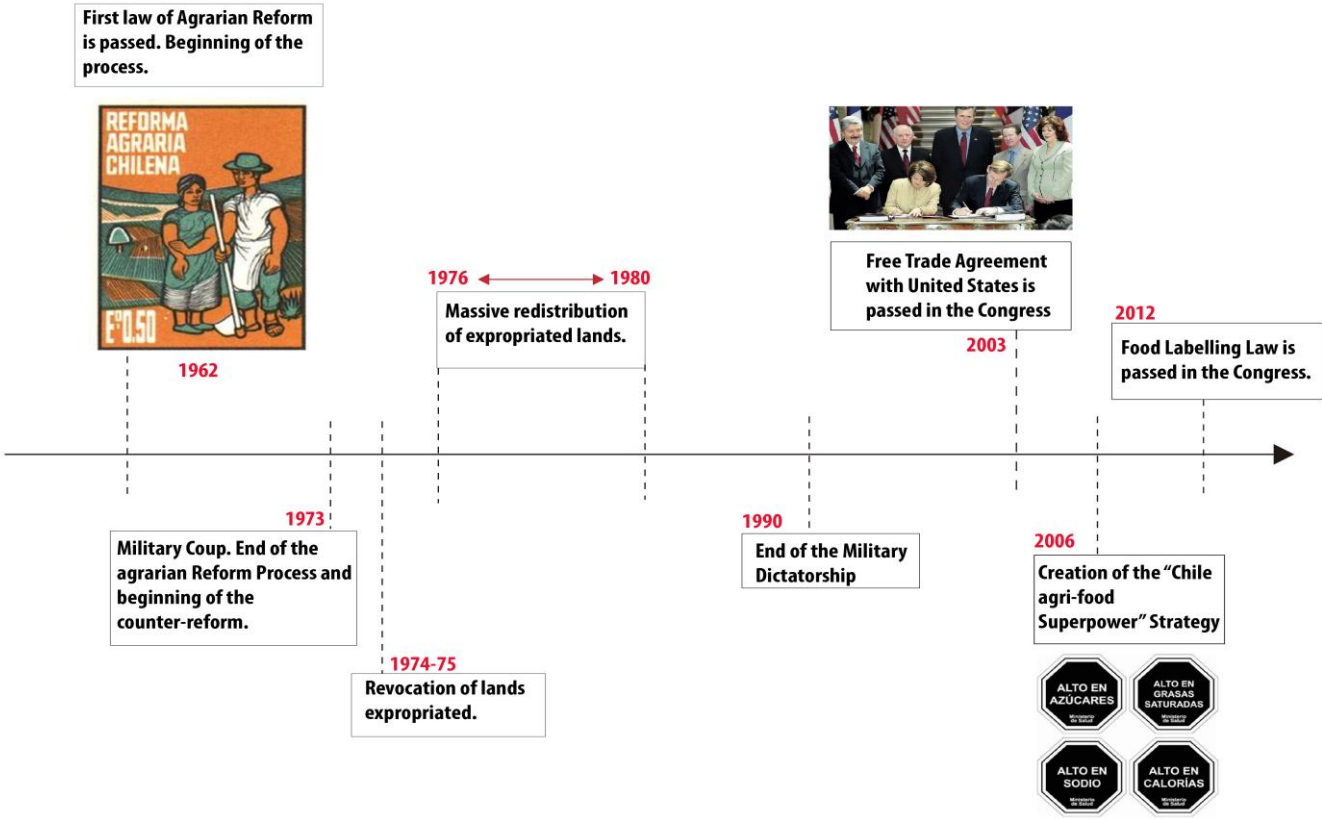
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<sup>5</sup> The National Agricultural Census which was supposed to be conducted this year by the INE was suspended due to budgetary reasons. The data of the number of exploitations measured by size is the most important number which that survey would have provided for this particular research.

production can be explained by this phenomenon, which has caused a situation unimaginable for most of the Chileans: the local production is not able to fulfill the consumption of beans or legumes. To summarize this section the timeline 1 provides a useful image of the evolution of the sector.

Timeline 1

### Development of the Fruit Export Complex



#### **5.4 The Salmon aquaculture Industry:**

Around the same time that the foundations of the fruit export complex were being put in place (end of the 1970s), another innovative sector of the future food economy was beginning its expansion in Chile. It was the fish aquaculture industry, specifically growing salmon. It is hard to envision a more explicit form of commodification of nature that inserting non-native species into a new environment and developing a huge industry around it. This case represents a textbook example of what Harvey designed as “accumulation by dispossession”, including the commodification and privatization of land and the conversion of various forms of property rights (Harvey, 2003). As he noticed, the process of capitalist accumulation does not limit itself to what Marx labelled as primitive accumulation, the crucial process where capitalist relations of production were introduced. On the contrary, in order to reproduce itself, global capitalism requires the establishment of a continuous relationship with non-capitalist areas (Ibid.). Through these links further processes of accumulation are initiated, normally by the act of dispossessing the former owners of the source of the capital, in this particular case, the resource managed as a commons, water, both as a physical place to put the cages and salmons as well as a sink for by products and waste. As it becomes evident, commodification of nature constitutes an essential part of accumulation by dispossession. Therefore, local fishermen became dispossessed of their exclusive right to exploit the local shores

The rise of the global aquaculture industry is astonishing. In a scenario of depleted fisheries (FAO, 2017; Edwards, 2015) the growth in production and consumption has rested on the fish harvest sector, which has experienced an unprecedented rise since the beginning of its wide spread growth at the beginning of the 1980s. Nowadays aquaculture accounts for 44% of the share of the global production (FAO, 2014). The dominant discourse regarding the growth in this sector has been mainly positive, based on two ideas. On the one side, the increase in the production of harvested fish is located mainly in developing countries. Hence, seafood has been pointed as a good option for countries with comparative advantages to insert themselves in the global economy. The increase in global fish trade supposedly demonstrates the success of this narrative. The second argument has gained more and more attention during the last years. As an important effect of the food prices crisis experienced during the end of the last decade (Patel, 2012) we are experiencing a special awareness over food security, particularly in the way that the global food industry is able to provide protein for the hungry consumers across the planet. In that sense, the international community through the FAO and other institutions has

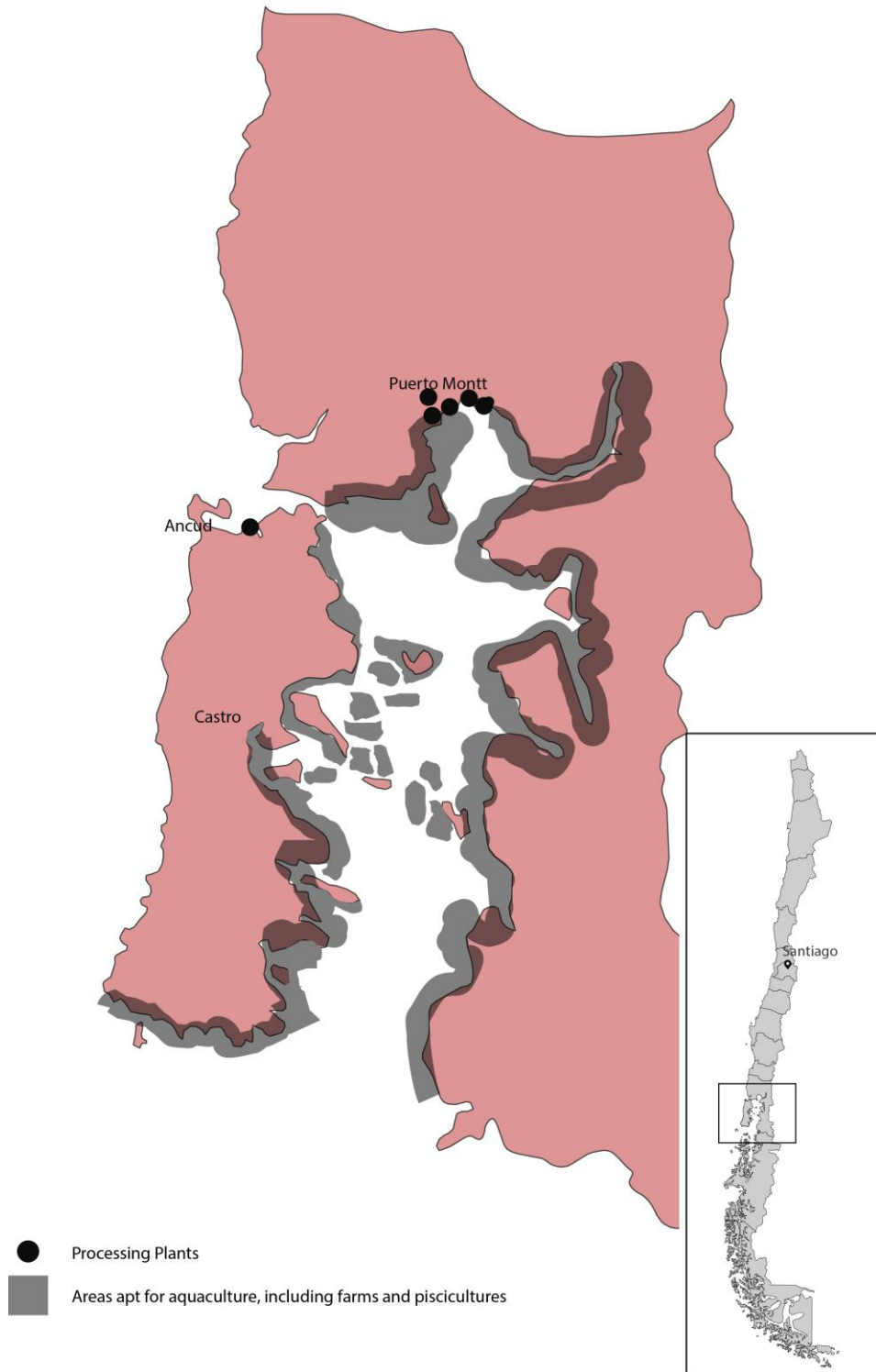
celebrated and fostered the creation of more aquaculture initiatives. The fish has been appointed as a cheaper source of animal protein for developing countries. This topic will be deeply analyzed in the section dealing with the consumption side of the Chilean Food system.

