A history of abundance and vulnerability:

food sovereignty and food security in Venezuela, 1998-2007

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MSc International Public Management and Public Policy 2016/2017

Erasmus University Rotterdam

Date of completion: 25/07/2017

Word count: 23171

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Summary

This master thesis looks at the food sovereignty policies implemented in Venezuela between 1998 and 2007, and it analyzes how and to what extent they were able to achieve food security.

To do so, the study first presents the definitions of food security and food sovereignty, the various discourses connected to the two concepts, the literature on the relation between the two, and possible criticism to their underlying theories. Also, this paper underlines the connection between the policies implemented in the Bolivarian Republic and food sovereignty. To see their impact, food security is examined both at the macro and the micro level, and the outcomes are measured according to its four dimensions – food availability, access to food, food stability, and food utilization. The indicators' selection follows the recommendation of experts and scholars; but the formulae behind these indicators are sometimes modified by the author, in order to better measure the dependent variable.

This paper relies on a case study as a research method, and a contribution analysis is used to establish the effects of food sovereignty policies on food security.

The thesis concludes that these policies influenced food security on various dimensions. However, the results obtained by the government aren't fully compelling: therefore, this thesis argues that Venezuela doesn't prove the validity of food sovereignty policies.

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Abbreviations

ADER:	Average Dietary Energy Requirement
CASA:	Corporacion de Abastecimiento y Servicios Agrícolas
CVA:	Corporacion Venezolana Agraria
DES:	Dietary Energy Supply
FAO:	Food and Agriculture Organization
FONDAFA:	Fondo de Desarrollo Agropecuario, Pesquero, Forestal y Afines
FUNDAPROAL:	Fundación Programa de Alimentos Estratégicos
FS:	Food Sovereignty
FSM:	Food Sovereignty Movement
GMO:	Genetically Modified Organism
GDP:	Gross Domestic Product
INCES:	Instituto Nacional de Capacitación y Educación Socialista
INDER:	Instituto Nacional de Desarrollo Rural
INE:	Istitudo National de Estadistica
INTI:	Instituto Nacional de Tierras
LTDA:	Ley de Tierras y Desarollo Agrario
LVC:	La Via Campesina
OAS:	Organization of American States
OXFAM:	Oxford Committee for Famine Relief
PPP:	Purchase Power Parity
TBIE:	Theory-Based Impact Evaluation
WB:	World Bank
WDI:	World Development Indicators
WTO:	World Trade Organization

Chapter 1—Introduction

The first chapter introduces the topics of food sovereignty and food security, it gives an overview of the objectives of this study, it deals with the research question, it provides a brief introduction to the research design, it underlines the academic and societal relevance, and it contains a reading guide for this thesis

1.1 Introduction

In the last twenty years, there has been a proliferation of food sovereignty movements that have reasserted the centrality of agriculture and peasant production in the 21st century (Lavelle, 2013). The concept of food sovereignty was first formulated by the social movement La Via Campesina (LVC) in 1996, at the World Food Summit of the Food and Agriculture Organization (FAO) in Rome. This movement, along with the various NGOs across the globe that compose the Food Sovereignty Movement (FSM), aims to change the international food regime, currently dominated by a neoliberal approach. According to its manifesto, the organization believes it is the right of each nation to produce its own food, respecting cultural and productive diversity. Besides, the movement considers the family-farm based production the only viable solution, rejecting industry-led alternatives and technologies (Lee, 2013). Finally, international institutions, such as the World Trade Organization or the World Bank, are considered a threat to food sovereignty, an expression of the incumbent nations that try to control illegitimately other states (La Via Campesina, 2003). The concept, due to its ostensibly universal applicability, has attracted the attention of scholars and researchers, and could be described as "the leitmotif of agrarian reforms in the twenty-first century" (Kappeler, 2013).

Food sovereignty is, as stated by the proponents, a precondition to food security. According to the widely used 1996 World Food Summit definition, food security exists "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996).

In recent years, many countries have introduced food sovereignty policies or enshrined the concept in their constitution, such as Mali, Ecuador, and Venezuela. According to Mckay, Nehring, and Walsh-Dilley (2014), the latter has implemented the highest number of food sovereignty policies, being the only state to fully embrace food sovereignty's approach.

In the last years, the government has been led by the socialist party. After a failed coup in 1992, Hugo Chavez became president in 1998. The "Chavista" government has promoted many structural changes in the political, social, and economic systems. It is no surprise that these changes have also involved the agricultural sector.

In his years as president, Hugo Chavez has tried to increase food security. To do that, the government has promoted a new constitution and introduced new food-related policies. The new constitution, enacted in 1998,

included many elements related to food sovereignty, and so did the reforms that followed. Among the various policies, the most drastic was probably the land redistribution. Also, the state implemented a new "social" economy where cooperatives were established and supported by the government. These significant changes were funded by the sales of national oil (Purcell, 2016).

Many NGOs, such as OXFAM (2010), have praised Venezuela's work. According to them, the food security level in the Bolivarian Republic under Chavez has increased. However, problems have started to arise after the 2007-2008 world food price crisis. In the following years, and especially since 2013, news of food shortage in Venezuela has been reported by many journalists (e.g. Cubillos, 2016; Gillespie, 2016). However, food sovereignty NGOs have contested these articles, stating that “food is in abundance” and that it is only a distribution problem (Camacaro & Schiavoni, 2016). All in all, it looks like that there is no consensus whether food sovereignty policies have worked in Venezuela.

This thesis doesn’t aim to study the food shortages in the country; rather, it directs its attention toward the situation in the Bolivarian Republic before the tragic world food price crisis that caused economic instability and social unrest across the globe. There is a lack of in-depth analysis regarding food security in Venezuela during this period: a gap in the literature that this paper aims to address.

1.2 Research objectives and question

The aim of this paper is to test whether the recipe indicated by the Food Sovereignty Movement to achieve food security has been successful. As said above, Venezuela is the only country having extensively followed its “formula", representing, therefore, a case that allows to build a new understanding of food sovereignty recipe's effectiveness. Consequently, the research question is:

To what extent and how did the food sovereignty-oriented policies in Venezuela achieve food security?

Also, various sub-questions are introduced. The sub-questions are:

1. How are food sovereignty policies supposed to lead to food security?

2. What food sovereignty policies did Venezuela carry out and how were they implemented?

3. Were food sovereignty policies successful in achieving food security?

1.3 Design of the study

To address the research question, a theory-guided case study will be used. This study adopts a single-case design, which is particularly useful in social study areas where there are no other cases available for replication (Zainal, 2007). Besides, the design can provide a detailed analysis of this rare case, offering an in-depth insight (Yin, 2013). Also, a contribution analysis is conducted to establish the effects of food sovereignty policies on food security.

To answer the first sub-question, this thesis will rely extensively on the papers published by the FSM and on researches linked to food sovereignty. To see whether the agricultural policies implemented in Venezuela can be considered related to food sovereignty (sub-question 2), this study will analyze the food sovereignty manifesto and the policies presented by the FSM at the 2007 Nyeleni forum. After having done so, it will compare them with the food-related reforms implemented by the Venezuelan state. Finally, to answer the last sub-question, this paper will observe the changes in food security, measured by several indicators at various levels and dimensions, to see the impact of the various policies.

This work will also contemplate the possible influence of other intervening variables, and it will try to understand their impact. To name a few of them, this paper will examine adverse climate conditions; which may have had an impact on food production; Gross Domestic Product per capita, which allowed Venezuelan people to purchase more food; and the presence of food aid projects aimed at increasing food security.

To conduct the analysis, this thesis will use detailed data provided by national institutions, such as the Banco Central de Venezuela (BCV), and by international organizations, such as the Food and Agriculture Organization (FAO).

1.4 Academic relevance

In recent years, numerous articles have focused on the food sovereignty policies in Venezuela. Some have pointed how the economic and social systems were profoundly restructured to match the food sovereignty's principles (for example, Enriquez, 2013; Lavelle 2013) or the role of participative democracy to formulate agricultural policies (e.g. Schiavoni & Camacaro, 2009; Aniyar, 2013). Also, scholars have conducted comparative researches to highlight differences and similarities between the Venezuelan food sovereignty policies and other countries' approach (for example, McKay et al., 2014). Furthermore, Enriquez and Newman (2016) have focused on how the political and economic transformations under the Chavez' government have

impacted the state's capacity to attain its goal of national food sovereignty. Finally, a few scholars have discussed the food security improvement under Chavez (e.g. Espinoza, 2013; Gutierrez, 2015).

All in all, it seems like there is still room for investigation for two reasons. First, because authors have mainly concentrated their work on food sovereignty and less on food security in Venezuela; and when the latter was part of the study, it was measured using mostly indicators such as hunger or undernourishment, without considering the various levels and dimensions of this concept. Second, because scholars have prevalently focused on the period after the economic and food price crisis, but little has been done to scrutinize the Bolivarian Republic before the 2007 and 2008 crisis of the international food regime.

Research in this area is valuable because it provides more information regarding the impact that food sovereignty policies can have on food security. All in all, it seems that this study is among the first to explicitly investigate in this direction, for this time frame, and with this depth.

1.5 Societal relevance

Venezuela has taken a unique path to address its lack of food security, a model that, according to the proponents, is the solution to hunger and can be exported. Therefore, understanding whether food sovereignty can keep its promises is extremely relevant. If they were successful, governments could consider rethinking their policies, having the right tool to achieve an improvement in their countries. Besides, the Food Sovereignty Movement proposes a model that is extremely different from the current system. If it became dominant, the agribusiness would change dramatically. Transnational corporations would give way to small farms; and the agribusiness would have to abandon the research on genetically modified food, predominant in recent years, since food sovereignty prefers traditional methods. Furthermore, as it will be underlined in chapter two, it would have a significant impact on the environment: more small and medium-scale farms and less large landowners means fewer greenhouse gasses. Finally, if successful, the empowerment of local communities may become an intriguing option for governments that seek a new way to receive inputs from the citizens, elaborate policies, and receive feedback.

1.6 Thesis Overview

The second chapter will provide a literature review of the food sovereignty and food security paradigms - the several definitions and the development of the two discourses. Also, countries that have adopted food sovereignty principles will be listed, in order to understand Venezuela's peculiarity, and previous works regarding food security and food sovereignty in the Bolivarian Republic will be introduced. The third chapter will present the theoretical framework and the hypothesis. The fourth chapter will provide the research design,

underline the data sources, and present the operational definitions of the dependent, independent and intervening variables. Also, the reliability and validity of the paper will be discussed. The fifth chapter will provide an overview of the Venezuelan food economy since 1999, and it will list and describe the food-related policies that were implemented. Besides, the connection between these pieces of legislation and the FSM will be highlighted. The sixth chapter will present the empirical analysis findings and it will discuss them. The last chapter, the conclusion, will suggest an interpretation of the results and it will answer the research question. Finally, it will highlight the thesis' strengths and limitations, and it will present suggestions for further research.

Chapter 2 – The concepts of food security and food sovereignty: origins, discourses, and their role in food policies

In this chapter, the definitions of food security and food sovereignty will be offered, the various discourses connected to the two concepts will be underlined, and possible criticism will be highlighted. Furthermore, it will be explained how food sovereignty policies are supposed to lead to food security, answering the sub-question 1. Also, this section will provide a brief look at the several nations in the world that have implemented food sovereignty policies. Finally, previous works regarding Venezuela's food sovereignty policies and food security will be presented.

2.1 The definition of food security and the food security discourse

The concept of food security has developed and multiplied during the years (Smithe et al., 1993). As highlighted by Maxwell (1996), the fact that there are several iterations of this term should not surprise: they reflect the various natures of the food problem experienced by the people around the world.
Currently, the most common definition of food security comes from the 1996 FAO World Food Summit. According to the organization, food security "exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996). This definition is the result of several shifts in the history of thinking about food security, as it will be underlined in the following paragraphs.

The global discussion surrounding food security emerged in the 1930s, as the result of an alteration in the states' perception of their role in the domestic and world stage regarding the agricultural sector (Shaw, 2007). Countries began to cooperate on issues related to international food and agricultural systems after World War II, but the term "food security" – as it is contemporarily discussed – arose only in the 1974 World Food Summit (Drummond, 2012). The conference, born after two years of world food prices crisis and famine in several regions of the globe, defined food security as "the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (FAO, 1975, as cited in Maxwell & Devereux, 2001).

In the same years, food security emerged also as a discourse, as a way to fight and explain hunger. To address the world food price crisis, international institutions focused on various solutions. To help developing countries, Western states relied on production increase, both domestically and in the developing countries. Cooperating with the national governments, perceived as the main actors able to intervene, new farming

methods and techniques through technology transfer were introduced – the so called “Green Revolution” (Jarosz, 2014).

However, only American and European farmers were considered as key actors able to fight against famine and hunger in the world through exportation (Fish et al., 2013). According to Kissinger (as cited by Timmer, 2000), few states had the "fortune and technology" to produce more than needed. Therefore, developed countries had to provide food, both through food aid and by selling their products through international trade. Interestingly, the idea that EU and USA alone can feed the rest of the world is sometimes still present today (Fish et al. 2013).
In the following years, the concept of food security evolved, encompassing a wider range of dimensions. In 1986, the World Bank redefined food security as “access by all people at all times to enough food for an active, healthy life” (World Bank, 1986, as cited in Barrett, 2002). The focus had shifted from macro to micro: food security wasn’t merely a matter of food supply, but also of access and entitlement (Maxwell, 1998). In other words, food security was connected to purchasing power on the part of households to afford basic food (Pinstrup-Andersen, 2010). This meant that poor people were considered, at least partially, responsible for alleviating their hunger, either by making more money or by increasing their field productivity (Clapp and Cohen, 2009). In addition, the 1986 definition is important because it framed for the first time food security as a developing issue. As such, it was conceptualized as identical to mainstream development problems, which could be addressed through solutions such as trade liberalization, integration into the global market, and structural adjustment programs (Jarosz, 2014). Therefore, it was up to the global food regime to provide enough food, while the state had to step aside.

Finally, the previously mentioned 1996 definition gave food security a human right-oriented dimension. In fact, FAO underlined the fundamental right of everyone to be free from hunger, defined as the right to food: it was not just the quantity of food that matters, but also the “quality” of the entitlement (Mechlem, 2004). The food security discourse and its responses were – and still often are – embedded in dominant neoliberal development discourses, emphasizing increases in production, modernization, globalization, and alignment with transnational agribusiness (Jarosz, 2014)

2.2 Criticism to the dominant food security discourse and the rise of the international food sovereignty movement

In response to the food security’s discourse and the disillusion towards the policies linked to it, many authors have tried to formulate different paradigms.

In the 1980s, Marxists scholars highlighted how the food crises could be explained as a failure of capitalism (Wisner et al., 1982). Other academics have relied on a "periphery-center" perspective: the capitalist North tries to achieve a strong agricultural production at the expense of the underdeveloped South (Redclift, 2002). In other words, North America and Western Europe exploit land and resources of, say, Africa, while preventing the birth of local stable food production. Also, nowadays many states pursue food security and agrofuel supply by purchasing land in foreign countries, endangering the communities that live in these lands (Houtart, 2010). Furthermore, some scholars underline the fact that, although the WTO aims to food trade liberalization, many developed countries still have protectionist measures: they may stabilize the prices internally, but they also transfer the costs to the world market (Bucciarelli, 2010).

In 1996, an international peasant organization, La Via Campesina, was formally established, having as objective "food sovereignty", a term coined by the group. It was, and still is, a coalition of local and national organizations from Europe, North America, Latin America, Africa, and Asia, and it can be considered the main actor in the Food Sovereignty Movement.
According to the manifesto (1996), the organization believes it is the right of each nation to produce its own food, respecting cultural and productive diversity. Besides, the organization considers the family-farm based production the only viable solution, rejecting industry-led alternatives and technologies (Lee, 2013). Finally, LVC is in antithesis to the current food regime: while the WTO promotes food security via trade and open markets, La Via Campesina focuses on national sovereignty and domestic markets (Desmarais, 2007). International institutions are considered a threat to food sovereignty, an expression of the incumbent nations that try to control illegitimately other states. They only claim to provide "food security", while actually creating a marketplace where only a minority of the world's population can participate (McMichael, 2014).

2.3 A new framework for food sovereignty: the pillars of food sovereignty

To shape a common agenda, in 2007 the International Forum for Food Sovereignty - also called the Nyeleni Forum - took place in Selingue in Mali. This meeting was able to bring together food sovereignty movements and organizations from all over the world, and it succeeded in developing a framework able to realize food sovereignty in the various countries. The result consisted in the establishment of food sovereignty's defining principles, providing a framework that also became widely used in the literature (for example, see Beuchelt & Virchow, 2012; or FAO, 2013). This framework consists of six pillars.
First, food sovereignty focuses on food for the people: the need for healthy and culturally appropriate food must be at the center of every policy. Consequently, every country and region should adopt the appropriate pieces of legislation to guarantee diversified food production. In fact, food is not just a commodity that can be traded for profit: it has a deeper social value.

Second, it values food providers: it supports sustainable livelihoods and it respects the rights of small-scale farmers – which, according to the declaration, are often forced to leave their land by the agribusiness. Also, it gives importance to the protection of the workers from exploitation, violence, and marginalization.
Third, food sovereignty promotes localized food systems, by closing the distance between providers and consumers, and putting the former at the center of decision-making. In other words, local food should be privileged over products supplied by a distant market, and it refuses an export-oriented agriculture. Furthermore, it is stated that free-trade agreements are used to prevent developing countries from protecting their agricultural sector, and therefore are inimical to food sovereignty. In fact, they are instruments of transnational corporations, which use them to control and benefit from the global market for food.
Fourth, food sovereignty puts control of shared resources – such as water, seeds, and territory. - on local food providers. They can use and share them in an environmental and socially sustainable manner, which protects diversity. Therefore, privatization of these resources is against the food sovereignty approach.
Fifth, it gives importance to the traditional agricultural techniques, local knowledge and species, developing appropriate research systems and rejecting technologies that may threaten or contaminate the environment, such as genetically modified organisms (GMOs).
Finally, food sovereignty promotes low-external-input agroecological production, in order to increase the resilience of the ecosystem from climate change and maximize the contribution to the ecosystem. In other words, it rejects energy-intensive cultivation methods that may harm the environment and the people who inhabit it.