#### **5.4.1 A geographical characterization**

The aquaculture initiatives were originally based in the Los Lagos Region, in the south of Chile. The cages were specifically situated in an area that encompasses the Seno de Reloncaví and Chiloé Island (Map 2). This has been the space where the industry has acquired its fundamental role in the national and local economy. Before the arrival of the aquaculture entrepreneurs, the region was characterized by outward migration, high levels of unemployment and a general inability for the traditionally hegemonic agrarian sector to adapt to the new conditions of the general agricultural trends already described during the end of the 70s and beginning of 80s decades. (Barton & Floysand, 2010). After the success of the initiatives, the installations have outgrown the original area of influence moving deeper to the south to the Aysén Region as well.

# Map 2

Los Lagos Region and Salmon Aquaculture Industry



#### 5.4.2 Birth and growth of the salmon aquaculture

The Chilean salmon aquaculture industry shares some features with the fruit export complex. In addition to the similar process of commodification of nature that necessarily entails, its growth has been stimulated by similar aspects of the Third Food Regime as it was already described. In this sense, the counter-seasonal advantages provided by the Chilean harvesting times compared to the other producing countries like Norway, Scotland or the US, provides an important comparative advantage for the export-oriented commodity. Another shared aspect is the foreign origin of the product to the national landscape. As well as some of the most recognized export products from the fresh fruit sector, as blueberries and grapes; the salmon in its different varieties is an alien species, brought to the Chilean ecosystem specifically to be harvested and exported. However the salmon industry has its own characteristics that need to be mentioned. One of them is the novelty of the industry. Despite the new technologies, processes and social relations that the new fresh fruit complex environment has established as common, agriculture is an activity that has been a backbone of the Chilean economy since colonial times. On the contrary, the harvest of fish was a complete innovation, and required an active role of the State in its creation and development. Another aspect worthy of comparison is the situation regarding the workforce involved. Both industries share as part of their recent success, the favorable conditions of the Chilean labor market, in comparison to the situation amongst their potential competitors around the world. As it was already mentioned, the low wages and poor working conditions can be considered another comparative advantage that partially explains the competitive prices that the Chilean products have been able to reach in the international markets.

To give a critical interpretation of the process of creation and development of this sector it is useful to check on some recently published research, which have analyzed this phenomenon through the lenses of political ecology in the Chilean Academia. In this context, the first useful distinction is to mention the three phases of the industry as noticed by Tecklin (2014). In his work he distinguishes between the first period of formation of the sector, a second stage of huge growth (up to 20% annually) that lasted until the first big crisis hit in the year 2007 and the third phase of regulation and recovery of the industry. Let us see each phase with more attention.

The creation of the sector was the product of a number of public, private and mixed initiatives which included Japanese, American and local companies, international agreements of

technological cooperation with the Japanese Government and, once again the semi-governmental Fundación Chile (Hosono, 2012). However, this mix of research and investment projects required the decisive support of the Chilean State. Through the newly created Vice Ministry of Fisheries and Aquaculture (conveniently situated under the influence of the Ministry of Economy instead of the Ministry of Agriculture in a move that shows the orientation that the initiative had) a new legal infrastructure was rapidly created. Concession rights for developing aquaculture initiatives were granted by the State, assigning as private property rights large parts of the area of the Pacific Ocean previously considered as commons. Once again we see the similar pattern of an active governmental role, that in order to create markets, provides strength to property rights while benefitting from the global wave of neoliberalism can be observed in both the agrarian and the aquaculture sectors This was followed by credits and subsidies that allowed the establishment of this industry and its financial sustainability during the 1980s decade. From that point on, the boom began.

The praise towards the salmon industry and its role in the diversification of the Chilean Economy were numerous on the international arena, eager to express the success story of a “good pupil” of the policies dictated by the institutions that were enforcing the Washington Consensus. Successive reports were published by the World Bank, UNCTAD and FAO (World Bank, 2005; UNCTAD, 2006) with this narrative. The arrival of democratic governments brought us a familiar situation, the continuation of the main orientations of the sector. Despite the increase in environmental regulations, enforced with the Law of Environmental Bases in 1992 and reforms to the specific Aquaculture Law in the same year, the hegemonic vision of a neoliberal ecology (Cid & Latta, 2012) dominated the regulatory situation during the 90s. As in the analyzed case of the fresh fruit, the support of the ruling leftwing coalition would prove to be a constant during those years. In addition to a weak environmental regulation, they took a strong stand at the international level, when the Chilean salmon exporters were accused by their European and North American rivals of practices of environmental and labor “dumping” (Román & Barton, 2015). The complaints started to appear at the turn of the century, when the poor working conditions of the employees of the successful companies were exposed to the public opinion (Pinto & Kremerman, 2005), as more than three quarters of the companies have records of violating employment regulations (Cid & Latta, 2012). The accidents at the workplace were also almost 30% higher than the national average (Bustos, 2015). The answer to these requests came in the form of voluntary commitments, again facilitated by the governmental approval through the newly created Consejo de Producción Limpia (Clean

Production Council). This type of pledges consists of a typical element of the neoliberal frameworks of regulation (Cid & Latta, 2012) and would prove to be incapable of providing environmental and labor stability during the following crises that the sector experienced. However until the middle of the last decade the sector looked dominant and invincible, providing close to 45.000 job positions and accounting for US\$ 1.400 million on exports (Pinto & Kremerman, 2005). The Chilean Salmon Industry situated itself as the second biggest exporter in the world, and it looked just a matter of time when would we surpass Norway as the dominant actor in the sector.

### **5.4.3 Entering into a loop of crisis**

The success story of the Salmon Industry began to crack during the year 2007, when an outbreak of the salmon anemia virus (ISA) provoked a huge crisis that almost caused the end of the sector as a whole. This disease attacked the salmon during their growing time and caused the death of thousands of fish across the aquaculture cages as well as leaving the ones that did survive with wounds that made them non-tradable (Godoy et al. 2008). The effects were also felt among the labor force of the sector, where the most conservative estimations state that 15.000 jobs were lost due to the crisis (Bustos, 2016). Despite this shocking situation, the value of exports did not suffer a substantial decrease, due to the increase in global prices of salmons (SalmónChile, 2017). After a serious social crisis experienced by the region, the levels of production returned to its previous level already by the year 2012, and kept growing until the new environmental crisis came in the year 2016. In this case by the form of a bloom of a particular seaweed that caused massive deaths of salmon. The companies proceeded with the disposal of the decomposing corpses of 27 million dead salmon in the ocean (Cárdenas, 2017). The particularities of these subsequent crises as well as the governmental response to them will be thoroughly analyzed in section 7.2. In order to wrap up this section we will summarize the evolution of the sector with the table 3 and timeline of the aquaculture industry,

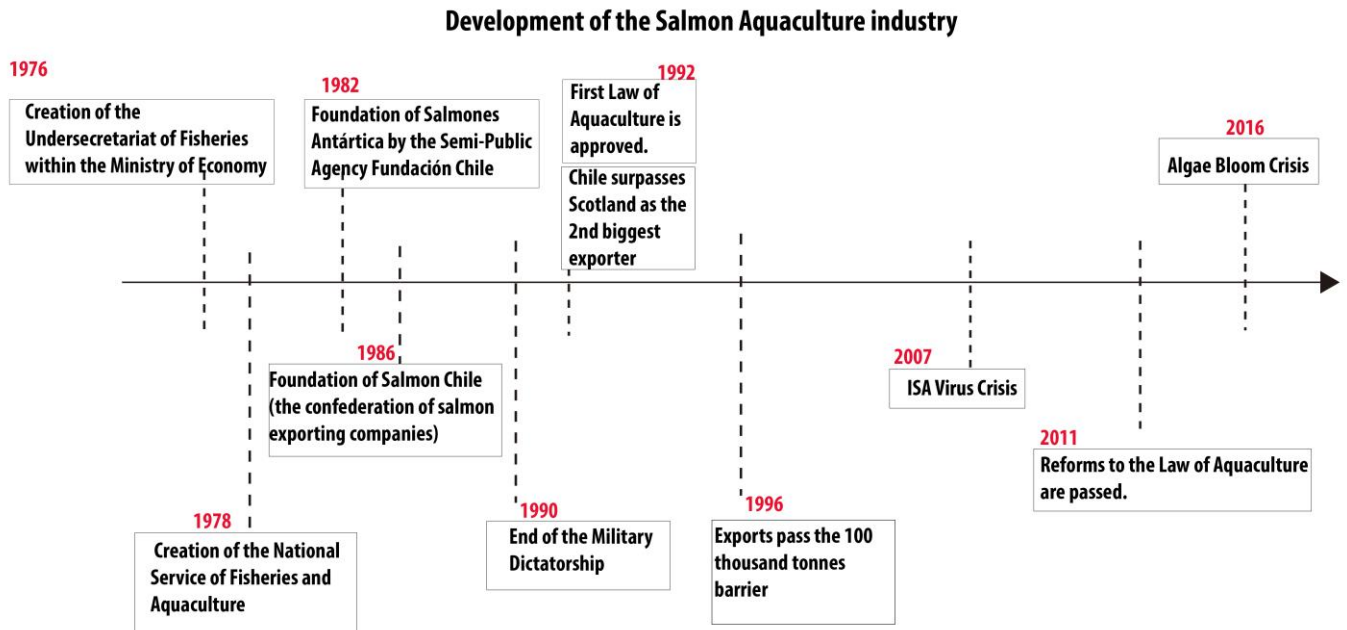


**Table 3: Exports of Salmon evolution**

Year	Volume of exports (tonnes)	Value of exports (thousands of USD)
1991	32.809	159.000
1996	135.821	538.000
2000	206.254	973.000
2005	383.704	1.721.000
2010	296.903	2.060.000
2015	590.101	3.526.000

Source: Salmón Chile, 2017; Amtmann & Blanco (2001)

**Timeline 2**



## **6. The food economy, the demand side**

### **6.1 The nutrition transition**

Switching the focus of the analysis of modern food systems towards consumption patterns, the overarching concept fit for the characterization of the phenomenon is the “nutrition transition”. This model of interpretation of the contemporary eating patterns was proposed originally by Barry Popkin (1993). The framework described a simultaneous change in the nutritional and epidemiological profiles of societies. The changes experienced by the former produced a major change in the latter, causing a modification in the health of the population. This alteration consists of the increase of noncommunicable diseases, like diabetes, cardiovascular diseases and obesity. But what does this process really consists of?

The first important feature to mention is the close connection that the nutrition transition has with the globalization of food systems. It has been a common conclusion to point to the increased flow of food across the globe as an essential driver of the changes in consumption (Hawkes & Murphy, 2010). Before the establishment of the second, and particularly the third food regime (around the 1980s), diets were necessarily more localized, dependent on the provision of the region surrounding the specific consumers. Clearly, the availability of different products through imports has affected the consumption patterns. However, the change of consumption patterns are not only driven by the increase in the global market of food. There are other trade-related drivers that can be even more influential in dietary matters. Among these we can mention the role of foreign investment or the growing sector of transnational companies, which includes both food production corporations and supermarkets (Reardon et al., 2010). There are elements not necessarily related to trade that also impact the nutrition patterns, namely urbanization processes and the individual and household income, among others. It is relevant to mention the fact that within the public health and development studies fields, the concept has been usually used referring to new affluent populations and their dietary changes (Dixon, 2009). Therefore, we will use it in the same way.

The nutrition transition is characterized by a series of changes in the consumption patterns of societies, than can be summarized in the movement from plant-based diets towards higher consumption of animal-based foods. Looking in more detail, we see that one of these aspects consists in the rise in consumption of animal protein, mostly through meat and dairy products.

This increase happens at the expense of high-protein vegetables, like legumes and grains (Garnett, 2014). Another aspect is the growth in oils, fats and processed foods consumption (Popkin, 2014). One of the main consequences that this process has caused is the rise of the global rates of obesity, especially across the low and middle income countries. Worldwide, approximately 1.9 billion people are overweight of which 600 million are obese. By contrasting this number with the roughly 800 million people undernourished, the scope of the global food crisis becomes clearer (FAO, 2017).

## **6.2 Features of Chilean Nutrition**

### **6.2.1 How to measure food consumption? A brief methodological explanation**

It is important to mention that the choice of statistical tool does matter when a characterization of food consumption is required. While the general averages of consumption can be revealing, it is necessary to clarify the complications that this process entails. The measurement of consumption in this thesis will be expressed through three types of instruments.

The first one is labelled apparent consumption (Universidad de Chile 2014), and it is a simple process expressed by the following equation:

$$(\text{National Production} + \text{imports}) - (\text{Exports} + \text{different uses}) = \text{apparent consumption}$$

The apparent consumption is a simple instrument that is not necessarily conducted by a particular institution or person, because its construction rests on the analysis of data of public access about production and exports.

The second tool used is the household analysis (Barr & Prillwitz, 2013), consisting in the realization of surveys that ask a representative sample to register their behavior related to a topic over a particular period of time. In the Chilean case, the National Institute for Statistics (INE), conducts a periodic survey called “Household Budget Survey”, which has been used to characterize changes in food consumption by the means of analyzing the amount of money spent in particular groups of food.

The third and last major instrument used in this section it is the “National Survey of food consumption”, conducted by the Ministry of Health. It is a representative survey of citizens across Chile focused on the consumption of food. The main goal is to describe the trends in food

procurement in order to provide information for policymakers focused in the improvement of the nutritional status of the general population.

**6.2.2 Changes in diets**

It is no risky sentence to say that Chile fits the model of the global nutrition transition, and it has experienced the process in a comparably fast way (Vio del Rio,2007) .

The first trace that it is easy to point is the connection between the GDP growth and the development of the changes in consumption patterns (Vio del Rio, 2007). While this aspect does not explain the phenomenon by itself, the correlation does exist. The already described economic growth that the Chilean Economy has experienced over the last decades did have an impact on the diet of Chilean citizens. The consumption of products of animal origin has increased substantially, including a steady growth in meat consumption. As the figure 4 shows, Chile states now as a really carnivorous country, when it is compared to the global averages, even surpassing the average consumption of the developed countries.

**Table 4: Meat consumption averages**

Country	Kgs. of meat consumed each year p/c
Chile	89,1
Developed Countries	42,9
Less Developed Countries	76,1
Global	33,7

Source: ODEPA (2013) and FAO (2017)

This behavior has been characterized as a novelty, as many studies show that the consumptions has increased, measured by different means. Using per capita averages, the consumption has moved from 70,8 kgs, to 89,1 in just 10 years (ODEPA,2013). If we compare this data based on apparent consumption stats with an analysis on household budgets, the situation remains. Meat

has been steadily increasing in the group of the items that represent a bigger part of household food expenses (Crovetto & Uauy, 2012). The opposite can be said about the role of legumes in diets, which have decreased from 4,2 to 3,5 kgs per capita when measured by apparent consumption and don't appear to even be considered as an individualized item in the last household budget survey.

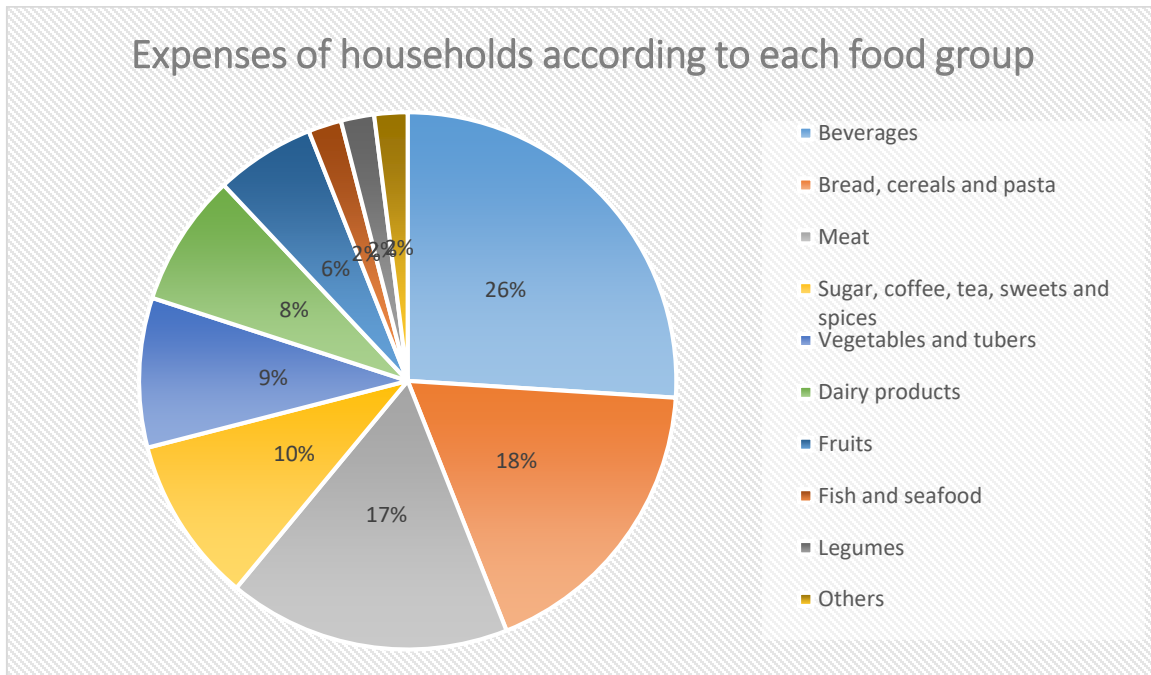
**Table 5: Meat and legumes consumption and expenses**

Products	Kgs consumed each year p/c		Percentage of household food expenses		
	2003	2013	1986-87	1996-97	2006-2007
Meat	70,8	89,1	20,4	18,2	16,7
Legumes	4,2	3,3	0,9	0,5	0,4

Source ODEPA (2013) and Crovetto & Uauy (2012)

If we switch our attention to the consumption of processed foods, the case becomes even stronger to put Chile as a paradigmatic case of a typical nutrition transition. A revealing study by Crovetto et al. (2014) came to the conclusion that 55,4% of the caloric contribution of the Chilean diet comes in the form of processed foods. Among processed foods a graphic example is sugar-sweetened beverages. Between 1987 and 2007, the daily consumption of this type of drinks rose from 117 cc to 289 cc (Ibid.). This accounts for the highest rate of daily income of calories across this type of food (Popkin & Hawkes, 2014). Finally it is revealing to go back to the household budget survey and mention that the item where Chilean families spend the most in food is precisely sugar-sweetened beverages, standing in an impressive 26% of the expenses. (Fundación Chile, 2012)

**Figure 2**



Source: Fundación Chile (2012)

As striking as these numbers can look, it is mandatory to add another layer of complexity to the analysis. It was already mentioned the specific situation existing in Chile in the area of income inequality. When food consumption is measured through that lens, the conclusion look in some way nuanced. Is it the Chilean Society as a whole the one that experiences this nutrition transition so strongly? Once again, there is strong data to support the statement that the low income sectors are the ones more affected with the unhealthy parts of the nutrition transition, while the high income households experience a less pronounced integration in the process. On the one hand, there is some data available to show that what has become a common-sense idea, the fact that healthy food it is more expensive that the unhealthy one, it is a reality in Chile (Verdugo et al., 2016). If we put the attention on the first aspect mentioned about the nutrition transition, the switch from vegetal-based to animal-based products, the data gives us another interesting nuance. When meat consumption is measured by income, the lower sectors consume considerably less (79,9 grs per day) than the high income population (118,8 grs per day) (ENCA, 2014). The opposite situation with legumes is less conclusive when measured by daily consumption, with a minor difference favorable to the low income population (20,6 grs per day) when compared to the high income (17,7).

These changes in diets have been pointed as one of the main drivers of the current “obesity pandemic” present in the Chilean society. 25% of the adult population is considered to be obese (Fundación Chile, 2012) accounting for more than 3,9 million people. 40% is considered to be overweight, leaving a small fraction of 35% within the category of “normal weight”. The projections estimate that this number will keep increasing, reaching close to 40% by 2025. (Ministerio de Salud,2016)

While these figures show a complex panorama it is revealing to go deeper into the connections existing within the food system. Therefore, we will put our attention now in the way that the two previously characterized “symbols” of the Chilean food system are consumed.