At the 2007 Nyeleni Forum, a second framework was also presented. Developed two years earlier by the Asian branch of the Food Sovereignty Movement, this framework underlined several domestic market policies suggested to achieve food sovereignty in developing countries.
First, price support and price stabilization through state trading enterprises, to ensure adequate prices, and therefore income. Second, the provision of subsidies for the investments in agriculture, of marketing, and of post-harvest support, prioritizing the domestic market over international trade. Third, the introduction of protective measures against dumping, going even beyond WTO rules when necessary. Fourth, the reliance on bottom-up decision-making processes, to guarantee the broadest participation of smallholders and poor peasants. Finally, the implementation of agrarian reforms to distribute land and assets equitably to men and women farmer, to revitalize family and peasant farming. This idea is also connected to the importance of small-scale farms, considered the best model to achieve food security.
The overall objectives of these policies were the enhancement of domestic production and the protection of the local markets to ensure food security in developing countries. Clearly, these measures were in contrast with neoliberal, export-oriented solutions.

To conclude, some scholars have affirmed that food sovereignty implies national self-sufficiency (for example, Agarwal, 2014; Edelman, 2014). The author of this paper, however, does not agree: in fact, a widely used

definitions of food sovereignty by La Via Campesina (2003) states that people should have the right to determine the extent to which they want to be self-reliant; not that countries should necessarily achieve self-sufficiency.

2.4 How food sovereignty can lead to food security

Many scholars have provided an explanation on why food sovereignty's framework is economically feasible, desirable and can help to achieve food security.

For example, Rosset (2000) believes that, contrarily to conventional wisdom, small and medium-scale farms are more productive than more industrialized, large-scale systems. First, they can use the ecological space – land, and water – more efficiently than larger farms, which tend to rely on monocultures. In fact, small farms tend to use a crop mixture, which is more resistant to harmful species, such as weeds. This implies that the harvest is better, and that farmers don't have to invest in labor or use chemical products to deal with the weeds. Second, the quality of work is higher: since small farm family's life condition depends on the productivity of the soil, the piece of land is better cultivated than, say, alienated labor. Third, large farms tend to invest in machinery to reduce labor costs and improve logistics. However, mechanization doesn't necessarily imply an increase in productivity. In fact, machines are particularly efficient when used with monocultures; but monocultures, however, don't use the available niche space as well as the complex systems, which rely on different plants to better fill the unworked soil. Therefore, more complex farming systems get more total production per unit area.

Moreover, fields farmed with a more traditional approach to agriculture based on agroecology are considered more resistant to the climate change effects, contributing to a higher level of food security (De Schutter, 2010). Also, Altieri (2008) suggests that sustainability can be achieved mainly with small farms. Biodiversity, in fact, can only be protected with a high level of plant diversity and local knowledge. This provides stability and diversity of production, at a higher level than the large-scale farms. Predictably, these elements have a positive impact regarding food security, income generation, and environmental conservation. Furthermore, the author highlights that small farms produce fewer greenhouse gasses, therefore cooling the planet and reducing the potential impact of the negative effects of global warming. Herbel (2013) believes that the empowerment of small-scale producers is key to improve food security in Latin America, where they cultivate 34% of the land. The author argues that they should be included in the social and political fora, in order to improve policy-making and reduce the barrier they face when they try to enter markets. Also, they can better define their needs, preferences, and agenda, identifying issues and generating solutions. Besides, the creation of a network to unite them increases internal learning process.

In addition, Wiggins (2009) states that smallholder development delivers food security. Analyzing the agricultural growth in six African countries, the author argues that more farm output can be achieved through smallholder development, and that small-scale farms present no significant disadvantages compared to the big-

scale ones. Since the latter are significantly less productive, the prices of food products will decrease, leading to greater access to these products for the poor.
Finally, Hazell (2005) thinks that in labor-abundant economies small farms contribute to greater food security: their development can increase poverty reduction and growth, and it reduces the costs for the consumers in backward areas. In fact, when consumers buy locally produced food, they avoid transportation and marketing costs.

All in all, food sovereignty is considered a precondition to food security by its exponents. However, food sovereignty proponents don't always share the same points of view: for example, to achieve food security, some scholars focus on the producers' economic needs and the market, while others advocate state or society intervention (Alkon & Mares, 2012; Guthman, 2008). Furthermore, food sovereignty authors are often divided regarding international trade. Some scholars propose a negative views of trade: for example, Rosset (2006) underlines how export-oriented trade favors mainly large-scale farms, marginalizing the smallholder farmers. Nevertheless, other food sovereignty proponents (such as Patel, 2009) highlight the importance of international trade for many communities, and believe that a more fair and transparent trade system can be the solution. Their position should not be surprising: international trade still plays a prominent role for small-scale farms. They produce over 80% of the world's tea, sugar cocoa and bananas (Fairtrade Foundation, 2013). Therefore, they are vital for many developing countries and for many small-scale farmers.

To conclude, despite a convergence of views on the majority of issues, it seems that inside the Food Sovereignty Movement there are sometimes contrasting views. According to Philip McMichael (2015), this may be inevitable: consumers, urban classes, and producers have several points of view, and the agricultural communities around the world develop various adaptive strategies to improve their situation.

2.5 Food sovereignty criticism

Food sovereignty has been object of criticism for many reasons.
Food security scholars argue that if food sovereignty aims at self-sufficiency (as many scholars believe, as stated before), it is a threat to food security. In fact, not all states can be self-reliant for geographical or climatic reasons (Agarwal, 2014). Moreover, as jut explained, exports matter for millions of small-scale farmers, and they are vital to communities around the world. According to Burnett and Murphy (2014), NGOs and farmers' organizations pursue an ideological agenda, neglecting the food producers' preferences. The two authors also suggest that imports are a safety net, which increases the robustness of the system against bad years. Finally, trade helps the enrichment of the diet through the access to needed imports.

In addition, some scholars don't believe that small farm households are a satisfactory solution, since their productivity is significantly inferior. In fact, mechanization is less efficient only when heavy machinery is unsuited to local soils; when properly integrated, however, it increases production (Chand et al., 2011). Also, hired labor seems to be more productive than family labor (Rao and Chotigeat, 1981). Finally, large farms can attract capital more easily, which is fundamental to increase the productivity (Chan-Kang, 2005). If the data shows that small farms are more productive, it is only because they are more present in fertile regions, while larger farms can more often be found in less fertile regions (Chand et al., 2011).

Moreover, some authors criticize the food sovereignty proponents' choice to reject genetic engineering, preferring "traditional" techniques and "typical" plants: they believe that this refusal has many adverse effects regarding food security, and that abandoning GMOs is a lost opportunity for several reasons.

First, according to Qaim and Kouser (2013), genetic engineering can increase food production, and therefore the availability of food at the local and global level. These crops are, in fact, more resistant to biotic and abiotic stresses, resulting in an increase in productivity and a decrease in the costs of production.

Second, GMOs can increase the food safety and food quality. Even though the FSM believes that they may pose a threat to human health, a wide range of literature suggests that it is not the case. As De Francesco highlights (2013), GMOs didn't produce any case of food-borne illnesses that led to hospitalization, in contrast to the 128,000 cases caused by "traditional" food contaminated with pathogens. It must be said, however, that there is no scientific consensus on GMO safety, since it is hard to analyze their long-term effects on the environment and on animals – there is a lack of financial support to these studies, and there is no agreement on how to conduct them (Hilbeck et al., 2015).

Third, GMOs can have a positive impact on development (Desai and Potter, 2013): it increases productivity, guaranteeing the availability of food for a growing population. Furthermore, it may lead to an increase of income for small-scale farmers, which is expected to result in an increase in food consumption in poor farm households – and food producers in developing countries would benefit more than the ones in developed countries.

Besides, the refusal of GMOs may be a wasted chance to protect producers and consumers from the effects of climate change. In fact, GMOs can be more resistant to extended periods of droughts, pestilence or severe rainfall conditions (Lu et al., 2016). According to the Marrapese and Matthews (2014), GMOs are the best way to guarantee food security in the long term, since by 2050 the population of the Earth will reach 9 billion and significant changes to the climate conditions are likely to occur.

Furthermore, as highlighted above, the FSM believes that food sovereignty policies can help to preserve traditional techniques and species, which may be abandoned with the introduction of monocultures and GMOs. However, some authors contest the definition of "traditional" regarding the plants. For example, Tagliabue (2015) underlines the fact that many biological organisms that are used for consumption are not centuries old:

they were created in the last decades, as results of chemicals and radiation. Also, he points out that genetic engineering may actually be a good solution to protect typical and local food.
To conclude, some authors have criticized the movement from a sociological point of view. Bernstein (2013) criticizes food sovereignty's differentiation of the agrarian classes, which divides it in “peasants” and the opposed category of capitalist entrepreneurs. According to the author, the movement fails to comprehend the radical difference between and within the agrarian classes, and it fails to see that farming is driven by commodity production. Also, the author believes that the role of the capital is unfairly seen as disruptive, failing to underline the key role that it has played in the rural development and in the increase of food production. Finally, Bernstein questions whether the food sovereignty recipe can provide enough food and at a low price if the current food system was abandoned.

2.6 Food sovereignty policies in the world

Despite being successful in the creation of a global movement, food sovereignty-oriented policies have been introduced only in few countries, namely Ecuador, Nicaragua, Bolivia, Venezuela, Nepal, Mali, Senegal and Egypt. After reviewing how the concept of food sovereignty was included in the national legislation, it can be concluded that there are three categories.

The first category comprehends countries that have enshrined the concept in the national constitution but haven't developed a following legislation. Nepal and Egypt belong to this group.

Nepal adopted an interim constitution in 2007, which provided the legal basis for the protection and the promotion of the right to adequate food in the country. A new 2015 version maintained the parts dedicated to food sovereignty intact. According to the constitution, every citizen has the right to food and food sovereignty, and the state has an obligation toward its people in pursuing policies which can establish this right (Article 36). Food sovereignty is also considered a way to improve the economic situation of the indigenous people (Article 35), while promoting sustainable production and enhancing investments in the agricultural sector (Article 42). As underlined by the FAO (2015), the constitution set a strong legislative basis to move towards food sovereignty. Nonetheless, no specific statutory norms have followed, which may be fundamental to give effect to important aspects.

Egypt is the latest country to include food sovereignty in its legislation. In the 2014 constitution, there are multiple references to FS: it states that every citizen has the right to food, and food sovereignty must be ensured by the state, maintaining biological diversity and types of local plants and producing in a sustainable manner (Article 79). Nevertheless, only one article is dedicated to food sovereignty principles. Furthermore, the

government has yet to present pieces of legislation that would *de facto* ensure food sovereignty. Thus, the struggle to achieve food sovereignty is not over.

The second category includes countries that have produced at least one piece of legislation, different from the constitution, that contains elements of food sovereignty. These countries' treatment of obligations is not always precise, and it is often unclear what they add to the justiciability of the right to food. In all cases, the reforms were not as articulated or advanced compared to Venezuela, for several reasons. Senegal, Mali, Bolivia, Nicaragua, and Indonesia belong to this group.

Senegal adopted food sovereignty principles in the 2004 Loi d'Orientation Agro-Silvo Pastoral, which, as clearly stated in the introduction, was specifically aimed at obtaining food sovereignty. This policy was strongly supported by local farmers' organization, which also participated in its formulation (Claeys, 2013). The law aims to guarantee adequate food for people (Article 5) and promote rural development (Article 22). To do so, the state seeks to produce a long-term strategy to increase productivity, better protect the workers in the agricultural sector, and formulate a clear legislation regarding land redistribution. Also, the bill underlines the importance of sustainable agriculture and its role in reducing the impact of climate change (Article 6). Finally, this piece of legislation establishes the creation of consultative committees across the country, to increase participation in future policy formulation and the adoption of a bottom-up approach (Article 39).
The full implementation of the law, however, was delayed for almost ten years (Beuchelt & Virchow, 2012), and it hasn't been followed by additional pieces of legislation.

Mali introduced in 2006 the Loi d'Orientation Agricole (LAO). The law, written in cooperation with the local food sovereignty organization (Claeys, 2013), explicitly underlines food sovereignty as a long-term objective for the country (Article 7). In addition, many articles contain elements that can be linked to the food sovereignty pillars. The legislation aims to reduce poverty in the rural area, to protect the natural resources, to modernize the agricultural sector and to ban non-sustainable resources (Article 183 to 185). Also, it is stated that the domestic market and the national products should be privileged over international trading (Article 187). Furthermore, Article 145 supports the preservation of the different plant varieties. All in all, many elements present in the food sovereignty pillars can be traced in Mali's legislation. However, this law, despite having led to the creation to a national fund for agricultural development – as stated by Claeys (2013), often underfunded – is the only one dedicated to food sovereignty, and it wasn't followed by further bills.

Bolivia's first piece of legislation that can be related to food sovereignty is the 2006 "Ley de Recondition Comunitaria de la Reforma Agraria". According to the first chapter, dedicated to the general principles, the law aims to redistribute the land to reduce inequality, increase the mechanization of the agricultural sector, promote and support small-scale farmers, and create a privileged market for local products. In 2009, a new constitution was introduced, having food security and food sovereignty as key elements in many paragraphs.

Importance is given to the right to food (Article 16), rural development (Article 605), and the denial of international agreements not coherent with food sovereignty's principles (Article 409). Also, the refusal of GMOs and of other food products considered dangerous for the human health (Article 407) is highlighted, while suggesting the adoption of eco-friendly techniques and the protection of local species and knowledge. These elements were also addressed in national plans, such as the Rural Development and Food Sovereignty and Security Policy, which aimed to increase food production, promote new private-public partnerships, support small farms, and included state-provided technical and marketing expertise for small and medium scale producers in the agricultural sector. However, despite the concept of food sovereignty can often be found in Bolivia's legislation, not enough was done to consolidate what stated in all these bills. For example, the commitment of the government to the program was minimal: in fact, compared to the significant investments in Venezuela, Bolivia deployed only limited funding, and the programs mainly relied on external financing. Similarly, despite what was affirmed in the constitution, the state *de facto* still accepts and even supports GMOs (Clockburn, 2013). According to McKay (2013), this was not a surprising outcome: Bolivia has strong agricultural interest groups, which have hindered reforms that aim to reduce the agricultural inequality. Therefore, the policies had a minor impact and failed to increase food sovereignty.

Nicaragua introduced in 2009 the Law of Food and Nutritional Sovereignty and Security – also known as the Law 693. This bill was significantly influenced by the drafts written by the LVC's local branch in the period between 2004 and 2006, but it was also developed with the technical support the FAO, which amended the draft removing many key aspects of food sovereignty, such as the protection from GMOs and the prioritization of small and medium-scale farms (Godek, 2014).

The final redaction is a piece of legislation that explicitly underlines the adoption of a food sovereignty approach (Article 9), focuses on the importance of food to people (in various articles of the Section 3), underlines the importance of citizen participation in the public decisions (Article 7), promotes the adoption of sustainable agriculture, supports rural development (Article 3), and protects biodiversity (Article 30).

However, this law is not the only bill dedicated to food sovereignty principles in Nicaragua. In fact, the constitution, written in 1987 and modified in 2014, dedicates one article to food, focusing on the importance of an adequate availability of food (Article 63). However, that is the only reference to a food sovereignty principle, and the concept itself isn't even mentioned.

All in all, Nicaragua's Law 693 presents numerous relevant elements to food sovereignty but, as also highlighted by Godek (2014), there is a lack of complementary laws that could ensure food sovereignty. Besides, at present there are still some key features of the food sovereignty framework that are not present in the Nicaraguan legislation, as highlighted in Tables 1 and 2.

In 2012, Indonesia introduced a new Food Law. In this piece of legislation, food sovereignty is considered one of the three key objectives of food planning, along with self-sufficiency and food security (Article 6). The state must guarantee food for people (Article 1): to do so, it should prioritize the local market and incentivize

domestic food production. Moreover, sustainability must play a key role in the development of the agricultural sector. Also, Article 130 underlines the importance of public participation in achieving food sovereignty and promoting the necessary policies. Finally, the state should manage the stability of Staple Food price and supply, managing Staple Food Reserve and Staple Food distribution (Article 131). All in all, Indonesia's Food Law doesn't include some key features present in the food sovereignty pillars, as underlined in Tables 1 and 2. Besides, this piece of legislation was not followed by complementary policies, which could have helped the country in its path to food sovereignty.

The third category, composed only by Ecuador, includes countries that have food sovereignty elements in the constitution and have presented relevant food sovereignty-oriented reforms, but lack adequate subordinate laws to fully achieve FS and have, despite the premises, relied on neoliberal strategies.

Ecuador, under the Correa government, enshrined food sovereignty in the 2008 Constitution. The text underlines the importance of food for people, which should be produced domestically (Article 13). The agriculture sector should focus on environmentally-sustainable agriculture, and promote the control of resources among peasants – even with land redistribution (Article 281). Finally, the constitution supports local knowledge and techniques over genetic engineering, considered a direct threat to food security, and it establishes the role of the state in the seeds' preservation. In 2009, the National Organic Law was introduced, and it was modified the following year with the Amended Organic Law on the Food Sovereignty Regime. The two pieces of legislation address the importance of rural development, and further ban the use of genetically engineered food. The country has also promoted many agricultural policies and invested in social services and infrastructure, often with the support of peasant organizations (Giunta, 2014).

Nevertheless, Ecuador 's agricultural approach can't be considered fully food sovereignty-oriented. In fact, the country's economic strategy still includes a few neoliberal features. For example, in the Constitution, the aim of the state is to integrate the national economy into international markets and develop economies of scale in the food sector (Article 304). Besides, the state has tried to consolidate its power at the expense of the peasants' organizations, which seem to have lost much of their influence (Clark, 2013). Finally, the state didn't keep its promises: land redistribution was a fundamental concept in the constitution but, contrarily to Venezuela, the government didn't promote programs that could actually achieve it (Giunta, 2014).