## **7. Bringing food to the table of politics (Findings and analysis)**

While the history of creation and development of both strategic sectors for the Chile agri-food power strategy shows by itself the neoliberal orientation of its inception and growth, a next step required to finish the analysis consists of two main topics. First, we will take a critical look of the national consumption of the fresh fruit and salmon. Secondly, we will give a brief look on three discussions that have occurred in the Chilean Congress during the last decade. While these topics share their relation with the food system, they portrait through different perspectives the way that food remains locked in a path of neoliberal orientation. This ruling principle sustains its two main characteristics, its apolitical condition and its dependence on a continuous and unsustainable process of commodification of nature aimed at supporting the process of capital accumulation.

### **7.1 The perils of being an agri-food superpower**

One of the reasons of the success of the strategy summarized by the slogan Chile an agrifood superpower has been the search for a more diverse and healthy diet in the developed countries. Within this trend, the two sectors chosen in this research are food groups usually pointed as essential pillars of sustainable diets (Garnett, 2014; FAO, 2017). Therefore, the situation of

having a successful production sector in these fields could be considered an asset to provide healthy nutrition to the local population. The reality is far away from this pretention.

The case of fresh fruit is the first example of these circumstances. When measured by the Public Nutritional Guide defined by the Ministry of Health, the average consumption of fruits and vegetables is approximately half of the established requirement (Universidad de Chile, 2014). By looking at the average consumption of fresh fruit, the average Chilean consumes 168 grs per day, while the average citizen of Western Europe eats close to 450 grs per day (Fundación Chile, 2012). In addition to this, another revealing number is the amount of the production that is oriented to the domestic market. The available data for the 4 analyzed products in the two regions most representative of the fresh fruit complex is expressed in tables 6 and 7

**Table 6: Selected fruits production and destined for domestic market in Maule Region**

Products	Production (tonnes)	Domestic market (percentage )
	2016	2016
Grapes	2.120	9,7
Apples	659.446	14,6
Blueberries	29.726	4,6
Cherries	52.182	13,7

Source CIREN-ODEPA (2016)

**Table 7: Selected fruits production and destined for domestic market in O'Higgins Region**

Products	Production (tonnes)	Domestic market (percentage )
	2015	2015
Grapes	251.240	9,7
Apples	238.715	17,8
Blueberries	5.224	4,8
Cherries	39.352	12,1

Source CIREN-ODEPA (2015)



In the case of the salmon, the most recent studies show that the consumption rates of fish in Chile are quite low, and salmon is by no means an exception to this. The annual consumption of fish is approx. 7 kgs per year, while in countries like Japan, one of the biggest importers of Chilean salmon, the average is close to 50 kgs per year (Chile Vive Sano, 2014). An interesting fact about this situation is the origin of the salmon that it is effectively consumed by Chileans. As said by the same industry, up to 80% of the salmon that is consumed nationally comes from stolen fishes (Bustos, 2015), which are afterwards sold in local markets by fishermen. Therefore, we witness an interesting case of commodification of nature in order to export, and a national consumption of this commodity that somehow leaves the normal functioning of markets.

While the reasons of this low consumption of these fruits and salmons are complex, the available data shows us a strong correlation between income and their consumption. They are a luxury and as product oriented to the developed countries it is no secret that their price has become prohibitive for most of the Chilean population. Despite this distance between the majority of Chileans and these products, the definition of the country as an agri-food superpower has had strong effects on the way that the State has dealt with a series of conflicts involving the food system. The next section will address some of these cases.

## **7.2 Building a sustainable agrarian economy, the one sided climate change debate**

There has been a rise in awareness of the environmental impacts of agriculture worldwide (FAO, 2016, Esnouf et al., 2013). As Marsden & Morley point (2014) the food commodity price spike that followed the economic crisis had the effect of a major reflection about the sustainability of the food system. Within this tendency, an important part of the attention has been given to the debate around climate change and agriculture. It is relevant to state that the contribution of agriculture to the total greenhouse gas emissions currently stands at more than one fifth of the global total (FAO, 2016). In addition to this, the ongoing population growth of developing countries, the still pending issue of global hunger and the already discussed global transition impose sensitive questions to the global food system. Will the food systems be able to adapt to the double challenge of feeding the world and decrease its output of GHG?

This discussion finds Chile as one of the most intensive societies in term of greenhouse gas emissions, and the agrifood system accounts for the second biggest source of emissions

(Ministerio del Medio Ambiente, 2016). The GHG emissions per capita are also among the highest on the continent, currently situated at 6,2 t CO<sub>2</sub> eq. Despite this situation and the predictions of intensification of the emissions, the way that the problem is addressed in the framework of the Paris Agreement shows the commitment with a path of further carbonization. The recently published Third National Communication about Climate Change (2016) includes two structural parts which show the embedded neoliberal dominated discourse and route ahead. The first one is the way that the Intended Nationally Determined Contribution (INDC) is framed. This mechanism establishes the voluntary national climate targets, including mitigation and adaptation. In the case of Chile, the decision was made of establishing the measures regarding mitigation with the indicator “intensity of emissions”. This indicator states for the CO<sub>2</sub>eq tons by unit of GDP, establishing as a bar of comparison the intensity existing on the year 2007 (Ministerio del Medio Ambiente, 2016). While this is a debatable decision, the way that the analysis of the agriculture sector is made adds another argument to the business as usual approach that seems to inspire the climate mitigation policies. On this regard, the account of emissions is done by taking into consideration the emissions made by both the agriculture and livestock sector, as well as the huge forestry industry. Because of the property of trees of acting as carbon sink, the National Communication concludes that the agriculture, livestock and forestry sector<sup>6</sup> is carbon neutral. While this definition is not necessarily false, it does illustrate the path taken by the Chilean State, fixed in a development strategy intensive in carbon. This is confirmed by a recent study that researched the attitudes of social elites towards climate change (Parker et al., 2013). The study concludes that Chilean elites, including politicians and businessman, do not feel fully responsible for the emissions of greenhouse gas emissions.

### **7.2.1 The Paris Agreement discussion**

During the discussion of the Paris Agreement in the National Congress a revealing trend was manifested. Going back to Mouffe (2005) and her concept of apolitical, there seems to be a complete absence of opposing hegemonic interpretations of the phenomenon of climate change. This is manifested on the lack of debate about the Agreement, which was unanimously approved in Congress. In addition to the aforementioned hegemonic consensus regarding the

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<sup>6</sup> Encompassed by the Spanish term “agropecuario”

need of a technological fix (Swyngendouw, 2007a) the Chilean debate adds a different layer that can be referred as the climate debt. This idea states that the developed countries owe to the global South a debt, due to its major proportion in the use of the atmosphere as a carbon sink. (Ciplet et al. 2014). Whether right or wrong, represents a displacement of responsibility to act to reduce emissions. A conservative Senator expressed this clearly during the discussion of the Paris Agreement, declaring:

*“Chile makes an almost marginal contribution to the phenomenon, while it is beyond question that climate change constitutes a global problem that had affected us”* (BCN, 2016).

Several interventions of this nature were said during the discussion, including both Congressmen and the Ministers that were in charge of presenting the Agreement to a vote (Foreign Affairs and Environment Ministries respectively). But much more revealing to the aim of this research is the following statement, made by another Senator:

*“I celebrate that the Agreement establishes obligations for conservation of carbon sinks, especially trees. However, that requires resources and specific public policies, and maybe our country is not in conditions today of accomplishing them. The regions where this conservation should take place the agrarian activity is strong and the majority of the products are exported”.*

The fixation on the commodification of nature specifically aimed at the global markets reveals itself in a brutal way by this quote, and the consequent approval of the Paris Agreement with a business as usual approach regarding the agrarian economy. While some policies have been framed to act in the context of climate change, the focus remains steady on adaptation, area where the country already counts with a national plan since 2013, with phrases a revealing as these:

*“It is highly likely that the new climatic conditions improve the quality of the fruits”*

This brief analysis of the discourse regarding climate change and its relation with the export-oriented agriculture shows clearly the dominant view regarding the issue. As we will see the action of the State aiming to provide for the conditions of commodification of nature in the form of food products with the objective of being sold abroad becomes visible.

### **7.3 The cycle of salmon crisis**

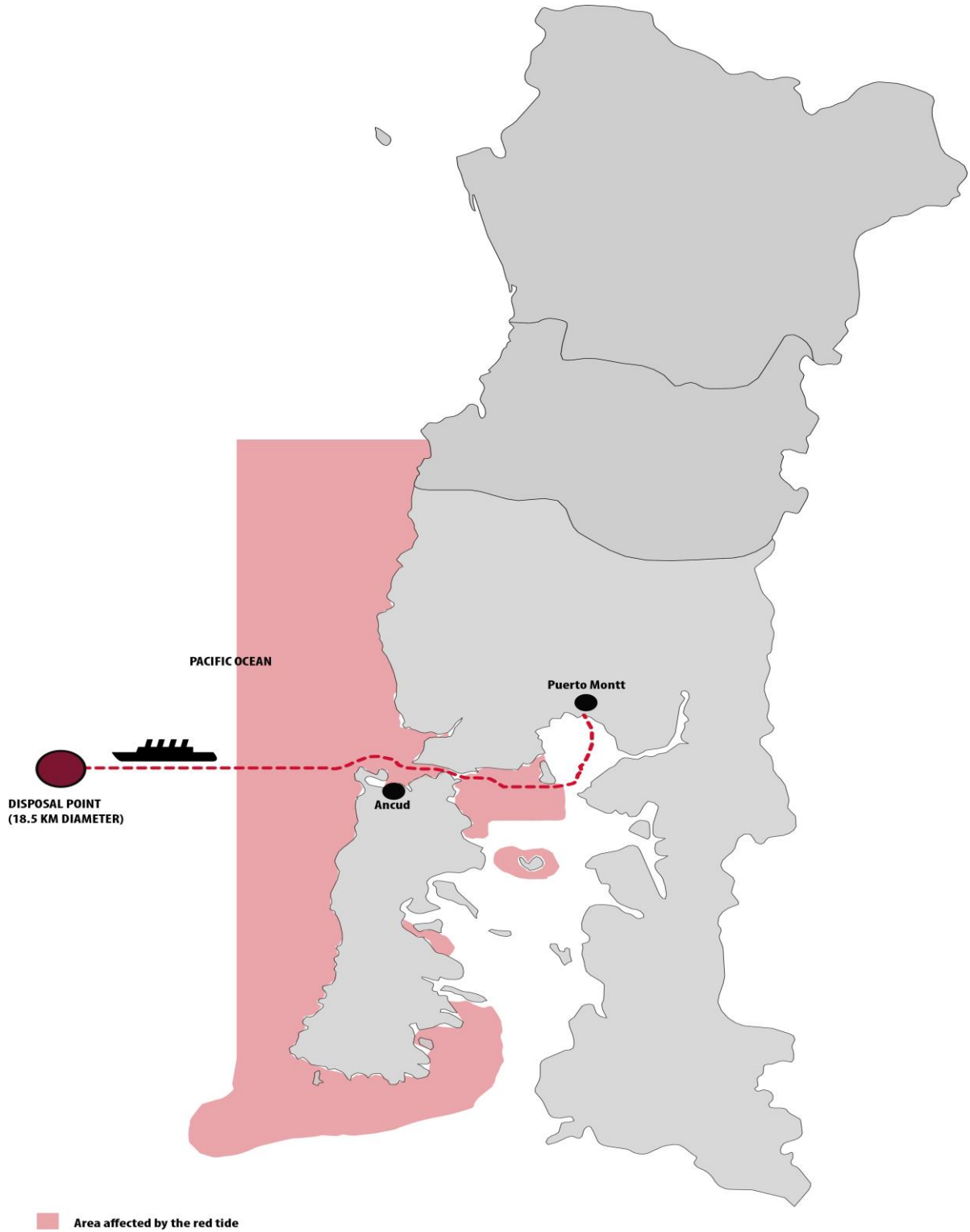
The present cycle of crisis of sustainability that the salmon aquaculture sector is experiencing was already mentioned. However a deeper analysis is required to explore the way that the State policies have interacted with the unsustainable practices and consequences that the fish harvesting industry has produced in the southern regions of Chile.

While the critique towards the environmental consequences had been growing as the industry rose during the 90s and beginning of 2000s (Pinto & Kremmerman, 2005), the political system did not take strong measures until the outcome of the ISA virus in 2007. The vulnerabilities of a weak regulation were exposed when the ISA virus attacked the fish farms provoking the loss of weight and death between the salmons. Hence, the exports decreased and a terrible economic crisis stroke the region causing losses up to 64 million US\$ and the loss of thousands of jobs (Bustos, 2015). Due to the social and economic havoc, the Government did take a strong position this time. The context of the global economic crisis that unleashed at the same period gave a bigger incentive to the State to aid the aching salmon industry, with the objective of preserving the sector from a potential terminal crisis. As Bustos (2016) proposes, the answer to the crisis was not one that questioned the productive model of the region. On the contrary, what came out as a product was measures that looked to assure the future survival of it. The diagnosis of the sector agreed upon one interpretation of the crisis. There was a lack of up to date regulation, which gave incentives to the companies to harvest the salmons in an unsustainable matter (Revista Kawesqar, 2016). The infection of the disease was rapidly transmitted because of the overpopulation of the cages and how close they were from each other (Katz & Iizuka, 2011). However, they forgot to remember that their badly decided position was primarily a choice made by the companies by themselves, when they were granted property on concession rights by the State. Instead of redefining the map of concessions, the State decided to let the companies to establish neighborhoods of harvests by themselves. These groups were appointed as the units of coordination of production and eventual response to new sanitary crisis (Bustos, 2016). A moratorium on new concessions on the Los Lagos Region was

approved indefinitely, but the hunger for aquaculture concessions moved deeper to the south, to the Aysén Region. In addition to this, financial aid was generously provided by the Government to the salmon companies, which were on high debt by that time. At this point the action of the State starts to become similar to the bailout of banks during the subprime crisis that was occurring at the same time on the Global North. Instead of redesigning the rules that proved to be unsustainable and prone to crisis, the salmon industry was considered too big to crash.

The measures prove to be successful and the production and exports rose to even higher levels than before the ISA virus crisis. However, during the first months of the year 2016 a new environmental crisis came and the questions about the sustainability of the sector rose one more time. This time it took the form of a bloom of a particular seaweed that caused massive deaths of salmon in the Los Lagos Region. The disposal of the corpses at the same site of harvesting would have caused further sustainability problems and threatened the production. Therefore a massive dumping of the decomposing rests of 5.000 tons of death salmon in the ocean took place in east coast of Chiloé Island (Map 3).

# Map 3



The situation would have stayed as a small accident within the salmon industry, but during the following month of May a new algae bloom attacked the region. This time it was the red tide, which, instead of focusing on the harvested salmon, provokes a toxic infestation among the shellfish, essential to the local fishermen. An immediate prescription prohibiting the capture and selling of the produce of the sea instigated a social havoc which had not been seen even in the worse days of the ISA Virus Crisis, particularly in the Chiloé Island. Being a territory completely transformed by the industry over the last decades, a second social crisis in less than 10 years was enough to instigate the fishermen and fellow inhabitants of the island to demonstrate. The demand of economic aid was a pivotal part, however there was also a major claim for justice and a proper explanation of the crisis. Despite the economic growth brought by the salmon industry, the perception of a sector with a purely extractivist intention grew as the social movement targeted the salmon industry and the disposal of the dead fish as the main reason that explained the unusual intensity of the red tide. While the crisis lasted for almost three weeks before the Government came to an agreement with the fishermen organizations, the debate about the origin of the crisis stayed as a hot topic in the public discussion. That debate is noteworthy in relation with the food system analysis. On the one side, the official version said by the industry and other voices pointed to climate change and the strength of El Niño (Velásquez, 2016). This was followed by a State designated commission that published a report discarding a cause-effect relation between the salmon disposal and the red tide bloom (Informe Comisión Marea Roja, 2016). In opposition to this, Greenpeace published a report which declared that it was impossible to determine that the crisis and the intensity of the red tide was merely produced by El Niño and the phenomenon of Climate Change (Greenpeace, 2016). The debate lost its force with months, but one interesting consequence that it had was the increase in the awareness of the environmental effects of the salmon industry in the southern regions of Chile. Therefore, we are now witnessing the first public opinions aiming to avoid the intensification of the industry, with both Green NGOs such as Greenpeace and Ecoceanos (El Desconcierto, 2016) and Congressmen calling for a perpetual stop of concessions in further regions beyond Los Lagos.

#### 7.4 The case of the food labelling law

The last case to analyze consist in the recently approved food labelling law. Due to the increasing rates of obesity already mentioned the Congress recently passed a bill unique in its form in Latin America. The regulation main articles demand the labelling of food products with warnings regarding its high contents of sodium, sugar, fat and calories. The proposal was introduced in 2007 and the legislative process took 5 long years, where an intense debate took place. During the discussion process many aspects of the way that the Chilean State deals with the health of its citizens as well as with its national food system came to the surface. As an introductory statement, we will propose that the law it is indeed severe when compared to the neighboring standards, and it has been praised by doing so (FAO, 2017). However as it will be exposed, the approach to the nutrition crisis when taken as a whole, lacks a holistic view that includes the complexities of the Chilean food system. The debate which took place in the National Congress can serve as a basis for this argument.

<sup>7</sup>The first conclusion that comes from a detailed scrutiny of the minutes of the sessions shows a small number of mentions to the agrarian economy or the agri-food system. This reflects that the Chilean political system seems to be unable to situate discussions about food consumption within the national context of being a self-proclaimed agri-food superpower. Paradoxically the first mention to the concept comes from the representative of Chilealimentos, the association of food production companies. While exposing the wonders of Chilean climate and the global interconnection of the economy, he mentions the accomplishment reached by the sector: Chile is the country where the exports of food grew the most.

A second interesting point to highlight is the few unanswered questions made regarding the benefit of a good nutrition, instead of the main focus of the discussion that points to the harm caused by heavily processed foods. As it was previously described on detail the problems of the nutrition habits of Chileans are a two sided issue. While establishing a punishing bill that sets up warnings against some products considered to be “bad”, there is a total lack of acknowledgement of the obstacles making people really hard to eat “good” food. This becomes even clearer when the variable of inequality is considered. We already showed how connected to income are both processes. Despite the existence of some policies aiming for “good” nutrition, they are heavily focused on education and diffusion as the aforementioned Dietary Guidelines. These policies are missing potentially interesting options as it might be directly subsidizing

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<sup>7</sup> The following paragraphs are based on interventions made during the discussion of the Law N° 20.606.



prices of healthy food or developing a more multifaceted strategy against malnutrition. Once again, a narrow view of food is present.

## **8. Discussion**

### **8.1 An apolitical way of addressing food**

The denial of conflictive representations of the world is, according to Mouffe (2005), one of the most powerful features of our current political environment. A critical view of the development of the Chilean Food System is required. It is possible to characterize it as one aspect of the national political economy that has been almost universally acclaimed and not successfully challenged so far. There have been voices and actors demanding particular arrangements during most of the periods of development, as the small peasants and their articulation towards the State to maintain the scarce public support. Environmental groups have phrased demands for stricter regulations for several problems, as the pesticide use effects on the “temporeras” (Mendoza & Donoso, 2011) or demanding higher standards for the waste generated by salmon aquaculture (Pinto & Kremerman, 2005). However, these have been isolated attempts, which have lacked an encompassing narrative that could problematize food in a properly political way, namely, propose an alternative framework to the dominant export-oriented model. The commodification of nature in neoliberal terms, dominated by high-input industrial agriculture, aquaculture and agro-industry, has been uncontested so far. But, how come that such a politicized field during the 60s and 70s (by the terms of the time, primarily through the agrarian reform process) has become an area of consensus towards the organization and orientation of the system? And finally, whose interests are served by an apolitical approach?

### **8.2 Contestation requires actors**

The analysis of environmental activism described by Kenis and Lievens (2014) provides the best framework to engage with the creation and development of the food system. As it was mentioned, her attention to the actor of change remains crucial for the observation of the phenomenon. Therefore, it is impossible to underestimate how crucial it was for the future evolution of the food system the way it was firstly installed during the decade of the 1970s. By the dual process of agrarian counter reform and the award of perpetual concession rights to install the aquaculture, the Military Dictatorship established a system favorable to the

concentration of power in the form of landowners and entrepreneurs of aquaculture. The eventual benefits of a commons based strategy of management for natural resources was neglected and the neoliberal faith in the private property (Harvey,2005) became the norm. In the context of Military Dictatorship, an active resistance seemed impossible, considering that political parties were suspended, elections abolished and an active campaign of persecution on the countryside (Bellisario, 2007a) was being executed. In the case of the fishermen that experienced the competition for the use of the sea, two remarks should be made. The first is that, it was indeed a much smaller sector of the population and the politicization experienced on the countryside was mostly absent. The second argument is that at the beginning of the process of commodification of the “Estrecho de Reloncavi” sea in order to produce the salmon, there was not rival use of the common resource, simply because there was too much of it out there.