All in all, it seems that the Correa administration has used the food sovereignty discourse to gain popular consensus and legitimize its work – doing little to actually pursue food sovereignty principles (McKay et al., 2013). In fact, the state has often supported policies opposed to the food sovereignty's ideas, and it hasn't translated FS into subordinate laws (Claeys, 2015). Ecuador has indeed proposed programs that had the potential to reflect food sovereignty principles; but they are, in one way or another, still not fully implemented (Peña, 2015).

It is still unclear whether Ecuador will move more decisively toward food sovereignty's positions in the future, but it wouldn't be surprising if it didn't happen. In fact, differently to Venezuela, large private agricultural

interests still have a significant political influence, and there is no evidence that their pressure will diminish soon (McKay et al., 2013).

All in all, it seems that many states have adopted some of the food sovereignty features, but none of them has fully embraced the concept. As it will be highlighted in chapter 5, it seems that Venezuela has adopted the food sovereignty approach more than any other countries previously listed.

Table 1.

Summary of the implementation of food sovereignty policies across the world – part 1.

Country	**Food sovereignty as objective/right**	**Food for People**	**Values food providers**	**Localized food system**
Nepal	Yes	Yes	Yes	No
Senegal	Yes	Yes	Yes	Yes
Egypt	Yes	Yes	No	No
Mali	Yes	Yes	Yes	No
Bolivia	Yes	Yes	Yes	Present, but limited funding
Nicaragua	Yes	Yes	Mixed – present in the legislation, but complemented by neoliberal features	Mixed, present in the legislation, but complemented by neoliberal features
Indonesia	Yes	Yes	Yes	Yes
Ecuador	Yes	Yes	Yes	Present, but *de facto* large farms still play a key role

Table 2.

Summary of the implementation of food sovereignty policies across the world – part 2.

Country	**Shared resources controlled by local producers**	**Protect Local Knowledge/Species**	**Work with nature**	**Followed by adequate legislation/fully implemented?**
Nepal	No	Yes	Yes	No
Egypt	No	Yes	Yes	No
Senegal	No	No	Yes	No
Mali	No	Yes	No	No
Bolivia	Present, but *de facto* still state-controlled	Present, but *de facto* use of GMOs	Yes	No
Nicaragua	No	Present, but *de facto* use of GMOs	Yes	No
Indonesia	No	No	Yes	No
Ecuador	Yes	Yes	Yes	No

An interesting remark is that only a few countries have adopted food sovereignty legislation after 2008. Since many states, as highlighted above, have become increasingly worried regarding the state of the agricultural sector after the 2008 food crisis, it would have been reasonable to expect a sharp increase of FS-oriented bills after this period.

2.7 Previous works regarding Venezuela's food sovereignty policies and food security

As already said in the introduction, the ambitious reforms carried by the Venezuelan government since the rise to the power of Hugo Chavez in 1998 have been an important topic of discussion for the academic community. The approaches to the subjects are numerous and different.

Anido (2015) has tried to highlight the trend regarding food consumption and prices variations, and Espinoza (2013) has attempted to evaluate the agricultural policies of the Hugo Chavez government regarding food production. The two authors conclude that the results of the Venezuelan policies were largely positive, but

none of the two scholars uses a multifaceted version of the concept of food security. Schiavoni and Camacaro (2009) obtained comparable results, while relying from time to time on the notion of food security. They state that food sovereignty has been able to bolster agricultural production, and believe that scarcity of products was artificially created by private distributors to make the government lose popular support. However, little evidence is provided to support the statement.

Some scholars consider the reforms more negatively. Enriquez and Newman (2013), for example, believe that Venezuela is excessively reliant on imports. Also, Purcell (2016) underlines that the Venezuelan reforms were only possible due to the significant financial resources that the state had obtained through the oil exports. He suggests that, since oil revenues are decreasing, it is debatable whether Venezuela will be able to sustain the costs in the long run. Food security is mentioned as an objective for the Chavez government, but the author doesn't focus on the result obtained in this field. Kappeler (2013) looks at food sovereignty in Venezuela and whether its model can be exported, coming to a negative conclusion. He also believes that the strategy adopted by the government is a neopopulist approach that fails to deliver and that cannot feed the Bolivarian Republic. The concept of food security is often mentioned, in particular when the scholar says that imports could help reduce hunger. However, Kappeler doesn't provide any statistical data that could support his position. Finally, Gutierrez (2015), has focused on the effects that the policies had on the basic foods' prices and the productivity of the agricultural sector, concluding that on the long run the perspectives are grim.

Many experts have also focused on the sociological effects of the reforms. For example, Lavelle (2013), studies their outcomes on the peasant classes in the Bolivarian Republic, taking into consideration indicators that may be related to food security, such as food scarcity or food production. Nevertheless, he doesn't go into details when he discusses the matter – which is more than comprehensible, since his study isn’t strictly connected to this concept. Besides, Aniyar (2013) has tried to consider and study the food sovereignty polices as an example of a new kind of participation in the formulation of bottom-up policies. In his work, he also states that the government's work has led to an increase in food security, intended as malnourishment and hunger. However, as explained before, this is a limited interpretation of food security: it is, as it will be explained in the next chapter, a more multifaceted concept.

2.8 Conclusions

In recent years, food sovereignty not only has attracted the attention of many authors, but it has also become more and more popular among peasant organizations and international and national institutions. For example, the 2012 FAO’s e-Global Strategic Framework for Food Security included this concept, and it highlighted the importance of small-scale production compared to industrialized agriculture, linking food security to food sovereignty (Jarosz, 2014). Besides, many governments reconsidered the idea that food security could only be

achieved through international trade (Wise and Murphy 2012). In fact, in recent years many national states introduced policies to increase the domestic production, invested in food reserves and stock-holding infrastructures (De Schutter, 2011).

However, it is important to underline the fact that the food regime is different now compared to 1996, when the term “food sovereignty” was coined: for example, the European and North American countries are not dominant in the international agricultural market anymore (Bureau & Jean 2013). New actors, such as the BRICS (Brazil, Russia, India, China, South Africa – but also other nations such as Thailand and Argentina) have dramatically increased their role as producers and consumers (Burnett & Murphy, 2014). The situation in the WTO itself has changed: small and poor states were successful in mobilizing against the more powerful states: for example, in 2008 the WTO trade negotiations crumbled when nations began to cooperate to counterbalance the power of the dominant countries (Khor, 2008).

Finally, it seems that the 2008 food crisis was a key turning point from many points of view, and that the food sovereignty concept is as popular as ever. However, it is important to underline that the 2008 global food crisis was not damaging from the producers' point of view: higher prices improved the attractiveness for investors, and agricultural development regained popularity (Jansen, 2014).

Chapter 3 – Theoretical framework

This chapter focuses on the theoretical assumptions, which will be tested in chapter 5 and 6, explaining the concepts, and then it frames the hypothesis and the expected relationship between food security and other intervening variables.

To generate a theoretical assumption about the explanatory power of food sovereignty policies regarding food security, it is important to define the independent variable and the dependent variable.

3.1 The independent variable

In this paper, the theoretical framework is rooted in a specific theory: food sovereignty. As highlighted in Chapter 2, some scholars believe that food sovereignty policies can be associated with an increase of food security. However, it is unclear to what extent they can affect it, and whether the Venezuelan experience can be considered successful.

The theory of food sovereignty has been extensively discussed in the second chapter. Using the literature, a results chain is graphically presented. Figure 1 includes all elements and policies considered key by food sovereignty and suggests their assumed effects on food security.

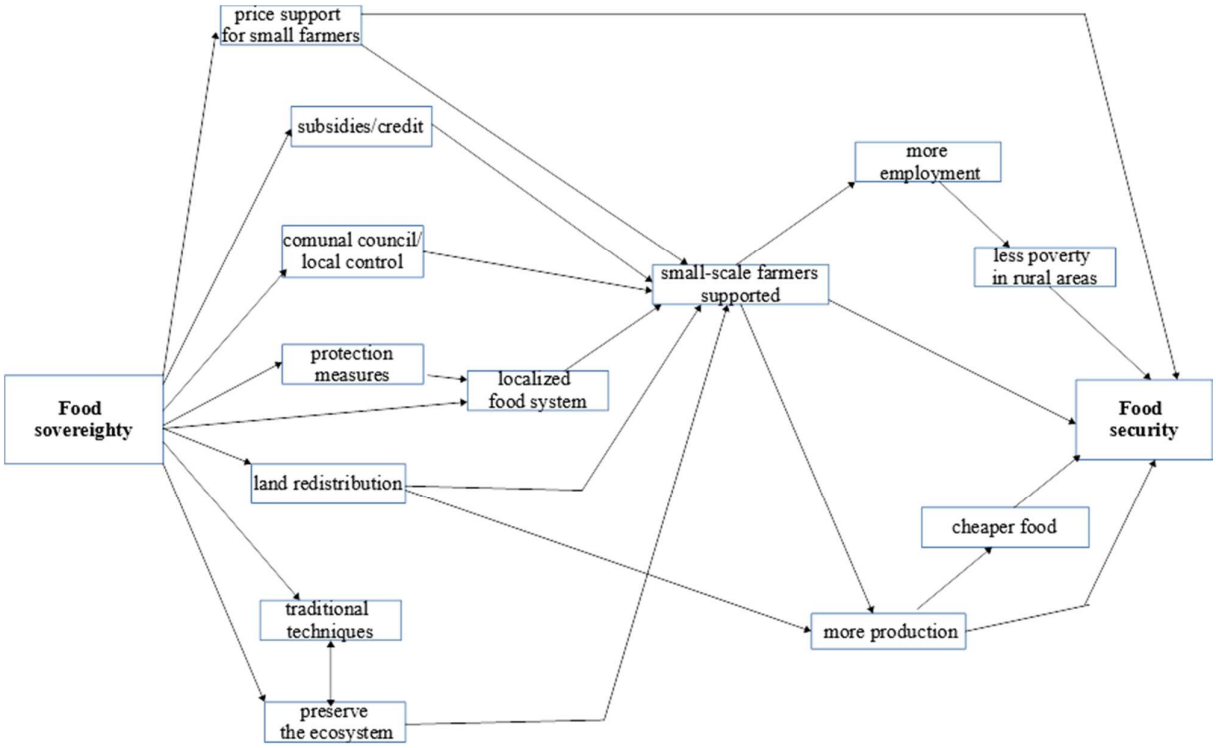

Figure 1. Food sovereignty theory as a results chain.

In a theory, it is always important to recognize the strengths and the weaknesses.
The theory presents strong links. It seems reasonable to think that land redistribution leads to support of small-scale farms. Similarly, measures may protect the domestic market, which also means that small farms wouldn't have to compete against big foreign food producers. Finally, subsidies and rural credit should have an impact on rural development and small-scale farms – the main beneficiaries of these investments.

However, as already highlighted in chapter 2, there are also a few weak links. First, it is debatable that small-scale farming is the best measure to promote rural development, and therefore increase employment and fight poverty. Second, there is an ongoing debate on whether small-scale farms produce more than big food producers.

Finally, there are some links that are extremely hard to assess. First, the impact of communal council on rural development and its role as platform for small-scale farmers. Second, that traditional techniques preserve the ecosystem - a link widely contested and extremely tough to evaluate. GMOs, in fact, are not only a scientific matter, but also ideological. While some scholars consider them "compatible" with the environment preservation, others believe that food genetical manipulation should not be allowed. Consequently, these last two points cannot be assessed in this paper.
The connection between the food sovereignty theory and food security can also be seen more in detail in Figure 2.

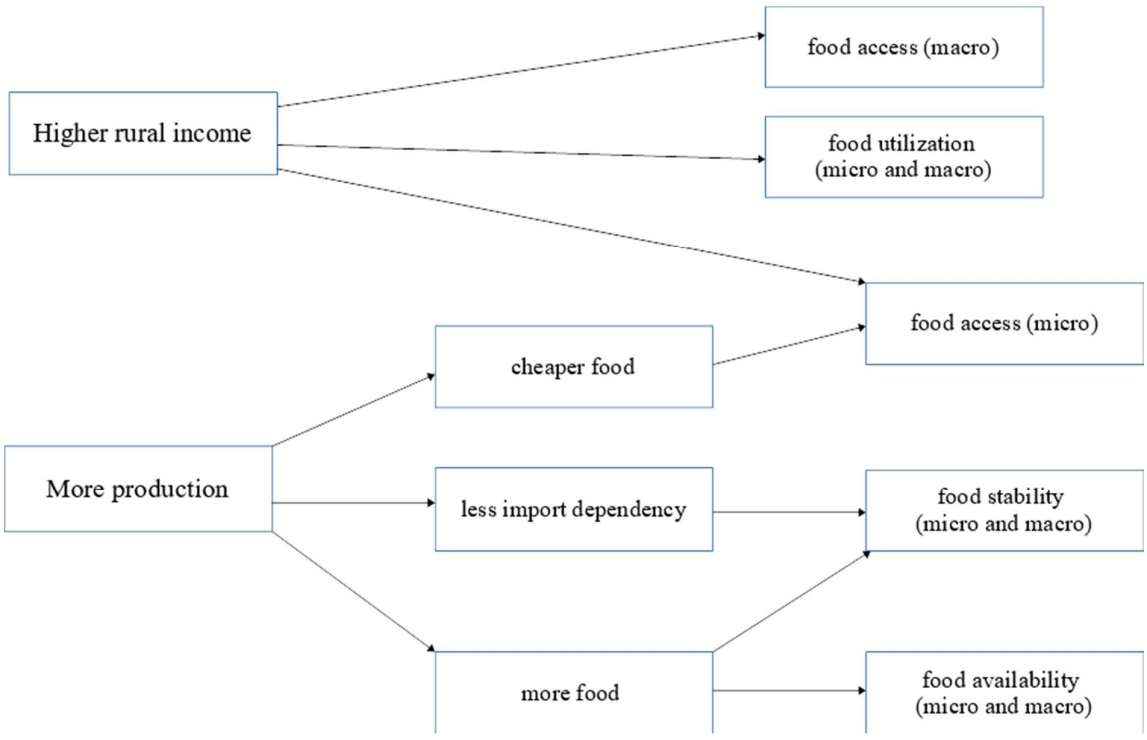

Figure 2. The connection between food sovereignty and food security in detail.

Contrarily to Figure 1, all the links present in Figure 2 seem to be quite strong.

3.2 The dependent variable

To measure the dependent variable, it must first be defined. As already stated, food security exists "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996).

There are many reasons why it is not clear which indicators work best when evaluating food security. First, food security's definition is multidimensional, being composed of economic, physical and social elements (Leroy et al., 2015). Second, data regarding the various dimensions are seldom available and not always reliable (Jones et al., 2013). Third, food security can be analyzed at various levels: macro (world, region, and nation); meso (community, province/city, district/town, village); and micro (household and individual, and individual) (Weingärtner, 2009). Depending on which level is chosen, the crucial issues change - as highlighted in Figure 3, which presents the key factors for the macro and micro level. There can't be, therefore, a single measure able to capture all aspects of food insecurity (Napoli et al., 2011).

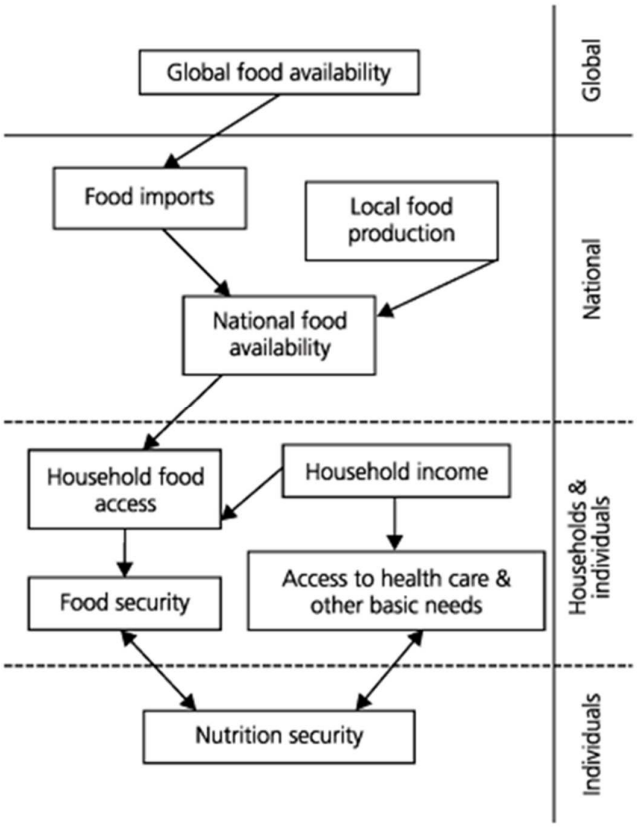

Figure 3. Conceptual Framework of Food security and Nutritional security. From: Smith et al., 2000

Moreover, from the 1996 food security's definition, four dimensions can be identified: food availability, food access, food stability, and food utilization.

The first dimension is food availability, and it relates to the availability of sufficient quantity of food, i.e. the overall ability of the agricultural system to meet food demand. According to Schmidhuber & Tubiello (2007), this element includes the agro-climatic fundamentals of pasture and crop production, and the economic and cultural factors that determine the food producers' performance in response to the market. Predictably, another factor that determines the food availability are the imports (Carletto et al., 2012). Also, to capture the "quality" dimension, dietary diversity is included.

The second dimension is food access, which relates to the access to appropriate resources and adequate foods for a nutritious diet (Schmidhuber & Tubiello, 2007). According to the FAO (2009), these resources are defined as "the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live, including traditional rights such as access to common resources".

The third dimension is food stability, which determines the adequate access to obtain products at all times, independent of sudden shocks, such as climate and economic crises or cyclical events - for example, seasonal food insecurity (Carletto et al., 2012). Often, food reserves may not be sufficient to smooth consumption (Schmidhuber & Tubiello, 2007).

The final element is food utilization - in other words, the consumption of food according to an adequate diet, reaching the physiological needs, while respecting food safety and quality of nutrition and having safe water to use for cooking and consume (FAO, 2015).

3.3 Other intervening variables

As already explained, variables different from the independent one may influence food security. More precisely, they would affect one or more dimensions of food security on various levels.

1. An increase (decrease) in the gross domestic product per capita may lead to more (less) economic access to markets, influencing food access at the micro level.

2. An increase (decrease) in the share of population under the poverty line may lead to a less (more) economic access to markets, influencing food access at the micro level.

3. Adverse climate conditions and crop/animal diseases may have a negative impact on food production, decreasing, therefore, food availability at the macro and micro level and food stability at the micro level.

4. Food aid may have an impact on food availability at the macro and micro level, food access at the micro level, and food utilization at the macro and micro level.

5. The population should be considered an intervening variable. In fact, the same amount of food availability divided a higher (lower) number of people lead to a decrease (increase) of nutritional intake, and therefore of food security (at the food availability level). In case of growth, the only way to counterbalance it is to increase the food availability, either through an increase of production or of imports.

The role of the intervening variables is also represented in the following figure.

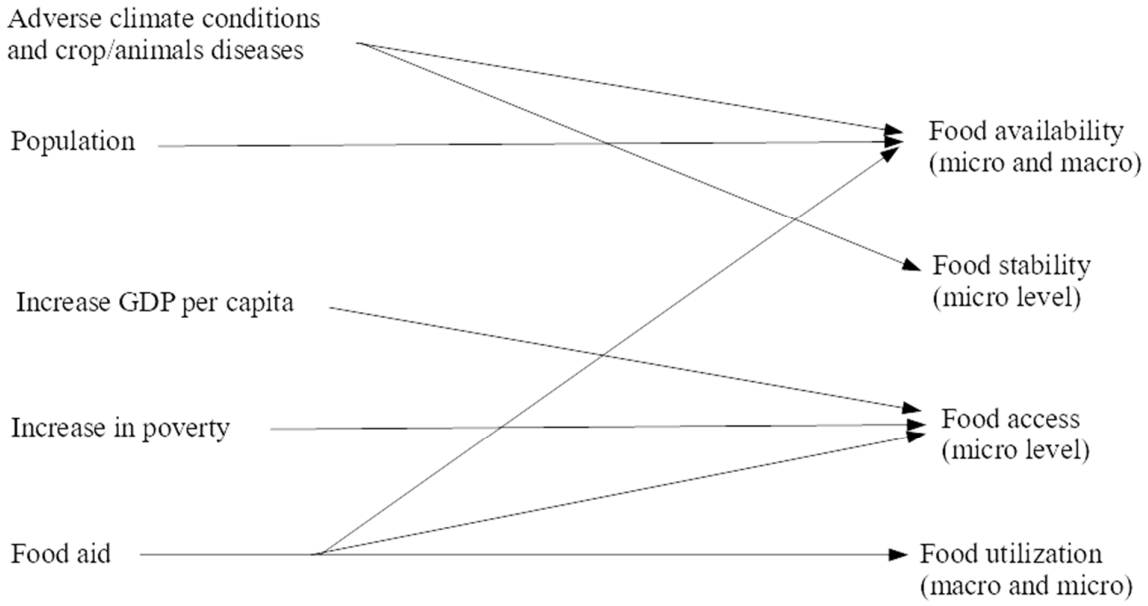

Figure 4. Possible links between intervening variables and food security.

There are two additional variables that may influence food security: cultivated land and productivity of the fields, whose effects would be mainly on food availability. However, these two variables are not taken into consideration in the analysis: in fact, variations in what they measure can be due to the food sovereignty policies.

3.4 Time frame

As said before, this paper intends to analyze the food sovereignty policies in Venezuela in the period between 1998, the year of Chavez' rise to the power, and 2007. It would be hard to evaluate the policies and measure food security in the years following 2007 for two reasons. First, because at the end of that year a global food prices crisis broke out, causing economic, social, and political unrest in both developing and developed countries, followed by a worldwide food insecurity crisis. Second, because this situation was accompanied by a financial and economic crisis, which augmented the number of people living in hunger and poverty (Mittal, 2009). Therefore, this time frame allows to study the food sovereignty policies, as it will be highlighted in chapter 5, and see the effects on food security.

3.5 Hypothesis

Having chosen and defined the variables, the following hypothesis will be tested:

Food sovereignty policies in Venezuela were able to improve food security on all its four dimensions – food availability, food access, food stability, and food utilization.

Chapter 4 – Methodology

This chapter presents the methodological approach, the research design, the operationalization, and measurements of the dependent and independent variables. Also, the data sources are presented. Finally, this paper's reliability, validity and possible limitations are discussed.

4.1 Case study type

To address the research question, a case study will be used. According to Yin (2009), a case study is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". Also, it relies on multiple data sources, converging the data in a triangulating fashion. Finally, it relies on previously developed theoretical propositions to guide data collection and analysis.

The case study type selected is the explanatory one. In fact, the author of this thesis aims to answer a question that tries to explain a presumed a causal link between a real-life intervention, which may be too complex for surveys or experiments (Baxter & Jack, 2008). Therefore, this study will rely on a theory-guided case study.

This research adopts a single-case design, which is particularly useful for cases that present significant specificities (Zainal, 2007). The design can provide a detailed analysis of this specific rare case, offering an in-depth insight and adopting a holistic approach (Yin, 2013). Also, it gives the possibility to rely on various sources and methods, which contributes to a better understanding of the phenomenon (Baxter & Jack, 2008).

Finally, a properly balanced case study, with sufficient depth and breadth, may permit extrapolation and speculations about the applicability of findings to other situations, allowing generalization to a certain extent (Baxter & Jack, 2008).

A case study research seems a suitable design for additional reasons. Yin (2009) suggests that a case study is a suitable strategy only if it meets some criteria: first, the research question is a "how" or "why" question; second, control over behavioral events is not possible; and finally, the paper focuses on contemporary events. Predictably, since this research aims to find how and to what extent did food sovereignty policies had an impact on food security; since this paper cannot – nor it would intend to – manipulate relevant behavior; and since the study focuses on (almost) contemporary set of events, this thesis can correctly use the case-study design.

4.2 Research design

The approach adopted in this paper is the theory-based impact evaluation (TBIE), which will help the author of this paper to understand the various interventions' effects, intended as well as unintended. Theory-based

impact evaluation is an approach that pays attention to theories of policy makers, programme managers or other stakeholders, i.e. hypotheses or collections of assumptions which are empirically testable and logically linked together (Khandker et al., 2009). Clearly, a qualitative approach is used to establish a counterfactual.
This approach is composed by two core features: a conceptual one, and an empirical one. Conceptually, TBIE articulates a policy or programme theory; empirically, it seeks to test the mechanisms that policy makers believe make the policy effective and compares them with research-based evidence (Rogers, 2012). In other words, theory-based evaluations aim to test theories and explain their success or failure. At the same time, theory-based approaches try to identify and assess any significant influencing factors (i.e., contextual factors) that may also play a role in the causal chain and thus affect the contribution claim (Bank, 2012).
The testing is done based on existing data, obtained from multiple sources. To do it, a contribution analysis is chosen. Contribution analysis aims to establish the contribution that a programme makes to desired outcomes. This way, many evaluations identify whether a result has been achieved and, if it was, assume the programme is responsible for it (Mayne, 2001).

According to Leeuw (2013), there are seven methodological steps that form a contribution analysis:

Step 1 – Set out the cause-effect issue to be addressed: in other words, explain why and how the theory is supposed to work.
Step 2 – Develop the "theory of change", which provides an indication of the intended results (outputs, intermediate and end outcomes).
Step 3 – Assess the resulting contribution story: critically review the theory of change, trying to find the weaknesses and underlining contested aspects. Also, consideration must be given to the influence of external factors.
Step 4 – Gather existing evidence on the theory of change, selecting data and information to provide evidence on activities implemented and observed results.
Step 5 – Re-assess the theory of change in light of the existing evidence: which links are strong, and which are weak?
Step 6 – If in step 5 weak links were found, seek out and analyze additional evidence.
Step 7 – Revise and strengthen the contribution story: the newly collected empirical evidence can be used to build a more credible theory of change.

Step 1 has been done in Chapter 2, the literature review; Step 2 has been completed in Chapter 3, the theoretical framework, as well as Step 3. Steps 4 to 7 will be done in Chapter 5 and 6, according to the procedure explained in the following section of the paper.

4.3 Operationalization

Both the dependent and independent variables used in this research require further specification and investigation. Food security and food sovereignty are not concepts that can be directly measured in numbers. In fact, they are theoretical constructs, "latent variables", and they can only be measured indirectly. Therefore, they must be replaced by concepts that can be measured in order to use comparable data. Consequently, the two concepts are supplanted by proxies and substitutes that can best represent these variables. Most proxies and substitutes are either interval variables or ratio variables. Interval variables are measurements where distance between attributes has a meaning and therefore the intervals are interpretable – for example compared or ranked. Ratio variables have the same properties of the internal variables, but also a clear definition of 0.0. Finally, a small number of variables are nominal.

4.3.1 Measurement of the dependent variable: food security

As already explained, food security's measurement is quite challenging. Many papers often use undernourishment as an indicator, or parameters such as calories available for consumption or inequality of access among the population. This paper tries to better estimate food security. The mentioned measurements, in fact, can attract criticism: calories availability is not a good indicator of, for example, nutritional development or productivity. Also, the aggregation of age and sex minimum dietary requirements may lead to an underestimation of the actual undernourishment (Headey & Ecker, 2012).

As said before, food security is a multi-dimensional and multi-level concept. Predictably, there is no "gold measure" that can be used to precisely evaluate food security. Therefore, scholars suggest focusing on the indicators related to the dimension which is intended to be analyzed (Pangaribowo et al., 2013; Smith et al., 2000). Since food sovereignty in Venezuela consists of a set of policies implemented by the government and targeted at the citizens, the food security's levels of analysis in this paper are twofold:

- the macro level, namely the national one.

- the micro level, namely the individual and household ones;

At the macro level, the regional and global levels were discarded, since they are not relevant to the topic of this paper. Besides, the meso level, composed by community, province/city, district/town, and village is not considered. Predictably, the indicators used to analyze food security at the two levels will be different; and

different may be the extension of the results of food sovereignty policies: the reforms may be successful at the micro level, but a failure at the macro level, or vice versa.
Despite the disagreement regarding the indicators, there is consensus that the previously mentioned four dimensions are key to identify which indicators should be used (Pangaribowo et al., 2013). Therefore, they are the starting point to reflect upon how to measure food security.

4.3.1.1 Food availability

4.3.1.1.1 *Macro level*

According to Pinstrup-Andersen & Watson (2011), to measure the national food availability at the macro level, food production, imports of food, and food aid must be aggregated. However, the author of this thesis believes that two modifications must be done: first, food aid should be removed from the picture, since it is considered an intervening variable in this paper; second, the exports should be subtracted from this sum. This way, we find an indicator able to measure the food availability in the state without counting a) products present in the country due to foreign aid and not as the result of the state's policies, b) aliments that will be consumed outside Venezuela. This new formula, consequently, should be able to measure total food availability at the national level.

Table 3. *Indicators for food availability, macro level*

Indicator	**Unit of measure**	**Source**
National food availability (food net production value + food Imports– food exports)	$	FAO (2017) /Author's calculation

4.3.1.1.2 *Micro level*

For the micro level, multiple indicators are used. First, the same indicator used at the macro level is now considered per capita: relying on the same formula adopted for the macro level, the results are divided by the population. Second, the presence of undernourishment is measured using the indicator "average dietary energy supply adequacy", which represents the Dietary Energy Supply (DES) as a percentage of the Average Dietary Energy Requirement (ADER). However, having enough food is a necessary but not sufficient condition. In fact, individuals need a nutritious diet that meets human needs: to obtain information regarding it, the indicators "average protein supply" and "average supply of protein of animal origin" are added. Protein, in fact, are key components of the human diet, performing a vast array of functions; and protein from animal sources are

important because – contrarily to other protein sources, such as vegetables – they tend to deliver all the amino acids needed (FAO, 2009). These last three indicators are calculated in three-year averages to reduce the impact of possible errors in estimated DES, due to the difficulties in properly accounting for stock variations in major food.

The choice of the first indicator is original; the choice of the last three indicators follows the recommendation of experts gathered in the Committee on World Food Security in 2011. All the indicators use data provided by FAO.

Table 4. *Indicators for food availability, micro level.*

Indicator	**Unit of measure**	**Source**
National food availability per capita [(Food net production value + Food Imports– food exports)/population]	$	FAO (2017) /Author's calculation
Average dietary energy supply adequacy	%	FAO (2017)
Average protein supply	gr/caput/day	FAO (2017)
Average supply of protein of animal origin	gr/caput/day	FAO (2017)

4.3.1.2 Food access

4.3.1.2.1 *Macro Level*

At the macro level, the indicators used to measure access should be chosen to highlight physical restriction to food, and they are related to the presence of road and rails in the country. However, in a case study like the one conducted in this paper, indicators that have been used by other scholars, such as "road density" or "rail line density", which measure the km of road and rails per 100 square km of land area, say little about the presence of physical restriction to food. In fact, there is no cut-off value that may help in evaluating the improvement, and different countries may have different need of road density. Such indicators may be extremely useful when comparing similar countries that present differences in the extent of the road network; but in this case study their practicality is questionable. The only indicator that may be effective to measure the physical access, "percent of paved roads over total roads", is not usable due to lack of data. As also remarked later, this is a limitation of the paper.

4.3.1.2.2 *Micro level*

The indicators were chosen to highlight the economic restriction to food, such as the lack of the means to purchase it, and the physical restrictions to food, such as excessive distance from the food supply: having economic means to buy food is only a necessary but not sufficient requirement to have food. To embrace this double aspect of food security, two indicators are chosen.

First, "domestic food price index" is used, an indicator of the price of food in a country, calculated in purchasing power parity terms relative to the prices in 1997 in Venezuela. Being an index, the results can only be compared over time – the absolute values are not insightful. The index was calculated by Gutierrez (2015) using data obtained by the Banco Central Venezolano (BCV).

Second, the indicator "% of the population with access to safe water" is selected, to see the percentage of people that can access to an adequate amount of water, which, as said before, is fundamental for cooking and essential for the diet.

The choice of the first indicator follows the recommendation of experts gathered in the Committee on World Food Security in 2011. The choice of the second indicator follows the recommendation of Napoli et al. (2011).

Table 5. *Indicators for food access, micro level*

Indicator	**Unit of measure**	**Source**
Domestic food price	Index	Gutierrez (2015), BCV
% of the population with access to safe water	%	WDI (2017)

4.3.1.3 Food stability

4.3.1.3.1 *Macro level*

Two indicators are used to understand the depth of the vulnerability dependency of a country to external inputs and the ability of the system to resist to stress. The first indicator, "cereal import dependency ratio", highlights the dependence to the most important provider of food energy worldwide. The formula to obtain it is:

$$\frac{(cereal\ imports\ -\ cereal\ exports)}{(cereal\ production\ +\ cereal\ imports\ -\ cereal\ exports)} * 100$$

The second one, "value of food imports over total merchandise exports", provides a different measure of risk: in fact, it captures the ability of a state to pay for food imports through exports of goods and services – in other words, the adequacy of foreign exchange reserves to pay for food imports.

The indicators are calculated in three-year averages to reduce the impact of possible errors in estimated trade flow, and they are computed by weighted mean, using total merchandise trade as weighting variable.
The choice of indicators follows the recommendation of experts gathered in the Committee on World Food Security in 2011.

Table 6. *Indicators for food stability, macro level.*

Indicator	**Unit of measure**	**Source**
Cereal import dependency ratio	%	FAO (2017)
Value of food imports over total merchandise exports	%	FAO (2017)

4.3.1.3.2 *Micro level*

The indicators are chosen to measure the dimension of resistance to shocks. In case of shocks, individuals or household have their incomes and purchasing power reduced, and therefore the number of poor and hungry people increases. Three indicators are used. First, "domestic food price volatility": the indicator is calculated from the monthly domestic food price level index using monthly consumer and general food price indices; month-to-month growth rates and their standard deviation are calculated, and the average of these standard deviations is then computed to obtain an annual volatility indicator. Second, "per capita food production variability", whose variability is based on the trend over the period 1985-2010, compares the standard deviations of the food production per capita from the trend over a period of 5 years, in constant 2004-2006 international dollars. Finally, "per capita food supply variability", whose variability is calculated as the standard deviation over 5 years of the deviation from the trend during the period 1985 to 2010, in terms of energy.
All the indicators, used to compare their respective variations across time, are important for food security at the micro level: high volatility can increase vulnerability to food insecurity, by increasing uncertainty and, therefore, rising prices (Mehta et al., 2014).
The choice of indicators follows the recommendation of experts gathered in the Committee on World Food Security in 2011.

Table 7. *Indicators for food stability, micro level.*

Indicator	**Unit of measure**	**Source**
Domestic food price volatility	Index	FAO (2017)
Per capita food production variability	$	FAO (2017)
Per capita food supply variability	Kcal/caput/day	FAO (2017)

4.3.1.4 Food utilization

4.3.1.4.1 *Macro and micro level*

Food utilization may be one of the most complex dimension for food security: in fact, as suggested by Gross, Schoenenberger, Pfeifer, and Preuss (2000), it is important to properly estimate undernourishment by adopting indicators that target groups of different age and sex. Therefore, some indicators are linked especially to:

- children: firstly, wasting: it indicates low weight-for height, and therefore a severe process of weight loss, which is often associated with acute starvation. Secondly, stunting, which indicates low height-for-age, and therefore undernourishment. Finally, underweight is selected to measure nutrition imbalance and malnutrition, calculated as the percentage of children whose weight-for-age is below -2 standard deviations of the WHO Child Growth Standards median;

- women: low-birthweight babies, because it indicates that the pregnant woman is severely malnourished.

Also, two more "general" indicators are chosen: "Intensity of food deprivation", to better comprehend the extent of the undernourishment, as it indicates how many calories would be needed to lift the undernourished from their status; and "prevalence of undernourishment", which expresses the probability that a randomly selected individual from the population consumes an amount of calories that is insufficient to cover her/his minimum energy requirement for an active and healthy life.

In food utilization, the micro and macro levels seem to overlap, sharing the indicators. The choice of the indicators follows the recommendation of experts gathered in the Committee on World Food Security in 2011, apart from "Intensity of food deprivation", which was suggested by Kick et al. (2011), and the low-birthweight, which was suggested by Gross, Schoenenberger, Pfeifer and Preuss (2000).