This general orientation has been maintained by the following democratic governments and is one of the basis for the export-oriented food system in place. One of the results of this decision was to diminish the contestation power of the groups that were directly affected by the new system that was being designed. As much as it the political landscape of Chile has changed during the last decades, the options for political mobilization on the urban space remain. A very different situation occurs on the countryside, where the old form of political participation through peasant unions and cooperatives of productions is currently at very low levels (Berdegué & Rojas, 2014). This can be seen as an explanation for the lack of a strong food sovereignty movement in Chile (Cid & Latta, 2014), in opposition to other Latin-American countries which count with peasants as one of their most important social movements (Mann, 2015). The creation of a modern labor market with temporary contracts during collection season is the model universally approved, the possibility of framing an alternative to this success story rests in the small scale agriculture described on the previous sections. This group was supposed to adapt to the path decided by the hegemonic doctrine, inserting on the export-oriented system. In addition to the struggles that they have experienced in doing this, the numbers show that their organization and coordination levels are extremely low (Berdegué & Rojas, 2014). In the case of the salmon sector, the situation is more complicated, because the “subject of change” includes both the labor force actually working within the industry, as well as the fishermen that experience the competition for the use of the common resource. They have been part of the processes of contestation against the industry over the last 10 years, but the development of an agenda of transformation of the sector has not appeared. Even less a

common discourse between the agricultural and aquaculture in order to criticize the food system as a whole. The abovementioned institutional separation of Aquaculture under the Ministry of Economy and Agriculture having its own Ministry provides a useful tool to artificially divide a sector that could be managed together, minimizing the coordination between the two critical areas for the export-oriented food system. We tend to think that this decision had profound effects and added complexity to the construction of a broad demand for a more sustainable food system.

The absence of a social actor contesting the food system does show in the legal discussions about the food labelling law, where the production side is basically unmentioned. At the same time, the lack of policies aiming to a profound transformation of the energy intensive agriculture sector it is clear when we analyze the mitigation plans regarding climate change. But, is this lack of alternative necessarily a bad thing? In order to provide an answer, we need to go back to food regimes.

### **8.3 The third food regime lock-in**

The success story of the Chilean Food System, and its present representation as an “agri-food Superpower” it has been an important part of the sustained growth that the economy has experienced. However, what it proved to be a successful strategy of capital accumulation so far, does not necessarily will last forever. The analysis provided by this research shows a few of the most aching problems that the Food System is currently experiencing and gives us hints about the inability of the neoliberal perspective to tackle them in an efficient and sustainable way. The first point that has to be addressed is the role that an upper middle-income country (and with projections of economic growth for the following years) will eventually have within the current food regime. The part assigned to economies as the Chileans is to produce an export luxurious goods to the developing countries. This proposition has been shown to be real during this research, through the quantitative analysis of the amount of products being exported, as well as the socially concentrated national consumption of them. However this model of economic growth rests on a few assumptions that are starting to be contested by “nature” itself.

On a local basis, the impacts of climate change will jeopardize the existence of both the fruit-export complex and the salmon aquaculture. They are both currently experiencing successive

climate change related events like historical wildfires (The Guardian, 2017b) and the analyzed red tide crisis. Some strategies of further commodification of nature are being planned. We can mention the analyzed movement of the aquaculture concessions to the southern regions of the Chilean Patagonia or the new improvements in the quality of food that climate change will provide. However, the threat remains and other constraints as water provision, peak phosphorus or the high amount of antibiotics for salmons that the new conditions will demand are one of the few problems that the sector is either facing or will confront in the next years.

Still, it is the global scope the one where the limits of the export-oriented strategy should be challenged the most. During the last decade, the concept of food miles (Avetisyan et al., 2014) became popular among the proponents of alternative food networks. The demand for relocation and concentration of food systems motivated by the target of diminishing the carbon footprint of food products sounded reasonable. However, the concept has lost some of its impact on the last years, with research showing that its predicted impacts do not necessarily match the reality, when the carbon footprint of local alternatives are really measured (Verma,2014). These have been based on the major efficiency of massive chains of production and international transport networks when they are compared to the local food systems framed as alternatives. (Avetisyan et al., 2014). However, when aiming for carbon neutral societies in a near future, the limits that systems that promote massive transport of carbon intensive food across are real. Even if producing some products in Chile and transporting them through maritime transport to the developed countries can be seen as presently more carbon efficient, there is an already acknowledged limit of what international transport can provide when the projections are done. As Larkin (2016:2) states

*“Decarbonisation on the scale and timeframe implied by the Paris Agreement will necessitate going well beyond incremental efficiency gains, and even beyond what technology may have to offer”.*

The question about how sustainable is to produce food and transport it across the globe compared to produce it locally is a false question, because rests on a lack of acknowledgement of the limits of that efficiency. Therefore, the question in global terms has to be, how do we reframe the food systems in order to fix the problems that we are currently facing?

#### **8.4 In the search for healthy sustainable diets**

When we look closer to the policies implemented by the Chilean State in order to tackle the rising obesity rates, the nature-society dualism becomes evident. Just as Marsden & Morley (2014) proposed, the overcoming of these type of narrow approaches to food system is one of the main reasons of our inability to fix the issues among the way we relate the food. After analyzing pages and pages of congressional discussion concerning the most important legal effort to reduce obesity, it becomes clear that diets are seen as something completely separated from the conditions of production of the food itself. The absence of the voice of the producers is puzzling and so is the limited notion of public health that inspires the regulation. In opposition to the most advanced dietary guidelines in countries like Sweden or Brazil, where the public recommendations have included in recent years ecological concerns (Gonzalez Fischer & Garnett, 2016), the subject remains absent from Chilean regulation. However, this should not surprise us. While the debate about healthy sustainable diets has started to become more abundant (Garnett, 2014; Esnouf et al., 2013), the conclusions that those research projects have come up to, show the difficult decisions that the political systems should embrace in order to reach the desired goal of providing healthy nutrition and diminishing the environmental load of ecosystems. Recognizing the achievement of regulating processed foods in the Chilean Food System, a much more aggressive policy is required, based on the limited success than policies based on individual behavior have shown in the comparative experiences worldwide (Garnett et al., 2015).

The physical and social structure of society does have an important effect on the consumption decisions, and the “evidence based” criteria to determine policies ends up limiting the scope of measures considered by the political system. In comparison to other experiences, Chile has not addressed food through alternative mechanisms. The experience of policies like urban food councils or public procurement with local criteria (Moragues-Faus & Morgan, 2015) should be considered.

#### **8.5 The Inability of the political system to address food politically?**

*“the political in its antagonistic dimension has not disappeared, but in this case it manifests itself under a different guise, as a mechanism of exclusion justified on pseudo-scientific grounds.”*

(Mouffe, 2005:59)

The decision of keeping in place a food production scheme that enhances exclusively the exports of goods aimed to the developed countries is a political decision heavily influenced by the neoliberal political economy hegemonic in Chile since the Military Dictatorship. Despite 27 years of democratic governments, this tendency has not been reverted or contested properly. A massive transformation happened on the countryside and the shores of the Chilean territory, diets have modified and the shadow of climate change and its impact on the productive sector seems closer every day. The transformations of the practices and structures of the agrarian economy have been staggering, encompassing a steady decrease in traditional annual crops as legumes in favor of fresh fruit with big carbon footprints and not massively consumed by the Chilean population. By picking the example of the blueberry, the newest symbol of development of the sector, the conclusion is evident: the disconnection between what we produce and what we eat does not need to be highlighted. Less than 3% of the total production of the last poster child of the fresh fruit complex is eaten in Chile.

In opposition to requests of addressing the topic situated in a wider concept and recognizing its increasing complexity and interconnection with numerous areas, policies tend to address one issue. In the form of considering the sector as carbon neutral or tackling the obesity rates by labelling processed foods and recommending people to eat more fruit, these approaches lack a holistic view, which is required to politicize properly food systems.

A recent study about the ISA virus crisis on the salmon industry (Bustos, 2016) proposes that despite the massive situation of crisis experienced, this did not produce a deep questioning of the neoliberal system. It is possible to frame the catastrophe as a crisis of reproduction of capitalism (Harvey, 2014), meaning the recognition that the means of production (the maritime ecosystem in this case) is incapable of sustaining the size of the accumulation process unleashed. However, the answer has not been a demand for the change of the model. Scaling up this interpretation, it can be compared to the food system as a whole, which remains heavily orientated by neoliberalism. The commodification of nature is unquestioned. This happens in a context of wide recognition of the inability of sustaining the growth of the system as how it is currently framed (FAO, 2016).

## 9. Conclusions:

The aim of this thesis was to analyze the creation and development of the modern Chilean Food System. This was done through a characterization of the process of neoliberalization that has been developed in Chile since the Military Dictatorship started in 1973. The commodification of nature was identified as one of the most recognizable aspects of this wave of neoliberalization. As two illustrative examples of this trend the fresh fruit export complex and the salmon aquaculture industry were highlighted. They were characterized as part of the symbolic goal of converting Chile into an agri-food superpower.

The agrarian economy was founded over the ashes of one of the most profound processes of political mobilization that Chile has experienced in its history, the agrarian reform. Therefore the active role of the State by reframing the sector with neoliberal principles was needed. The real estate market was boosted and the market oriented policies withdrew the existing subsidies. The orientation changed from a system pointing to feed the domestic population towards an export oriented agriculture. Peasant agriculture became an excluded social sector and a new successful class of landlords emerged. In the case of the salmon, the market was created artificially, by assigning property rights to the nature (the sea in this case) and dispossessing the local fishermen. Both processes seem to be prosperous on the surface, providing with economic growth fueled by the successful insertion in the global markets. However, a few issues have started to appear.