Table 8. *Indicators for food utilization, micro and macro level.*

Indicator	**Unit of measure**	**Source**
% of children under 5 years of age affected by wasting	%	WDI (2017)
% of children under 5 years of age who are stunted	%	WDI (2017)
% of children under 5 years of age who are underweight	%	WDI (2017)
Low-birthweight babies (% of births)	%	OAS (2017)
Intensity of food deprivation	Kcal/caput/day	FAO (2017)
Prevalence of Undernourishment	%	FAO (2017)

All in all, the choice of indicators should be able to guarantee the correct measurement of the food security concept, embracing its multifaceted nature. In fact, it takes into account the various dimensions and levels, while targeting groups of different age and sex. It may be objected that there is a lack of indicators able to measure the health status and consequently the nutritional status. However, this paper doesn't focus on nutrition security: it concentrates on food security.

4.3.2 The independent variables: food sovereignty

In the following chapter, many agricultural policies related to food sovereignty in Venezuela will be highlighted. However, as it will be explained, there is a debate among scholars regarding these pieces of legislation: some believe that they can be linked to food sovereignty, others not. To come to a conclusion, two steps are required. First, to identify all food-related policies implemented in Venezuela in the period of analysis. Second, to compare the reasoning behind the reforms and the initiatives pursued by the Venezuelan government with the food sovereignty's six pillars-framework and the domestic measure-framework presented at the 2007 Nyeleni Forum. This way, the connection will be underlined and it will be possible to conclude whether Venezuela has adopted a food sovereignty approach or not.

4.3.3 Measurement of the intervening variables

As said before, there are several variables that may affect one or more dimensions of food security. The indicators used to measure them will be listed.

1. Domestic product per capita: the first indicator used is "GDP per capita, PPP (constant 2011 international $)", the gross domestic product per capita based on purchasing power parity, using data in constant 2011 international dollars. As said before, an increase/decrease in GDP per capita, PPP may lead to more/less access to markets.

Table 9. *Indicator for domestic product per capita*

Indicator	**Unit of measure**	**Source**
GDP per capita, PPP	$ (constant 2011 international $)	WDI

2. Increase in poverty: the second indicator is the percentage of population living below poverty line (by national standards), to analyze poverty.

Table 10. *Indicator for poverty*

Indicator	**Unit of measure**	**Source**
% of population living below poverty line (national standard)	%	WDI

3. Adverse climate conditions and crop/animal diseases: to assess the impact of this variable, it is not possible to rely on statistical data. In fact, it is arduous to determine how, for example, the rain influenced the crop production: some millimeters of water in a specific period may improve the productivity, in other periods they may represent a danger to the plants. To check the impact on food security this paper relies on the information given by three different reports, all provided by FAO. First, for the period 1998-2004 the "Special reports" are used, which describe the food supply and agricultural situation in countries experiencing food supply difficulties. Second, for the period 2004-2007 the GIEWS (Global Information and Early Warning System), and the "Crop Prospects and Food Situation". These reports are published between four and six times a year, and they focus on developments affecting the food situation of developing countries, such as floods, cyclones, earthquakes, and droughts, and describe anomalous food supply and agricultural situation in countries.

4. Food aid: to understand what was the impact of food aid on food security, the indicator "food aid" measured in 2014 constant US dollars is used, which comprehends both official and private donors. Also, once calculated the amount of food aid received, it is important to use the literature (reports, newspapers, etc.) to understand the type of food aid: emergency food aid, typically for emergency situations such as natural disasters; program food aid, when food is transferred from the donor country to the recipient; and project food aid, used to support specific poverty reduction and disaster prevention activities. This way, it can be seen if the aid influenced food security in short or long term.

Table 11. *Indicator for food aid*

Indicator	**Unit of measure**	**Source**
Food aid (emergency food aid +program food aid+ project food aid)	$	FAO

5. Population: as said before, the number of people living in a country may affect food security. Therefore, the indicator "population of Venezuela" is used.

Table 12. *Indicator for population*

Indicator	**Unit of measure**	**Source**
Population of Venezuela	Number of people	WDI

4.3.4 Data collection

According to Yin (2009), there are six sources of evidence for case studies, namely documents, archival records, interviews, direct observation, participant-observation, and physical artifacts. As shown in the tables above, this paper relies on publicly available data, published by international institutions, such as FAO, international regional institution, such as the Organization of American States (OAS), and national public institution, such as the BCV.

4.4 Reliability, validity and possible limitations

As said before, food security is a complex concept that lacks a standard measure able to reflect all the different dimensions: therefore, ensuring validity is quite challenging. To obtain it, this study's indicators are focused on specific dimensions, including components that are relevant to the consequent level and excluding indicators that are not related to it. This paper relies on indicators that have been considered precise by the academic world - many of them are already widely used in indices or by international and national institutions. Also, for some indicators there are multiple data sources available, which can improve the paper's reliability.
The data is published annually, producing results that can be compared, increasing the reliability of the data collected. In addition, to avoid error or mechanical mistakes during data collection, every information is checked multiple times with the original source for the dependent variable. Finally, to control that the relationship is between food sovereignty policies and food security and that no other variables are involved, some intervening variables were chosen for several food security outcomes (for example, increase in the average income level of population).

This paper presents elements that may attract criticism. First, some scholars argue that researchers should collect the data according to the purpose of their dissertation's hypothesis to improve its validity (King et al., 1994). However, as highlighted by Rathke (2007) primary research is not always an alternative, especially for young researchers: the data collection can be expensive and using data only once can be an inefficient way to use it. Besides, the use of secondary analysis allows the researcher to make comparisons over time.
Second, some authors affirm that case studies can provide only little external validity (Yin, 2013). Nevertheless, as previously explained, a sufficiently depth and breadth case study can provide to some extent generalization. Also, this work could be the basis for further research, which could eventually confirm the validity of the work through a triangulation of the study, as suggested by Zainal (2007).
Finally, regarding internal validity, some academics criticize the theory-based impact evaluation due to its inferior use of statistical tools and its production of a "narrative" - in contrast to the numbers-based results of

other approaches. Still, in the opinion of the author, this does not mean that it is less scientific: in fact, the paper can still provide an insight into why things work or not.

Chapter 5 – Food sovereignty policies in Venezuela

To better comprehend the policies implemented in recent years by the socialist government, this chapter looks at the previous reforms to understand their legacy and to put the current situation into perspective. Also, the food policies promoted by the Venezuelan government will be listed and analyzed, and their connection with the food sovereignty principles will be explained, answering the sub-question 2.

5.1 The development of agricultural policies in Venezuela

At the beginning of the 20th Century, Venezuela was an extremely poor country that mainly exported agricultural products, such as coffee and cocoa (Bello et al., 2011). In the 1920s and 1930s, the country's economic focus shifted to the development of an oil industry: this made Venezuela one of the fastest growing economies in Latin America till the 1970s (Denova & Frederick, 2005). Predictably, the state sought to achieve economic development though a natural-resource-based industrialization (Di John, 2014). According to Wilpert (2005), the new role of oil production and refinery led to the "Dutch disease": the population's purchasing power increased, fueling inflation and, consequently, the imported products gained competitiveness over the domestic goods – such as food. Therefore, the domestic agricultural sector severely suffered, and the food exports began to fade. Still, the food and beverage industry was able to survive, despite being inferior in dimension compared to the precedent period (Astorga, 2000). In the following years, the agricultural sector was often neglected in the state's development plans (Lavelle, 2013).

The period between the postwar period and the rise of Chavez can be divided into three phases.
In the first phase, in the 1950s, many governments tried to tackle the chronic problem of food deficit across the country, introducing new policies that aimed to reform and modernize the agricultural sector. In this period, and till the early 1960s, the state played a key role in the planning of the agricultural sector and the promotion of a capital-based approach to the agricultural sector. The state pushed for the mechanization of the Venezuelan agricultural sector, through the importation of agricultural machines. However, according to Rodriguez (2011), the results were unsatisfying: mechanization meant an intensive use of the fields, which prevented the creation of new jobs. Also, the state was not always able to guarantee its intervention, since its programs were extremely costly for the state's budget. Finally, the government avoided policies that could have potentially harmed the interests of the "latifundistas", the big landowners, who still had little incentives to increase their production.

In the second phase, in the late 1960s and 1970s, Venezuela promoted land redistribution, which aimed to eliminate the "latifundista" system once and for all. Consequently, the state redistributed all the available land to the maximum amount of people. This decision was not driven by economic reasons, but by political

considerations. In fact, the agrarian reform allowed the governing political party to increase their number of supporters and obtain the votes of the people who received the land (Delahaye, 2001). Also, the government tried to stop indirect uses of the fields, such as sharecropping – when a landowner allows a tenant to use the land in return for a share of the crops produced. With this practice, tenants didn't have any incentive to invest and increase the production. However, according to Rodriguez (2011), these programs failed to solve the problem. In fact, the reform produced an excessive fragmentation of the fields: the food produced in these parcels didn't even meet the needs of the farmer's family. Also, the state provided credit to new food producers, regardless of how much they were producing, reducing the incentives to increase production. Besides, many farmers had to abandon the fields, since they could not compete with the highly mechanized farms. A final attempt, only partially successful, consisted in merging the smaller parcels into bigger farms revolving around the concept of "collective organization" - a model that is still relevant in today's Venezuela.

In the third phase, Venezuela decided to rely on imports, after having realized that the country wasn't able to significantly increase the production anymore. Also, the country started to adjust its macroeconomic structure and its agricultural sector, in order to open the country to the international market, implementing the polices suggested by the International Monetary Fund. However, many developed countries, such as the United States and the European Union, had succeeded in maintaining protectionist measures regarding the agricultural sector in the GATT (Gutierrez, 1995).
According to Espinoza (2009), the neoliberal approach had a significant impact on Venezuela's food system. The state completely ceased to promote agricultural growth, relying on the law of market; but the effects were disastrous, and the already fragile agricultural sector suffered extremely by this situation. The food-processing firms became extremely dependent on the price set by the international market. To complement that, in 1975 the "Corporacion de Mercadeo Agricola", was created to purchase food from abroad. The food imported also included basic food, such as milk or maize. Also, many farmers abandoned the fields, which resulted in a decrease of food production. Finally, the large retail sector – now controlled by international companies – became able to control, directly or indirectly, the agricultural system, which largely depended on what they sold on the national market.

To conclude, there is a strong connection between the features of the dominant food security discourse and the policies adopted in Venezuela, as highlighted in Table 13. Therefore, the adoption of the food sovereignty approach represents a dramatic change of course for Venezuela, which since the rise of Chavez has embraced a discourse completely different to the dominant one – as it will be explained in the following paragraphs.

Table 13. *Dominant food security discourses and Venezuelan food policies*

Period	**Features of the dominant food security discourse**	**Features of Venezuela's policies**
1950s, 1960s	Capital-based approach	Modernization of the agricultural sector
1970s	Government as key actor in land reforms, new technologies, increase of production	State-led intervention, credit to farmers, mechanization
1980s, 1990s	Neoliberal approach, market solutions	Opening to the international market, more imports, less state intervention

5.2 The adoption of a food sovereignty-oriented program

With the election of Chavez in 1998, the government adopted a new approach towards the agricultural sector. According to Gutierrez (2015), the main objectives of the state at the time can be summarized in five points. First, the government aimed to achieve food security and food sovereignty, promoting rural development and increasing the internal production. Second, it intended to eliminate the "latifundista" system, which, according to the government, was still present. Third, it focused on changing the structure of the agricultural sector, promoting the creation of cooperatives – but at the same preserving the private property. Fourth, it committed to promote the adoption of modern technologies through credit, marketing, and technical support to the food producers. Finally, the government aimed to improve the infrastructure in the rural area.

To do so, Venezuela has introduced a considerable number of pieces of legislation. The period between the election of Chavez and the outbreak of the 2007-2008 food crisis can be divided, according to the author of this paper, in two phases. First, the period between 1998 and 2003, characterized by many social problems, political divide, and oil strikes. Second, the stage between 2003-2007, marked by a more stable government, better able to control the oil industry – a key source of revenue for Venezuela, in a time of rising oil prices. Also, the government increased its reliance on "missions", social programs that focused on social justice, welfare, education, and poverty.

5.2.1 Stage 1: 1998-2003

In the first phase of the reforms, the socialist government introduced a new constitution, several new laws, and two "missions" related to food.

5.2.1.1 The Constitution

The Constitution of the Bolivarian Republic of Venezuela was the first piece of legislation that had a significant impact on the agricultural sector, and it also defined food sovereignty as an objective of the newly-elected socialist government. The term “food sovereignty” isn’t directly used in the text; however, as also highlighted by Fuentes (2013) and Schiavoni (2015), many articles guarantee what in essence is food sovereignty.

The constitution dedicates many articles to the agricultural sector and to Venezuela's national production. For example, article 305 focuses on the importance of sustainable agriculture and the role of the state in its development. Besides, it underlines that it is the state's responsibility to provide sufficient and available food to the population – an idea strongly connected to the concept of food security. Also, the constitution suggests some interventions to achieve food security, such as technological and financial support. Moreover, food is seen not simply from an economic point of view or as a commodity, but as a product with a significant role in the social development of the nation. Article 306 highlights the importance of the inclusion of the rural population in the decision-making progress, and the relevance of the construction of infrastructure to support it through the development of agricultural activity. Article 307 reflects on the government's position against the large landowners. Article 308 states that the state should support small and medium-scale producers, and promote the creation of cooperatives and collectives, stressing the importance of the popular initiative. Finally, Article 309 affirms that traditional production techniques should be protected and the state is in charge to help those who preserve them.

According to Wilpert (2005), the 1999 Constitution was not simply a legal framework, but also a political program. For example, in 2002, the Constitution led to the introduction of the “Consejos Local de Planificacion Publica (Local Council for the Public Planning), in order increase the popular participation and empower the various Venezuelan communities across the country, formed at the municipal level.

All in all, it seems that both the concepts of food sovereignty and food security are present, and many articles are linked to the food sovereignty pillars.

5.2.1.2 The laws

In 1999, the Government decided to set the minimum prices of the producers for many essential food products: sugar, coffee, maize, and milk. However, other basic products, such as fruits and vegetables, weren't included in the regulation. In 2003, the number of goods with a minimum price increased.
In 2001 the “Ley de Tierras y Desarollo Agrario" (LTDA, the Land and Agricultural Development Law) aimed to tackle the problem of underproduction and promote land redistribution. As written above, this kind of

measures were not new to Venezuela, since a similar reform had tried to tackle the “latifundistas” issue in the 1960s.
According to the government, the benefits of this reform were several. First, it could lead to an improvement of the conditions in the rural areas, reducing inequalities. Second, it could protect the cultural and biological diversity through the development of small-scale farms. Finally, it could increase food sovereignty. To do so, several new institutions were created.

The INTI (“Instituto Nacional de Tierras”, the Land National Institute) was created in 2001 to determine when and how to redistribute the land. The Chapter Five of the LTDA gave to INTI the right to expropriate the land from “latifundistas”. Consequently, only fields bigger than 100 hectares were considered expropriable – if the quality of the soil was considered excellent. If the fields’ quality was considered decent, Venezuela could expropriate up to 5000 hectares.
According to the law, the state could recover the land from “latifundistas” and proceed to redistribute the land in two cases. First, when the farmer wasn't able to prove that he/she was legally entitled to the land. Second, when the state decided that a land doesn't respect its "social function" (for example, not being use for food), even if the owner was able provide a legal title to the land. Also, as highlighted by Lavelle (2013), Venezuela was able to expropriate productive and legally owned land if the seizure was considered necessary for the implementation of social projects. Therefore, theoretically, the state was allowed to seize any estate, regardless of the size or level of productivity.
The seized land was then redistributed to farmers who had provided formal requests for parcels, as explained in Chapter Four of the LTDA. After having received the land, the farmers had to make the fields productive for at least three years. At the end of the period, the INTI had to check the state of the property and, if the fields’ conditions were satisfactory, it could eventually rule for the definitive assignment of the land to the farmer. This land could be inherited by the farmer’s family, but not sold on the private market, since ultimately it was still property of the state.

As written above, the 1960 land redistribution failed, with many new farmers abandoning their own fields. To avoid that, this time the Venezuelan government decided to provide infrastructural, marketing, legal, technical and credit support, introducing four institutions in 2001.
First, FONDAFA (“Fondo de Desarrollo Agropecuario, Pesquero, Forestal y Afines”, The Agriculture, Fishing, Forest, and Related Products Fund) was introduced, a credit fund meant to support the Venezuelan small and medium-scale food producers and increment the agricultural development, increasing both food security and food sovereignty. The fund was also supposed to financially help the construction of storage and distribution. To improve its effectiveness, since 2002 FONDAFA relied on the feedback received by the local councils.

Second, the INCES ("Instituto Nacional de Capacitación y Educación Socialista", the National Institute of Socialist Formation and Education), was created to provide technical and education formation to the beneficiaries of the FONDAFA credit.
Third, the INDER ("Instituto Nacional de Desarrollo Rural", the National Institute of Rural Development) was introduced to promote rural development through the creation of infrastructures, the overseeing of maintenance, and the provision of technical support to the farmers.
Finally, the CVA ("Corporacion Venezolana Agraria", the Venezuela Agricultural Corporation) was created to promote entrepreneurship among farmers through courses and seminars.

The government also formulated a medium-term strategy with the "Plan de Desarollo Economico y Social de la Nacion 2001-2007" (National economic and social development plan). The program aimed to completely reform several aspects of the economy, social structure, politics, and international cooperation. This program aimed to replace the neoliberal approach in Venezuela with a socialist one. Regarding the agricultural sector, the state focused on increasing mainly food security: fewer paragraphs were dedicated to food sovereignty, despite being present. To do so, the government aimed to implement several reforms.
First, the redistribution of power from the urban to the rural areas, now with more independence from the central government thanks to reformed "Consejos comunales" (Communal Councils). Second, a reorganization of the food market, aiming to replace alleged oligarchies with a consumer-friendly system. Third, the creation of infrastructures and promote new technologies. Fourth, the support to small and medium scale farms the creation of cooperatives for the agricultural production, and the increase in food production. Finally, an improvement of the public sector's financial condition.

In 2002, the "Ley de Credito para el Sector Agricola" (Agricultural Sector Credit Law) was introduced. Its objectives were to regulate the financing, establishing the interest rates that commercial banks had to set for agricultural credit, and setting the various procedures to obtain credit. In the same year the "Ley de Mercadeo Agricola" (the Agricultural Market Law) re-stated the state's goal of food security for everyone, strengthening the internal production and promoting the rural development. This piece of legislation also underlined the key role of food reserves, built up to guarantee food security and sovereignty.

5.2.1.3 The missions

To increase food security and food sovereignty, the government introduced two missions, social programs that focused on social justice, welfare, education, and poverty, as explained before.
The "Plan Bolivar 2000", which lasted from 1999 to 2003, was the first mission launched by the new socialist government. Chavez deployed the army to distribute food and provide medical support in the poor areas of the country, an attempt to achieve food security. According to Henriquez and Clemenares (2003), it was the first

time in Venezuela that such a public institution was used to fight social problems. Besides, in 2001 the government launched the “Mission Zamora”, which had as main goal the development of the rural areas in order to achieve food security, seen as a strategic objective for the country, through the redistribution of the land. To do so, the government also created the “Zamoranos Fund”, which aimed to create cooperatives and link them to the local communities. These “mission” and funds, and those that followed, were mainly financed with the oil revenues, as also state before.

5.2.2 Stage 2: 2003-2007

In 2003, the government decided to replace the Plan Bolivar 2000 with several missions.
The first to be developed was the Mercal mission, which established a state-owned supermarket chain with basic commodities. The prices of the products were, according to the Venezuelan government, 45% lower than the products purchased in other supermarkets. The Mercal mission’s objectives were various. First, it aimed to improve the availability of the products in areas not covered by other distributors, with the chain “Mercalito”. Second, it tried to provide inexpensive, decent quality products for everyone, improving the dietary intake. Finally, the Mercal mission aimed to support small food producers and incentive the consumption of local products, providing spaces to local farmers to sell their fruits and vegetables.
The previously mentioned FONDAFA was now directly linked to Mercal: a third institution, the Corporacion de Abastecimiento y Servicios Agrícolas (CASA) was in charge to obtain the food produced with the FONDAFA loans and supply it to the Mercal and Mercalito supermarkets.
All in all, it seems that the first two points highlight the state’s intentions to provide food security, while the latter contributes to an increase in food sovereignty. Predictably, the mission was highly dependent on government funding.

Also, the government set the “Precios máximos de venta al público”, the maximum prices possible for several products. According to the government, the measure was introduced to avoid excessively high prices in periods characterized by high demand.

In 2004, the government decided to regulate the testing of genetically modified crops with the “Ley de Semillas y Material para la Reprodution Animal e Insumos biologicos” (the Seeds and Material for the Animal Reproduction and Biological Inputs Law), while allowing a limited use of GMOs. However, in the same year, Chavez decided to interrupt all the tests, and canceled a contract with Monsanto, a biotech company. He stated that “the people of the United States, of Latin America and the world, should follow the example of Venezuela and be free of transgenics" (Fisher-Hoffman, 2014). Despite that, no formal ban was introduced till 2014. According to Katirae (2015), no genetically modified seeds were implanted since 2004.

In 2005, the government decided to directly tackle the problem of hunger and undernourishment with the creation of FUNDAPROAL ("Fundación Programa de Alimentos Estratégicos", the Strategic Food Foundation). The institution aimed to help the poor population with free food for a limited period. The diet was conceived to be highly nutritive and complete.

To conclude, it seems that the initiatives introduced by the government were numerous. At the same time, it looks like that sometimes the various programs overlapped, creating a high degree of fragmentation. For example, in the case of the provision of technical support and education for the farmers, INCES and INDER played a similar role, which may have led to a lack of efficiency.
Tables 14 and 15 provide a recap of the pieces of legislation introduced.

Table 14. *Summary of the legislation introduce in Venezuela during phase 1*

Year(s)	**Name of the legislation/institution/mission**	**Content of the policy**
1999	Constitution	Fundamental principles
1999	Precios mínimos al nivel del productor	Minimum prices for food products for the producers
2000	Plan de Desarollo Economico y Social de la Nacion 2001-2007	Medium-term economic, social, and political plan
1999-2003	Plan Bolivar 2000	Distribute food/medicines in the impoverished areas
2001	Ley de Tierras y Desarollo Agrario	Land redistribution, infrastructural, technical, legal, and marketing support to farmers; creation of new institutions
2002	Consejos Local de Planificacion Publica	Local councils
2002	Ley de Credito para el Sector Agricola	Regulate financing to the agricultural sector
2002	Ley de Mercadeo Agricola	Strengthen agricultural production, rural development
2002	Mission Zamora & Fundo Zamorano	Rural development, creation of cooperatives

Table 15. *Summary of the legislation introduce in Venezuela during phase 2*

Year(s)	**Name of the legislation/institution/mission**	**Content of the policy**
2003	Precios máximos de venta al público	Maximum price of products for the consumers
2003	Mercal mission	Establish a state-owned supermarket chain
2003	Corporacion de Abastecimiento y Servicios Agrícolas (CASA)	Connect domestic food producers and the state-owned supermakets
2004	Ley de Semillas y Material para la Reprodution Animal e Insumos biologicos	regulate the testing of genetically modified crops
2005	FUNDAPROAL	Free food for the poor

5.2.3 Venezuela's expenditure on agriculture and its trade policy

With the help of the new pieces of legislation dedicated to agriculture, the Venezuelan government strongly focused on the improvement of the agricultural sector in Venezuela. In fact, it significantly supported subsidies to the farmers. As highlighted by Figure 5, the commitment in terms of money, despite wavering, has increased from 1998 to 2007.

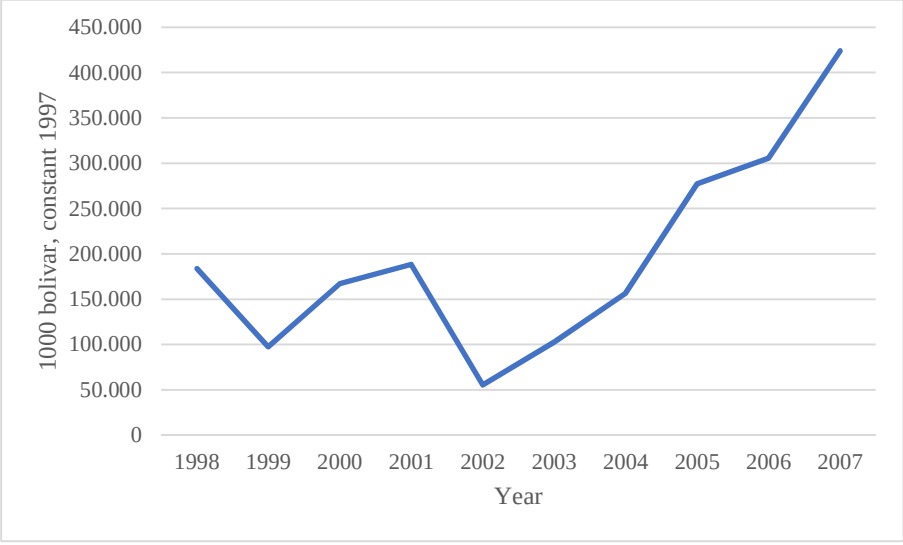

Figure 5. Agricultural expenditure from the Venezuelan government. Source: Gutierrez, 2015, data from the Ministry of Finance.

Also, to help the food sector, the government changed its trade policy, promoting import-substitution development, stiff tariffs and quotas (Faria, 2008). However, some scholars underline that Chavez had quite a nuanced position: in fact, these same tariffs and quotas were not extremely rigid because the government often relied on imports to fight inflation (Corrales et al., 2011). Chavez' idea of endogenous development was, therefore, quite different from the typical import-substitution industrialization.

5.3 The food sovereignty elements and the Venezuelan policies

As said before, the objectives of the Venezuelan government, when reforming the agricultural system in the period analyzed in this paper, are subject to debate. In fact, some scholars believe that the state, despite what written in the constitution, initially tried to achieve food security, and only in 2008 it changed its focus to food sovereignty (Aniyar, 2013; Lavelle, 2016). Vice versa, other authors, such as Enriquez and Newman (2016), believe the opposite: that initially Venezuela focused on food sovereignty, only to change its focus to food security in 2010. In this section of the paper the various connection between the agro-food policies implemented and food sovereignty's characteristics will be highlighted, in order to see which point of view may be considered correct.

As highlighted by Schiavoni & Camacaro (2009), Venezuela provides fertile ground for food sovereignty policies. First, "Bolivarianism" envisions a state free from corporate control, unfair trade and neoliberal policies, similarly to the food sovereignty's position. Second, the country under Chavez has embraced what is commonly known as the "socialism of the twenty-first century", which involves the participation of all the various strata of the society and it focuses on equality and shared resources, similarly to the cooperatives that are often promoted by food sovereignty proponents. Third, Venezuela has historically been particularly careful in protecting the indigenous culture, knowledge, and experience: similarly, food sovereignty promotes the protection of native seeds, and farming and culinary techniques. Finally, Venezuela has been associated with a high degree of participatory democracy: citizens participate in their local communities and monitor the economic and social situation: in other words, they do something similar to what food sovereignty aims to achieve with the "local empowerment".
All in all, it seems that food sovereignty-oriented policies would be compatible with the social and political environment in Venezuela. To conclude, this paper will compare with table 16 and 17 the principles contained in the 2007 Nyeleni definition of food sovereignty and the domestic measures suggested in 2005 Nyeleni forum the with the reforms and initiatives pursued by the government.

Table 16. *Food sovereignty pillars and Venezuela's reforms*

Food sovereignty pillar	**Key elements of the pillar**	**Venezuela's measures**	**Legal basis of the inteventions**
Food for people	Sufficient, healthy and culturally appropriate food for all individuals	Food security as a state's responsibility and as a key goal; free distribution of food products	Constitution (1999); Plan Bolivar 2000 (1999); Ley de Mercadeo Agricola (2002); FUNDAPROAL (2005)
Support sustainable livelihoods	Importance of small-scale farmers	Land redistribution; support of small and medium-scale producers; rural development	Constitution (1999); Ley de Tierras y Desarollo Agrario (2001); Mision Zamora (2001)
Localised food system	Prefer local food	Creation of a platform where Venezuelan food producers can sell.	Mercal mission (2003); CASA (2003)
Local control	Local control over production and resources	Local councils, bottom-up approach	Constitution (1999); Consejos Local de Planificacion Publica (1999); Fundos Zamoranos (2001)
Preserve knowledge	Traditional agricultural techniques, rejection of genetic engineering	Protection of traditional production techniques	Constitution (1999); No formal ban for GMOs, but cancellation of a Monsanto contract in 2004, and no genetically modified crops after that year
Work with nature	Preserve the ecosystem	Environmental rights enshrined in the constitution	Environmental rights enshrined in the constitution

Table 17. *Food sovereignty domestic measures and Venezuela's reforms:*

Measure suggested by FS	**Measure adopted in Venezuela**	**Legal basis of the interventions**
Price Support and stabilization	Set of minimum prices for products	In 1999, the Government decided to set the minimum prices for many key food products; in 2003 new products were added
Protectionist measures	Socialist vision of economy/ free trade as instrument of the imperialist powers	No membership in MERCOSUR until 2012, stress of the concept of sovereignty in the Plan de Desarollo Economico y Social de la Nacion 2001-2007 (2000)
Broadest participation of smallholders and poor peasants	Creation of the communal councils	Consejos Local de Planificacion Publica (2002)
Agrarian reforms to distribute land to men and women	Land redistribution	Ley de Tierras y Desarollo Agrario (2001)

As expected, Venezuela's policies in the period analyzed seem to share many principles with the food sovereignty movement. In fact, all the elements highlighted in the pillars of the 2007 Nyeleni Declaration are present, in one way or another, in the Venezuelan legislation. Similarly, the domestic measures suggested in 2005 by the food sovereignty movement were adopted in Venezuela.

5.4 Conclusions

After having listed the reforms previous to Chavez, this chapter has highlighted the food reforms introduced under the socialist government.

All in all, there is a double connection between food sovereignty and the Venezuelan policies. In fact, on the one hand it seems that all the measures that were suggested by the FSM were indeed implemented by Venezuela. On the other hand, all the food-related policies introduced by the Bolivarian Republic in this period can be connected to food sovereignty. The only remark that could be done is that the government had a nuanced position regarding the protectionist measures: as explained above, quotas and tariffs were indeed present and stiff; but also, not always rigid.

Chapter 6 – Food security analysis

This chapter presents and discusses the findings of the study, analyzing the state of food security in Venezuela, and therefore it answers to the sub-question 3.

6.1 Food security outcomes

6.1.1 Food availability

6.1.1.1 Macro level

As previously said, to measure the food availability at the macro level the formula used is:

$$total\ food\ availability = food\ net\ production + food\ imports - food\ exports$$

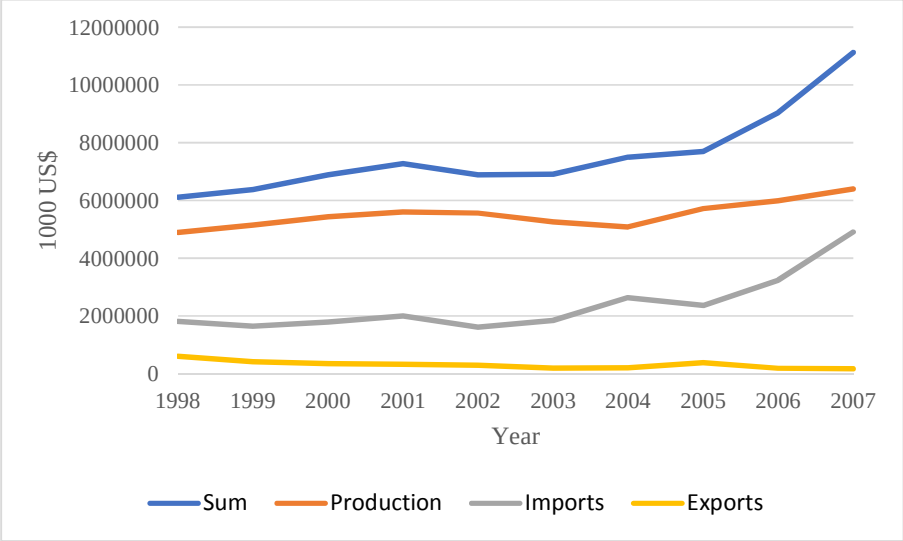

Figure 6. Food availability, macro level. *Source:* FAO (2017); author's calculation.

Figure 6 depicts an interesting situation. First, food availability has significantly risen from 1998 to 2007, and especially after 2005: the value of food products in the country almost doubled. Second, there is hardly an increase in production, and none until 2004. Third, imports have played a key role in the improvement of food availability: in fact, their value has more than doubled, with a dramatic rise after 2005, and their share in the total sum has raised from around 33% in 1998 to almost 50% in 2007. Interestingly, in the food sector exports

don't seem to play a fundamental role in Venezuela. Besides, their value has steadily decreased under Chavez' government.

6.1.1.2 Micro level

For food availability at the micro level, four indicators are used. The first indicator chosen is "Total food availability per capita". As said before, it is calculated as:

$$total\ food\ availability\ per\ capita = \frac{food\ net\ production\ value\ +\ food\ Imports - food\ exports}{population}$$

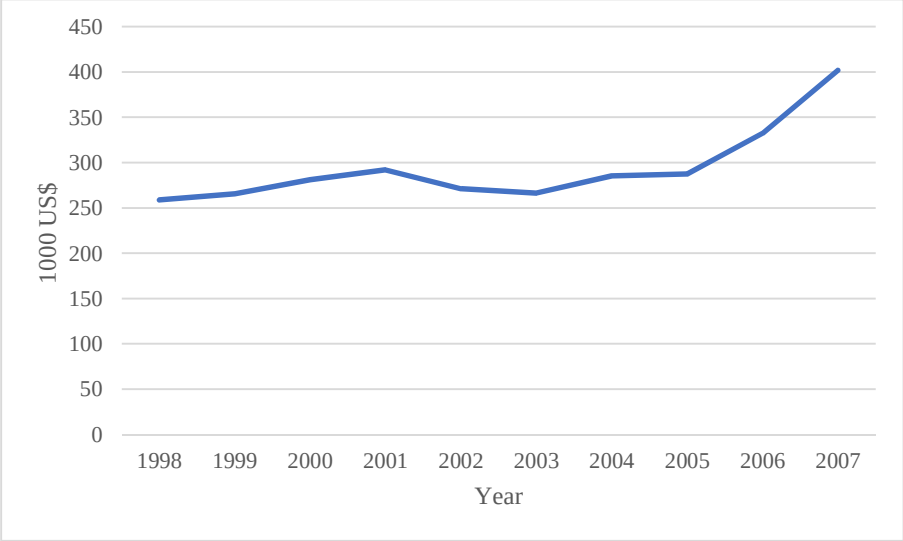

Figure 7. Total food availability per capita. *Source:* FAO (2017); author's calculation.

Predictably, the curve presented in Figure 7 is quite similar to the one shown at the macro level. After a few years of relative stability, the total food availability per capita started to dramatically rise especially after 2005.

The second indicator is “average dietary energy supply adequacy”.

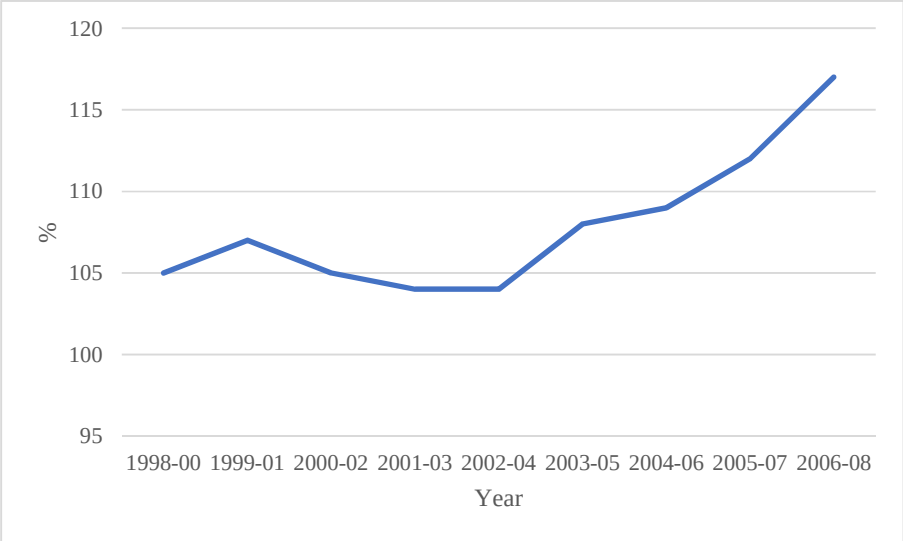

Figure 8. Average dietary energy supply adequacy. *Source:* FAO (2017); author’s calculation.