The environmental consequences of the food system started to emerge in recent years. For the agrarian economy, the threat of climate change looms, while no significant mitigation policies have been implemented so far. In the case of the salmon industry, two successive environmental crises over the last 10 years have created an aura of suspicion about the sustainability of the industry. In the consumption side of the food system, the changes in consumption patterns have been radical and obesity rates are rising. The disconnection between the healthy goods produced in Chile and the unhealthy diets eaten by the majority of the population becomes evident. The political system has implemented some interesting policies, but the framework of action remains stable. The neoliberal inspiration for policies is still hegemonic.

In this context, the demand for a politicization of food becomes urgent. This process requires to have an agenda of approaching food systems in a more complex way and understand its

insertion in the global economy as more than an opportunity for exports. We need instead a recognition of the environmental limits that we start to grasp and the construction of a social movement aiming for transformations of food. A detailed analysis of the strategies that the new food movement should use is the perfect follow up for this thesis. Finally, we must state that the current apolitical condition of food it is, as Mouffe stated, an act of exclusion. This exclusion is necessarily exercised by some actors. In this case, the companies that dominate the Food System Economy. A strategy for the transformation of the food system has to start by identifying them. This thesis provided two examples, namely the fruit export complex and the salmon aquaculture. A deeper analysis of the food system needs to show the actors which participate in the other sectors not analyzed in this thesis, like the transportation, retail and food waste actors.

## 10. Bibliography :

Agencia Chilena para la Inocuidad Alimentaria-ACHIPIA (2016) “ *Tras doce años, la Idea País se hace realidad: Chile Potencia Alimentaria.*” Published December 16, 2016.

Albala, C., Sanchez, H., Lera, L., Angel, B. and Cea, X. (2011) “Socioeconomic inequalities in active life expectancy and disability related to obesity among older people”. *Revista Médica de Chile*, 139(10):1276-85

Amtmann, C. and Blanco, G. (2001) Efectos de la Salmonicultura en las Economías Campesinas de la Región de los Lagos, Chile. *Revista Austral de Ciencias Sociales*, 5: 93-106.

Atria, F. (2013) *Neoliberalismo con rostro humano (Veinte años después)*. Santiago: Catalonia.

Avetisyan, M., Hertel, T. and Sampson, G. (2014) “Is Local Food More Environmentally Friendly? The GHG Emissions Impacts of Consuming Imported versus Domestically Produced Food”. *Environmental and Resource Economics*, 58(3): 415-462.

Azar, A., Franetovic, G., Martínez, M and Santos, H. (2015) “Determinantes individuales, sociales y ambientales del sobrepeso y la obesidad adolescente en Chile”. *Revista Médica de Chile*, 143: 598-605

Bakker, K. (2007) “Neoliberalizing nature? Market environmentalism in water supply in England and Wales”. In Heynen, N. McCarthy, J., Prudham, S. and Robbins, P. (eds.) *Neoliberal Environments. False promises and unnatural consequences*. New York: Routledge, 101-113.

Barr, S. and Prillwitz, J. (2013) “Household Analysis: Researching “green” lifestyles, a survey approach.” In Fahy, F. and Rau, H. (eds.) *Methods of Sustainability Research in the Social Sciences*. London: SAGE, 28-52



Barton, J. & Floysand, A. (2010) "The political ecology of Chilean salmon aquaculture, 1982–2010: A trajectory from economic development to global sustainability". *Global Environmental Change*, 20: 739-752.

Bellisario, A. (2007a) "The Chilean Agrarian Transformation: Agrarian Reform and Capitalist 'Partial' Counter-Agrarian Reform, 1964–1980. Part 1: Reformism, Socialism and Free-Market Neoliberalism". In *Journal of Agrarian Change*, 7 (1): 1–34.

Bellisario, A. (2007b) "The Chilean Agrarian Transformation: Agrarian Reform and Capitalist 'Partial' Counter-Agrarian Reform, 1964–1980. Part 2: CORA, Post-1980 Outcomes and the Emerging Agrarian Class Structure". *Journal of Agrarian Change*, 7 (1): 1–34.

Bengoa, J. (2013) "Rural Chile Transformed: Lights and Shadows". *Journal of Agrarian Change*, 13 (4): 466–487.

Berdegú, J. & Rojas, F., (2014) "*La Agricultura Familiar en Chile*", Serie Documento de Trabajo N° 152, Grupo de Trabajo Desarrollo con Cohesión Territorial, programa Cohesión Territorial para el Desarrollo. Rimisp Santiago Chile.

Bustos, B. (2015) "Producción de conocimiento en Chile y el caso de la crisis salmonera". In Bustos, B, Prieto, M. and Barton, J. (eds.) *Ecología política en Chile. Naturaleza, propiedad, conocimiento y poder*. Santiago: Editorial Universitaria, 193-209.

Bustos, B. (2016) "¿Síndrome de Estocolmo? Comunidad, industria y desarrollo tras la crisis del virus ISA en Chiloé". In Román, A., Barton, J., Bustos, B. and Salazar, A. (eds) *Revolución Salmonera. Paradojas y transformaciones territoriales en Chiloé*. Santiago: Ril Editores, 235-257.

Biblioteca del Congreso Nacional-BCN (2016) *Discusión Sobre el Proyecto de Acuerdo que aprueba el Acuerdo de París*.

Cárdenas, J. (2017) "*A un año de "La Comuna de Chiloé."*" Published online in El Desconcierto, May 8, 2017.

Carton, W. (2016) "Dancing to the Rhythms of the Fossil Fuel Landscape: Landscape Inertia and the Temporal Limits to Market-Based Climate Policy". *Antipode*, 49 (1): 43-61

Castree, N. (2008) "Neoliberalising nature: the logics of deregulation and reregulation". In *Environment and Planning*, 40: 131-152

Clapp, J. (2014) "Financialization, distance and global food politics". In *The Journal of Peasant Studies*, 41 (5): 797-814

Chang, H. (2009) "Rethinking public policy in agriculture: lessons from history, distant and recent". *The Journal of Peasant Studies*, 36 (3): 477-515.

Chile Vive Sano (2014) "*Chile y el bajo consumo de productos del mar: ¡Exportamos pescados, pero no los comemos!*" Published online May 27, 2014.

- Chile Vive Sano (2017) “*El verdadero pe\$o de la obesidad*”. Published online April 28, 2017.
- Chonchol, J. (1976) “La Reforma Agraria en Chile (1964-1973)”. *El Trimestre Económico* 43 (171): 599-623.
- Cid, B. and Latta, A. (2012) “Testing the Limits Neoliberal Ecologies from Pinochet to Bachelet”. *Latin American Perspectives*, 185 (39, 4): 163-180.
- Ciplet, D., Timmons Roberts, J. & Khan, M. (2015) *Power in a Warming World: The New Global Politics of Climate Change and the Remaking of Environmental Inequality*. Cambridge, MA: MIT Press.
- CIREN-ODEPA (2015) *Catastro Frutícola. Región del Libertador General Bernardo O'Higgins. Principales Resultados*. Santiago: Gobierno de Chile.
- CIREN-ODEPA (2016) *Catastro Frutícola. Región del Maule. Principales Resultados*. Santiago: Gobierno de Chile.
- Cooperativa (2015) “*Chile se mantiene como líder en la exportación de frutas del hemisferio sur.*” Published online February 5, 2015.
- Crovetto, M., Uauy, R., Martins, A., Moubarac, J. and Monteiro, C. (2014) “Disponibilidad de productos alimentarios listos para el consumo en los hogares de Chile y su impacto sobre la calidad de la dieta (2006-2007).” *Revista Médica de Chile*, 142: 850-858.
- Crovetto M, Uauy R. (2012) “Evolución del gasto en alimentos procesados en la población del Gran Santiago en los últimos 20 años”. *Revista Médica de Chile*, 140: 305-312.
- Delano, M. and Traslaviña, H. (1989). *La Herencia de los Chicago Boys*. Santiago: Ediciones del Ornitorrinco.
- Dixon, J. (2009) “From the imperial to the empty calorie: how nutrition relations underpin food regime transitions”. *Agricultural Human Values*, 26:321–333.
- Donoso, S. (2011) “When Social Movements Become a Democratizing Force: The Political Impact of the Student Movement in Chile”. In *Protest, Social Movements and Global Democracy Since 2011: New Perspectives*. New Perspectives: Published online June 9, 2016: 167-196.
- Eden, S. (2001) “The Politics of Certification: Consumer Knowledge, Power and Global Governance in Ecolabelling”. In Peet, R., Robbins, P. and Watts, M. (eds.) *Global Political Ecology*. New York: Routledge.
- Edwards, P. (2015) Aquaculture environment interactions: Past, present and likely future trends. *Aquaculture*, 447: 2–14.
- El Mostrador (2016) “*Consumidores coludidos: la gente se organiza contra el poder económico*”. Published online January 21, 2016.
- El País (1998) “*La otra cara del “jaguar” de América Latina*”. Published March 23, 1998.

Esnouf, C., Russel, M. and Bricas, Nicolas (2013) *Food System Sustainability. Insights from DuALLine*. New York: Cambridge University Press.

FAO (2014) *The State of World Fisheries and Aquaculture 2014*. Rome: FAO.

FAO (2016) *The State of Food and Agriculture 2016*. Rome: FAO.

FAO (2017) *The Future of Food and Agriculture. Trends and Challenges*. Rome: FAO.

Fundación Chile (2012) *Chile Saludable. Oportunidades y Desafíos de innovación. Vol. I*. Santiago: Fundación Chile.

Fleet, N. and Guzmán-Concha, C. (2016) "Mass Higher Education and the 2011 Student Movement in Chile: Material and Ideological Implications". *Bulletin of Latin American Research*, 36(1): 160–176

Friedmann, H., and McMichael, P. (1989). Agriculture and The State System. *Sociologia Ruralis*, 29(2): 93-117.

Ffrench-Davis, R. (2003). *Entre el Neoliberalismo y el Crecimiento con equidad. Tres décadas de política económica en Chile*. Santiago: LOM.

Garnett, T. (2014) *What is a sustainable healthy diet?* Food Climate Research Network Discussion Paper.

Garnett, T., Mathewson, S., Angelides, P. and Borthwick, P. (2015) *Policies and actions to shift eating patterns: What works? A review of the evidence of the effectiveness of interventions aimed at shifting diets in more sustainable and healthy directions*. Oxford: Food Climate Research Network & Chatham House.