The figure underlines that at the at the time of Chavez’ rise to the power, in 1998, Venezuelan citizens already consumed more than the Average Dietary Energy Requirement – the percentage reached, in fact, was already above 100%. The other side of the coin is that at the beginning of the socialist government and for several years, the Dietary Energy Supply did not increase. Interestingly, the growth was more evident in the second phase of Chavez’ government.

The last two indicators analyzed are “Average protein supply” and “Average supply of proteins of animal origin”.

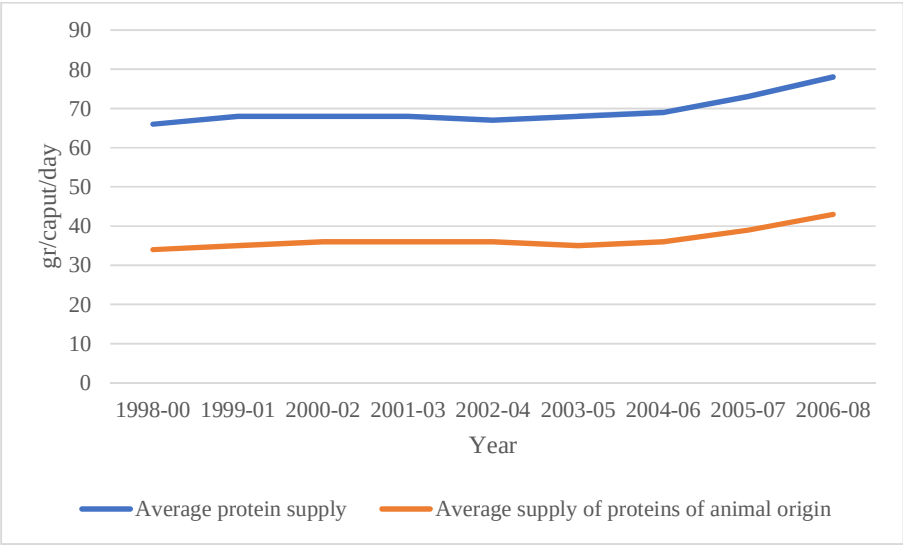

Figure 9. Average protein and proteins of animal origin supply. *Source:* FAO (2017); author’s calculation.

The two indicators underline an improvement in Venezuelan people's diet. Keeping in mind that the minimum protein requirement intake for men is 56g/day and for women 46g/day (WHO, 2007), Figure 9 shows an increase in the average protein supply and in the average supply of proteins of animal origins. Similar to what was shown in the previous figure, the improvement was significantly more pronounced in the second phase of Chavez' government.

All in all, at the micro level, food availability has increased in Venezuela at all levels and according to every indicator. Moreover, the increase was quite significant.

6.1.2 Food access

6.1.2.1 Macro level

As explained in the fourth chapter, it was not possible to include indicators for this dimension at this level.

6.1.2.2 Micro Level

The two indicators chosen for food access at the micro level is "Domestic food price index" and "% of population with access to safe water".

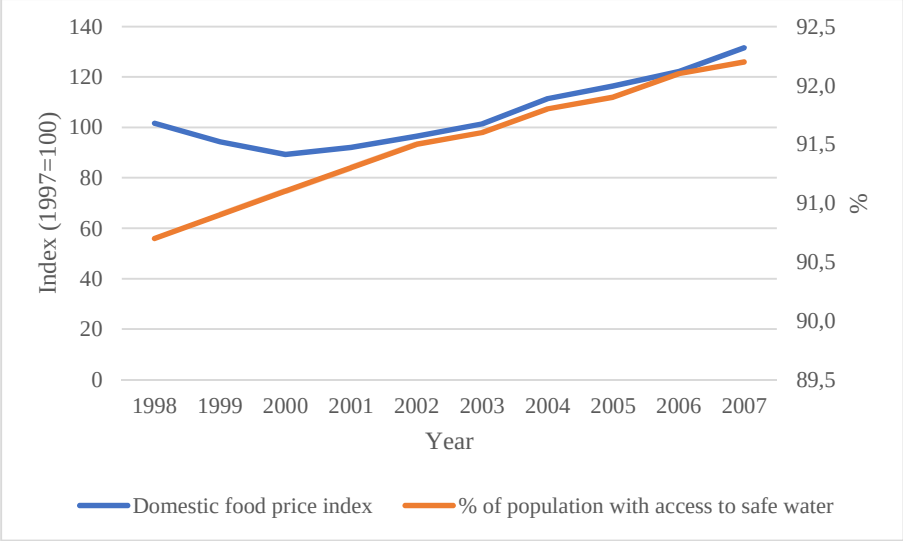

Figure 10. Food access at the micro level. *Source:* for the index, Gutierrez (2015); for the access to safe water, WDI (2017), author's calculation.

Figure 10 depicts an interesting picture: in fact, the price of food has significantly decreased in the first two years of Chavez' government, but since then it has significantly risen until 2007, showing, apparently, a positive trend. Considering the number of initiatives promoted by the government to make food accessible to anyone (for example, with the Mercal mission, as seen in the previous chapter), it is quite a surprising result. Also, Figure 10 shows that an increasing number of people in Venezuela have had access to safe water sources. The improvement consists approximately of 1.5 percentage point: this advancement is not monumental but, nevertheless, the trend seems positive.

All in all, the two indicators depict an interesting picture: an improvement of access at the physical level, but more obstacles for the economic access.

6.1.3 Food stability

6.1.3.1 Macro level

The two indicators used are "cereal import dependency ratio" and "value of food imports over total merchandise exports". The first one tells how much of the available domestic food supply of cereals, a key component of the human's diet, has been imported and how much is produced. The second one captures the ability of a state to pay for food imports through exports of goods and services.

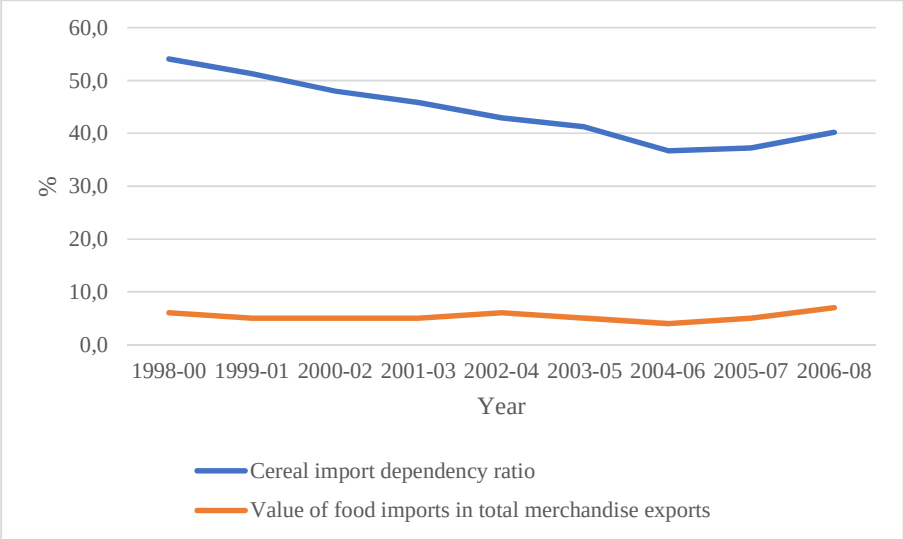

Figure 11. Food stability at the macro level. *Source:* FAO (2017); author's calculation.

The results are quite impressive: looking at the cereal import dependency ratio, not only Venezuela is a net importer, but also by a great margin. Venezuela seems extremely vulnerable: progress has been made – at the time of Chavez' rise the situation was worse – but the Bolivarian Republic is still in dire straits, having failed to replace cereal imports with domestic production. The bright side is that the trend is negative, but there is still a long way to go. Being completely dependent on foreign countries, in case of stress Venezuela would find itself in an unpleasant position.
However, when looking at the value of food imports over total merchandise exports, a completely different picture appears. In fact, Venezuela's foreign exchange income seems to be perfectly able to pay for food import, and therefore the vulnerability appears to be quite low. The values aren't high, and the road to 100% of coverage is still long. On the other hand, the percentage has remained stable for the period considered: therefore, even though there have been some variations, it may not be possible to find a link between Chavez' policies and these results.

All in all, the two indicators present a nuanced picture: a country with abundant foreign exchange income; nonetheless, completely dependent on cereal imports.

6.1.3.2 Micro Level

The first indicator used to measure food stability at the micro level is domestic food price volatility. Being an index, the results can only be compared over time – the absolute values are not insightful. Unfortunately, for the years 1998 and 1999 no data is available.

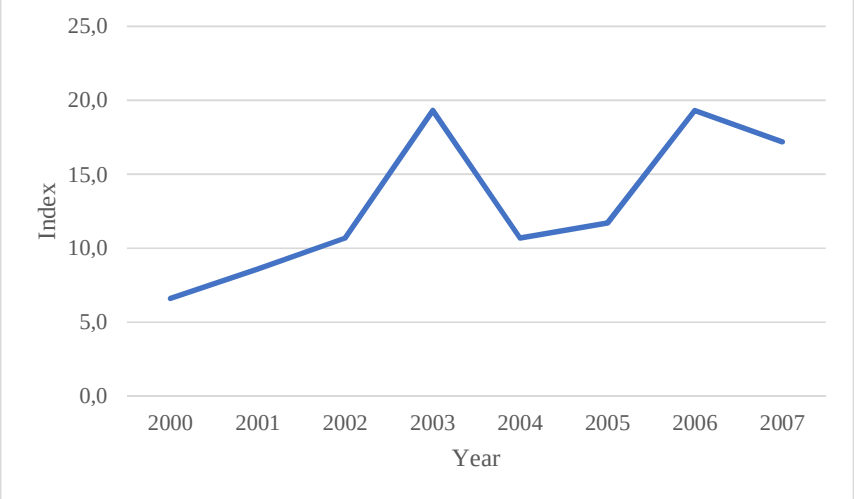

Figure 12. Domestic food price volatility. *Source:* FAO (2017); author's calculation.

Figure 12 shows an increasing level of food price volatility, from 6.6 to 17.2, almost three times as much. This underlines that Venezuela is far more vulnerable to shocks now than it was at the beginning of the century. Moreover, the trendline appears to be positive, which means that in the future the Bolivarian Republic could be even more in dire straits.

The second and third indicators considered are “Per capita food production variability” and “Per capita food supply variability”.

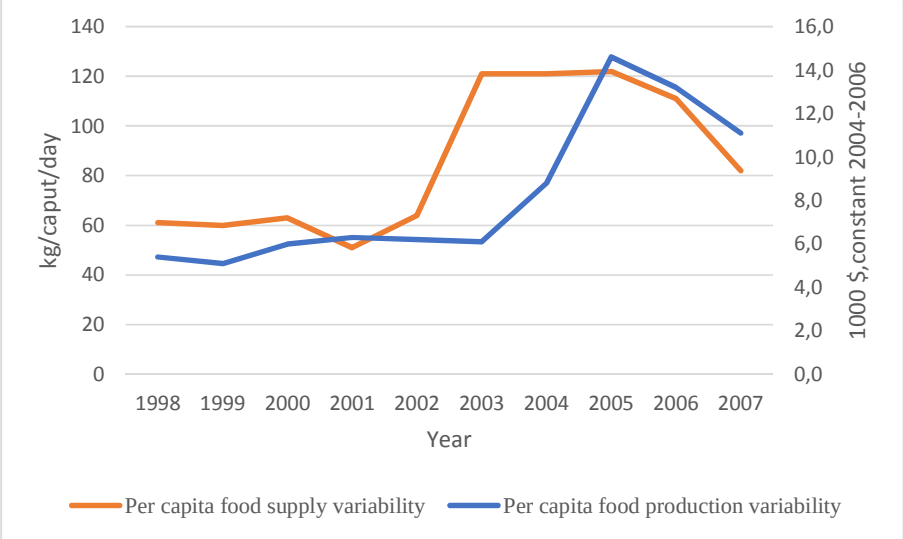

Figure 13. Per capita food production and supply variability. *Source:* FAO (2017); author’s calculation.

According to Figure 13, between 1998 and 2007 the per capita food production variability has more than doubled. Similarly to “domestic food price volatility”, this underlines that Venezuela had become more vulnerable to shocks. Regarding the food supply variability, the picture painted by is relatively similar to the ones of the two previous indicators. In fact, variability in the period between 1999 and 2003 has almost doubled. However, in the following two years it has remained stable, and it has started to decrease since 2006. Moreover, keeping in mind that the Average Dietary Energy Requirement, a reference for adequate nutrition, measured in kcals/caput/day is around 2400 (FAO, 2008), the number of kcals subject to variability seems pretty low – always below the 5% of the ADER. Therefore, in this case the situation seems less grim compared to the one delineated by the previous indicators.

All in all, the indicators at the micro level present a country quite vulnerable to shocks in 2007, far more than it used to be in 1998.

6.1.4 Food utilization

6.1.4.1 Macro and micro level

As said before, in food utilization, the macro and micro level seem to overlap, and therefore they share the indicators.

Three indicators are used to analyze food utilization from the children's point of view.

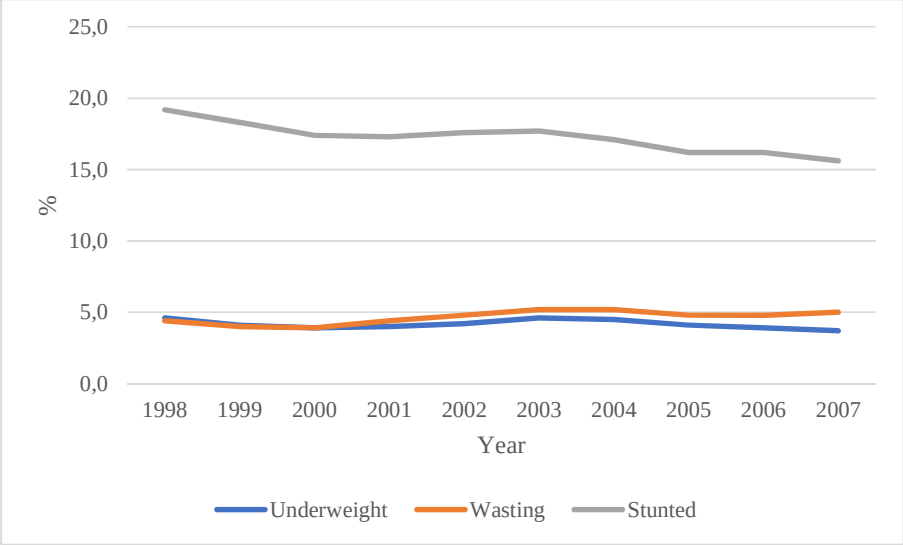

Figure 14. Food utilization among children. *Source:* WDI (2017); author's calculation.

The first indicator considered is the percentage of children under 5 years of age affected by wasting.

As displayed by Figure 14, from 1998 to 2007 the percentage of children under 5 years of age affected by wasting increased by 0.6 percentage points, a small difference. Even though the percentage of children affected by wasting can be considered quite low, the trend seems unfortunately positive, which means that wasting was an increasing issue.

The second indicator considered is the percentage of children under 5 years of age who are stunted. As shown by Figure 14, from 1998 to 2007 the percentage of stunted children under 5 years of age decreased more than 3 percentage points. Differently to wasting, many children in Venezuela were stunted – in 1998, almost 1 in 5. Luckily, the trendline is negative and the values don't seem to be wavering.

The final indicator focused on children considers the percentage of children under 5 years of age who are underweight. From 1998 to 2007 the percentage of underweight children under 5 years of age has decreased by approximately 1 percentage point. The percentage of underweight can be considered quite low. As for many other indicators before, since the year 2003-2004 – the second phase of the Chavez' government – there was

some improvement. In the previous years, the curve seemed wavering; however, all in all, the trend seems negative, which is good news for Venezuela.

After having measured food utilization among children, the focus is switched to women. To measure food utilization among them, this paper relies on the number of low-birthweight babies as percentage of births. Unfortunately, data for the year 1998 is not available.

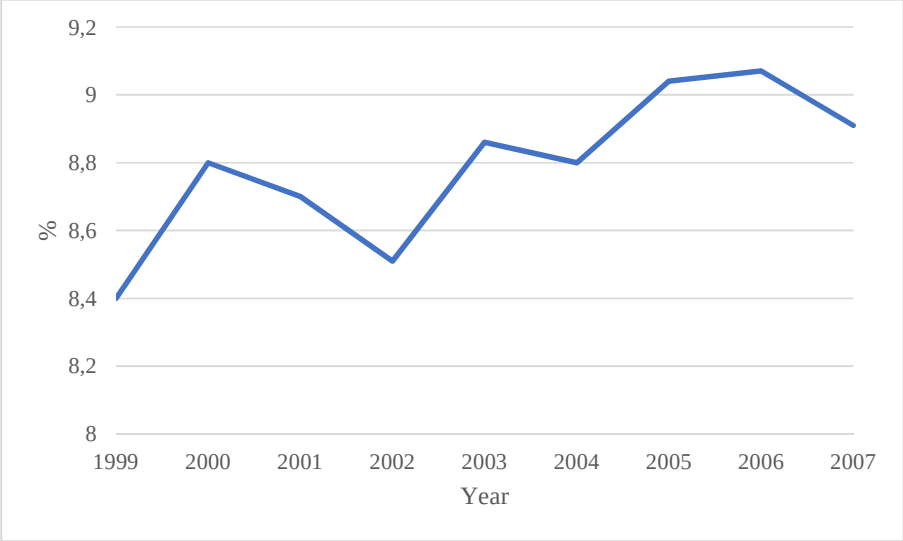

Figure 15. Low-birthweight babies as percentage of births. *Source:* OAD (2017); author's calculation.