Garretón, M. (2012) *Neoliberalismo corregido y progresismo limitado. Los gobiernos de la Concertación en Chile, 1990-2010*. Santiago: Editorial Arcis-CLACSO.

Geisse, G. (1983) *Economía y política de la concentración urbana en Chile*. México: El Colegio de México-PISPAL.

Godoy, M., Aedo, A., Kibenge, M., Groman, D., Yason, C., Grothusen, H., Lisperguer, A. et al. (2008) "First Detection, Isolation and Molecular Characterization of Infectious Salmon Anaemia Virus Associated with Clinical Disease in Farmed Atlantic Salmon (*Salmo salar*) in Chile." *Bmc Veterinary Research* 4: 1–28.

Gómez, S. (1994) *Algunas características del modelo de exportación de fruta en Chile. Orígenes y situación actual*. Serie Estudios Sociales N° 59, FLACSO.

González Fischer, C. and Garnett, T. (2016) *Plates, pyramids and planets. Developments in national healthy and sustainable dietary guidelines: a state of play assessment*. Oxford: FAO & The Food Climate Research Network.

Greenpeace (2016) *Reporte Crisis Social Ambiental en Chiloé*. Santiago: Greenpeace.

Harvey, D. (2005) *A brief history of neoliberalism*. Oxford: Oxford University Press.

- Harvey, D. (2003) *The New Imperialism*. New York: Oxford University Press.
- Hawkes, C. and Murhpy, S. (2010) An Overview of Global Food Trade. In Hawkes, C. et al. (2010) *Trade, Food, Diet and Health Perspectives and Policy Options*. Oxford: Wiley.
- Hobsbawm, E. (1995) *The age of extremes. The Short Twentieth Century: 1914-1991*. London: Abacus.
- Hosono, A. (2012) The Chilean Salmon Industry Takes Off: From the Commercialization to the Early Development Phase. In Hosono, A., Iizuka, M. and Katz, J. (eds.) *Chile's Salmon Industry. Policy Challenges in Managing Public Goods*. New York: Springer, 45-73.
- Huneus, C. (2014) *La Democracia Semisoberana: Chile después de Pinochet*. Santiago: Taurus.
- Informe Comisión Marea Roja (2016). Published online by Ministerio de Economía de Chile, November, 2016.
- Kay, C. (2002) Chile's Neoliberal Agrarian Transformation and the Peasantry. *Journal of Agrarian Change*, 2 (4): 464-501.
- Katz, J. and Iizuka, M. (2011) "Natural resource industries, tragedy of the commons and the case of Chilean salmon farming". *Institutions and Economies*, 3 (2): 259-286.
- Kenis, A., Lievens, M. (2014) "Searching for 'the political' in environmental politics". *Environmental Politics*, 23 (4): 531-548.
- Larkin, A. et al. (2016) Shipping in changing climates. *Marine Policy*
- Laclau, E., and Mouffe, C. (2001) *Hegemony and socialist strategy: towards a radical democratic politics*. London: Verso.
- La Segunda (2014) "Productos orgánicos expanden su oferta y seducen a más consumidores." Published online July 31, 2014.
- Longo, B., Clausen, R. and Clark, B. (2015) *The Tragedy of Commodity. Oceans, Fisheries and Aquaculture*. New Jersey: Rutgers University Press.
- Mann, A. (2014) *Global Activism in Food Politics Power Shift*. London: Palgrave Macmillan.
- Marsden, T. and Morley, A. (2014) Current food questions and their scholarly challenges: creating and framing a sustainable food paradigm. In Marsden, T. and Morley, A. (eds.) *Sustainable Food Systems. Building a New Paradigm*. London: Routledge, 1-29.
- Marx, K. (2010) *Capital: A Critique of Political Economy Volume 1*. Moscow: Progress Publishers.
- McMichael, P. (2009) A food regime genealogy. *Journal Of Peasant Studies*, 36(1): 139-169
- Mendoza, A. and Donoso, A. (2011) Trabajo agrícola de Temporada y su impacto en la Salud. *Revista Sociedad & Equidad*, 1: 1-8.
- Ministerio de Salud (2016) *Sobrepeso y Obesidad. Un creciente reto a la salud pública en Chile*. Santiago: Gobierno de Chile.
- Ministerio del Medio Ambiente (2016) *Tercera Comunicación Nacional de Chile ante la Convención Marco de las Naciones Unidas sobre Cambio Climático*. Gobierno de Chile

- Moore, J. (2016) *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. Oakland: Kairos
- Moragues-Faus, A. and Morgan, K. (2015) Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning*, 47: 1558-1573
- Moulián, T. (1997) *Chile actual: anatomía de un mito*. Santiago: LOM.
- Mouffe, C. (2005) *On the Political*. London: Routledge.
- Murray, W. (1997) "La globalización de la fruta, los cambios locales y el desigual desarrollo rural en América Latina: Un análisis crítico del complejo de exportación de fruta chilena." *Revista Eure*, 25 (75) 77-102.
- ODEPA-Oficina de Estudios y Políticas Agrarias (2013) *Evolución del Consumo Aparente de los principales Alimentos en Chile: 2003-2013*. Santiago: Gobierno de Chile.
- ODEPA-Oficina de Estudios y Políticas Agrarias (2015) *Panorama de la Agricultura Chilena*. Santiago: Gobierno de Chile.
- OECD Country Profile (2017) Selected Indicators for Chile. Accessed online May 5, 2017.
- Parker, C., Letelier, M. and Muñoz, J. (2013) Elites, climate change and agency in a developing society: the Chilean case. *Environment, Development and Sustainability*, 15: 1337-1363.
- Patel, R. (2012) *Stuffed and Starved: The Hidden Battle for the World Food System - Revised and Updated*. New York: Melville House.
- Pinto, F. and Kremerman, M. (2005) *Cultivando Pobreza: Condiciones Laborales en la Salmonicultura*. Santiago: Terram Publicaciones.
- Popkin, B. (1993) "Nutritional Patterns and Transitions". *Population and Development Review* 19 (1):138-157.
- Popkin, B. (2014) Nutrition, agriculture and the global food system in low and middle income countries. *Food Policy* 47, 91-96.
- Reardon, T., Henson, S. and Gulati, A. (2010) Links Between Supermarkets and Food Prices, Diet Diversity and Food Safety in Developing Countries. In Hawkes, C. et al. (eds.), *Trade, Food, Diet and Health Perspectives and Policy Options*. Oxford: Wiley, 111-130.
- Revista Kawesqar (2016) "ISA: El Virus que marcó la historia del Salmón en Chile". Published online September 20, 2016.
- Román, A. and Barton, J. (2015) Una ecología política de las transformaciones territoriales en Chile: poder y gobernanza en los sectores forestal y salmoneo. In Bustos, B, Prieto, M. and Barton, J. (eds.) *Ecología política en Chile. Naturaleza, propiedad, conocimiento y poder*. Santiago: Editorial Universitaria, 193-209.
- Romero, H. (2014) Ecología política y represas: elementos para el análisis del Proyecto HidroAysén en la Patagonia chilena. *Revista de Geografía Norte Grande*, 57, 161-175.
- Salazar, G. (2000) *Labradores, peones y proletarios*. Santiago: LOM.
- SalmonChile (2017) Online Stats Batadase. Accessed May 18, 2017.

Swyngedouw, E., (2007a) "Impossible "Sustainability" and the postpolitical condition". In Krueger, R. and Gibbs D., (eds.) *The sustainable development paradox*. London: The Guilford Press, 13-40.

Swyngedouw E., (2007b) Technonatural revolutions: the scalar politics of Franco's hydro-social dream for Spain, 1939-1975. *Transactions of the British Geographers*, 32 (1): 9-28

Taylor, M. (2006) *From Pinochet to the "Third Way". Neoliberalism and Social Transformation in Chile*. London: Pluto Press.

Tecklin, D. (2014) *Environmental Governance and the Politics of Property in Chile*. Arizona: The University of Arizona (Electronic Dissertation).

Tecklin, D., Bauer, C. and Prieto, M. (2011) "Making environmental law for the market: the emergence, character, and implications of Chile's environmental regime". In *Environmental Politics*, 20 (6): 879-898.

The Guardian (2017a) "*Santiago city guide: what to see, plus the best bars, restaurants and hotels.*" Published online January 14, 2015.

The Guardian (2017b) "*Did Pinochet-era deregulation cause Chile's worst-ever wildfires?*" Published online March 3, 2017.

United Nations Environment Programme-UNEP (2016) *Food Systems and Natural Resources. A Report of the Working Group on Food Systems of the International Resource Panel*.

United Nations Conference on Trade and Development-UNCTAD (2006) *A Case Study of the Salmon Industry in Chile*. New York and Geneva: United Nations.

Universidad de Chile (2014) *Encuesta Nacional de Consumo Alimentario. Informe Final*. Santiago: Universidad de Chile.

Valdés, A. and Foster, W. (2014) *The Agrarian Reform Experiment in Chile History, Impact, and Implications*. International Food Policy Research Institute Discussion Paper.

Valdivia Ortiz de Zárate, V. (2003) *El golpe después del golpe. Leigh vs. Pinochet*. Santiago: LOM

Velásquez, A. (2016) *Causas y efectos de la marea roja*. Published online in El Mostrador, May 13, 2016.

Verdugo, G., Arias, V. and Perez-Leighton, C. (2016) Análisis del precio de una dieta saludable y no saludable en la Región Metropolitana de Chile. *Archivos Latinoamericanos de Nutrición*, 66 (4) 272-278.

Verma, M. (2014) *Energy Use in Global Food Production. Considerations for sustainable Food Security in the 21<sup>st</sup> Century*. New York: Springer.

Vio del Rio, F. (2007) The Nutrition Transition in Chile. In *Food Policy for Developing Countries: The Role of Government in the Global Food System*, New York: Cornell University.

Wallerstein, I. (2016) "Structural Crisis, or why Capitalists may no longer find Capitalism rewarding", in Wallerstein, I., Collins, R., Mann, M., Derluguiani, G. and Calhoun, C. (eds.) *Does Capitalism have a future?* Oxford: Oxford University Press.

Weis, T. (2013) *The Ecological Hoofprint: the global burden of industrial livestock*. New York: Zed Books.

World Bank (2005) *Technology and Growth Series: Chilean Salmon Exports*. Number 103.

World Bank Database (2017) Accessed May 10, 2017.