The curve shows an increase in the percentage of children with low birthweight, with an increment of 1.5 percentage point between 1999 and 2007. Unfortunately, the trend seems positive, which means that malnourishment among women was an increasingly important issue.

Finally, to better comprehend the extent of the problem of undernourishment, the indicators "Intensity of food deprivation" and "Prevalence of undernourishment" are used. As said before, they are calculated as an average over 3 years.

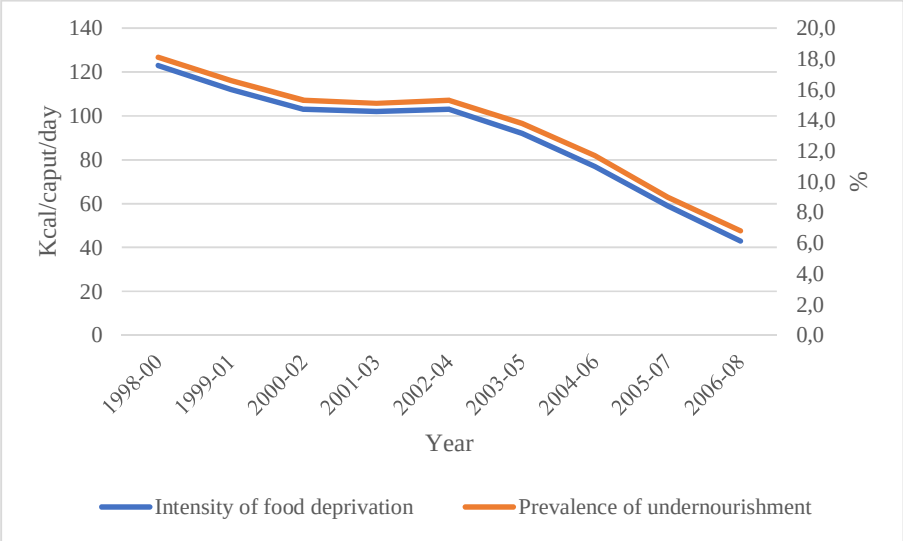

Figure 16. Intensity of food deprivation and prevalence of undernourishment. *Source:* FAO (2017); author's calculation.

Figure 16 paints a comforting picture. In fact, both the depth of the food deficit and the prevalence of undernourishment in the three years 2006, 2007, 2008 are almost on third of ones measured in the three years 1998, 1999, 2000. Since in developing countries a vast majority of Average Energy Requirement (AER) falls between 2100 - 2400 Kilo-calories (FAO, 2009), a food deficit below 2% of the AER seems an impressive result. Moreover, the trend seems is negative, which is great news for Venezuela.

All in all, these indicators tell a subtlety story: the overall food deprivation decreased, but women's condition worsened and children's state didn't improve in every aspect.

6.2 Intervening variables

As said before, there are a few variables that are not connected to food sovereignty policies that may have played a role in food security. In the next section, they will be listed and analyzed.
The first intervening variable considered is gross domestic product per capita, (in purchasing power equivalent).

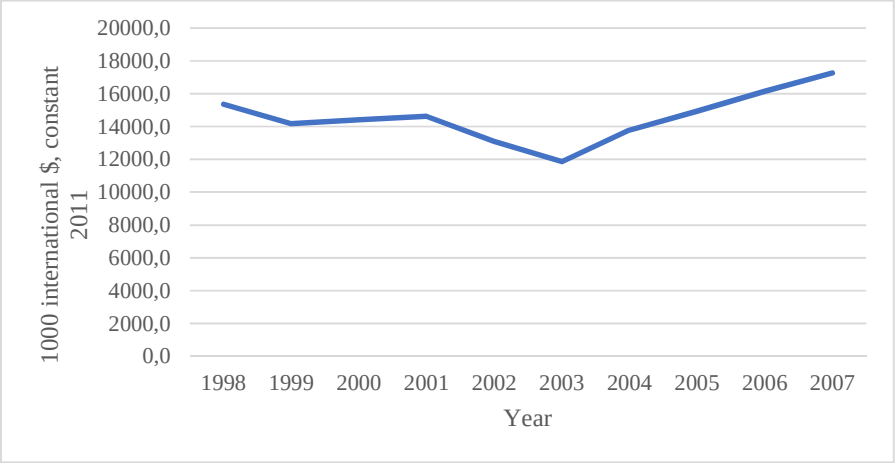

Figure 17. Gross domestic product per capita, PPP. *Source:* WDI (2017); author's calculation.

Under Chavez' government, the GDP at PPP has had a few ups and downs. Even though in the last four years considered there has been an improvement, all in all it has remained quite intact. Therefore, it seems difficult to assess its impact on food access.

The second intervening variable is poverty, measured as the percentage of population living below the poverty line (by national standards).

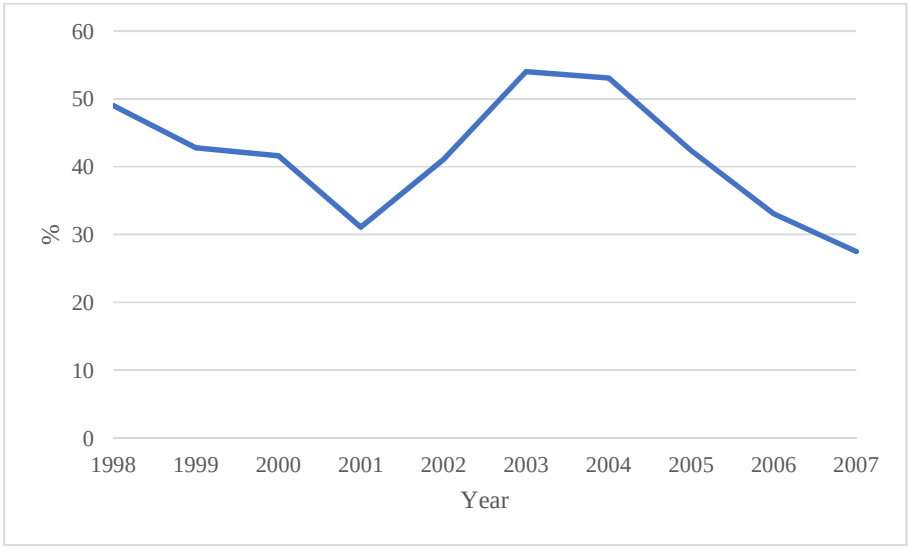

Figure 18. Percentage of population living below the poverty line (by national standards). *Source:* WDI (2017); author's calculation.

Figure 18 shows a slightly different trend compared to the previous chart: already in the first three years, in fact, many advancements were achieved. However, it seems that the values are quite wavering. Similarly to what written for GDP at PPP, it seems hard to evaluate the impact of this variable on food access.

The third intervening variable is food aid.

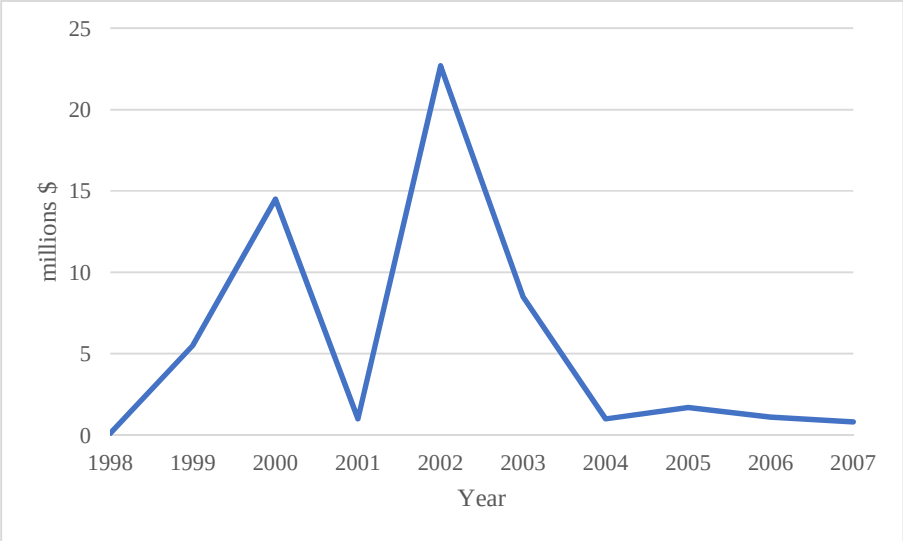

Figure 19. Food and nutrition aid. *Source:* FAO (2017); author's calculation.

A trend is hard to find because there are two spikes of food aid received: one in 2000, which was probably due to mudslides in the coastal area of Vargas in January of the same year, and one in 2002, which was caused by floods in the mountainous areas of Venezuela. At first sight, it seems that the role of food aid was relevant. However, the amount of food aid is only a small share of the national agricultural production: looking, for example, at the year 2000, Venezuela received 4,648.4 tons of food aid, while it produced 13,000,000 tons of food (WFP, 2017). Therefore, the food received represents only around the 0,03% of the food produced. In both cases, as also underlined by the American Red Cross (2002), it was emergency food aid, a way to bring immediate relief to the 200 thousand people affected by the two disasters – not program or project food aid, which would have a more long-term effect.

To conclude, food aid may play a key role in food availability in low-income countries; but in Venezuela, its role is far less relevant when compared to the total production.

The fourth intervening variable is “population”.

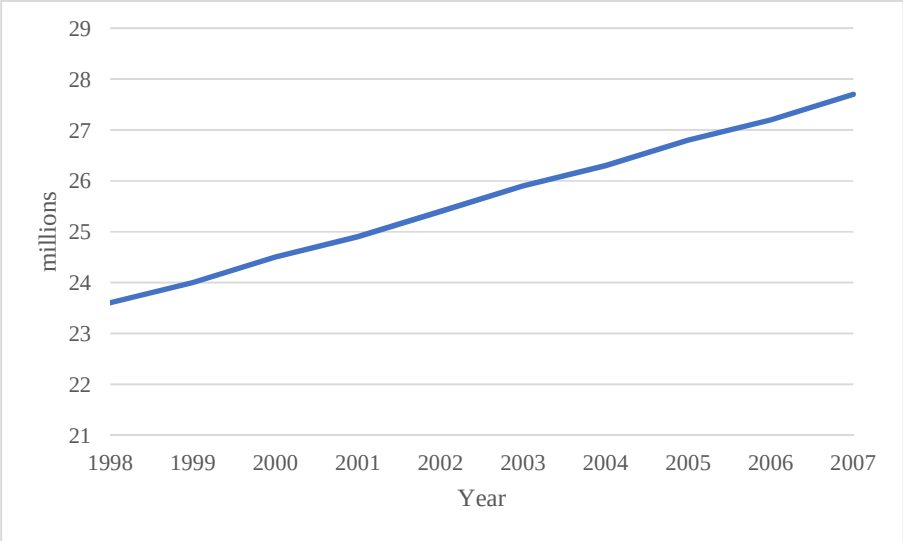

Figure 20. Total population of Venezuela. *Source:* WDI (2017); author’s calculation.

In the period analyzed, the population increased from 23.6 million people in 2003 to 27.7 million in 2007. Figure 20 shows and increase by more than 17%. It seems safe to assume that such a considerable increment had a negative impact on food availability.

The last intervening variable is “adverse climate conditions and crop/animal diseases”. In 1998 countries in Central and south America were affected by the hurricane Mitch, causing torrential rains, high winds, and widespread flooding. Its effects created a precarious situation, which became even more complicated after droughts in the summer of 2001. Luckily, despite being relatively close to the affected areas, Venezuela in both cases was spared by the force of nature.

Venezuela was less lucky in 2000 and 2002, when it suffered from mudslides and floods. In both cases, the events occurred in non-agricultural areas, either coastal states or mountainous zones. These two tragedies, therefore, probably only marginally affected the food production.

In 2005, torrential precipitations hit several departments of Venezuela, causing river overflows, mudslides, and damage to houses and to the road network. However, damages to major staple food crops, such as maize, sorghum, and rice were limited: in fact, the main growing states were only marginally affected by those excessive rains. In addition, harvesting of the main summer crop, accounting for about 80 percent of annual production, was already completed by the end of 2004. Luckily, in the following two years, the analysis of the ten reports published by FAO and of the GIEWS’ updates underline that Venezuela, wasn’t affected by severe events that could affect food security.

All in all, Venezuela never suffered food supply difficulties due to weather shocks and the fields were never seriously damaged. Therefore, adverse climate conditions and crop/animal diseases cannot be the cause of decrease of food security in the country.

6.3 Empirical analysis findings

Chapter 6 has highlighted that food security has significantly changed in the period analyzed. The findings are quite surprising: to summarize the food security outcomes on the various dimensions, the following table is presented.

Table 18. *Empirical analysis findings.*

Dimension	**Positive outcomes**	**Negative outcomes**	**Mixed outcomes**
Food availability, macro	☑		
Food availability, micro	☑		
Food access, micro			☑
Food stability, macro		☑	
Food stability, micro		☑	
Food utilization (micro and macro)			☑

As seen in the previous sections, the results achieved by Venezuela at the dimension of food availability at the macro and micro level appear, at first sight, impressive. In fact, in the Bolivarian Republic people received an adequate amount of energy from their diet, which was quite rich and complete, and the state was able to guarantee enough quantity of food. This is even more impressive when it is considered that population in the same timeframe increased – this could have severely undermined the improvement in the food availability dimension.

However, as highlighted by Figure 6, the increase of food availability at the macro level was only in minimal part due to a raise in production: in fact, the key role was played by imports in the last period. Switching the focus of food stability, this mean that, despite the significant efforts from the government, the improvements compared to 1998, and the sufficient foreign exchange income to pay for imports, the state was excessively dependent on cereal imports. As also underlined by the "Cereal import dependency ratio", the state was completely vulnerable to shocks at the macro level. Moreover, this instability and vulnerability could also be measured at the micro levels, with increasing volatility of food price and production and variability of food supply.

This situation of instability was further worsened by the origin of the money used to promote the development of the agricultural system. As said before, the government dedicated large sums to the food sector, money that was coming mainly from oil revenues. This raises the question whether these investments and expenses of the government could have been sustainable in the long run and in periods of low oil prices or production. Interestingly, falling oil prices and loss of oil revenues are considered by many authors as one key factor in the food crisis that has emerged in Venezuela since 2013 (for example, Olayungbo & Hassan, 2016; Stevens, 2017). Certainly, the 2013 crisis has also been caused by many other elements; but in the light of the situation in Venezuela in 2007, the downturn doesn't seem excessively surprising. Also, it cannot be argued that this instability both in the production and in the supply is related to particularly adverse climate conditions, or diseases in the fields or among the animals. In fact, as seen before, Venezuela didn't experience, for time considered, catastrophic climatic events that occurred, for example, in the near Nicaragua.

While the matter of food stability in Venezuela seems clear - the state's policies weren't able to address the matter -, and the progress at the dimension of food availability are undeniable – despite being bolstered by imports -, it is harder to judge the effects on food access and food utilization.
Concerning food access, it is complicated to have a precise evaluation. The micro level provides us some insight, but the results are quite nuanced. On the one hand, a higher percentage of population had access to water in 2007 compared to 1998: the overall growth, only 1.5%, is not particularly impressive, but it is an advancement nonetheless. On the other hand, the domestic food price index suggests that buying aliments for the poorest strata of the population had become more complicated. In a nutshell, physical access had improved, but economic access had worsened, despite, for example, the previously mentioned Mercal mission. Moreover, as said before, it is not possible to analyze this dimension at the macro level: the combination of these elements makes it difficult to come to a definitive conclusion for this dimension.

Finally, regarding food utilization, it is beyond doubt that some achievements have been reached. For example, between 1998 and 2007 the intensity of food deprivation has significantly decreased. However, other figures depict a more nuanced picture. Mixed results have been achieved regarding food utilization among children: the percentage of underweight and stunted kids decreased, but the percentage of children affected by wasting incremented. Moreover, women's malnourishment had risen, and the trendline was significantly upward. The results are even less impressive when the intervening variables show that in the period poverty had decreased (and GDP per capita had remained stable): only mixed results were achieved despite intervening variables were pushing progress forward.

Chapter 7 - Conclusions

This chapter presents the key points of the study, discusses the strengths and limitations of thesis, and suggests new areas for further research.

7.1 Overview of the study and final remarks

This thesis has tried to investigate the effects of food sovereignty-oriented policies in Venezuela on food security. To do so, the study first focused on how these policies are supposed to lead to food security – the first sub-question. As underlined in Chapter 2, food sovereignty proponents believe that food security can be achieved with small scale-farms, using local knowledge and "traditional" species. These farms must be helped by the state through price support and subsidies, empowered through local councils and localized food systems, and protected from foreign production. This way, more food, cheaper products, less import dependency, and higher rural income can be attained, obtaining, therefore, more food security. Nevertheless, as written before, this receipt has been criticized by many authors: they question the small farms' productivity, disapprove the rejection of genetic engineering, contest the use of the term "traditional", and criticize food sovereignty's differentiation of the agrarian classes, which divides it in "peasants" and the opposed category of capitalist entrepreneurs.

In Chapter 5, the study has answered the second sub-question, namely what food sovereignty-policies did Venezuela carry out and how were they implemented. It was a key question: as said before, some scholars believe that Venezuela initially tried to achieve food security, and only in 2008 changed its focus to food sovereignty. Other authors disagree, and so does the author of this research. In fact, this paper, through listing the Venezuela food policies, concludes there is definitely a connection between the government's measures and food sovereignty for the period analyzed. In fact, on the one hand it seems that all the policies implemented have food sovereignty elements; on the other hand, all the measures suggested by the Food Sovereignty Movement were indeed introduced by Venezuela.

Finally, this thesis' main research question, to what extent and how did the food sovereignty-oriented policies in Venezuela achieve food security, and the third sub-question, whether they were successful, were answered. In the face of the only mixed results achieved by the Venezuelan policies, it seems arduous to consider the food sovereignty measures completely fruitful. In fact, on the one hand, they have achieved some results in the various dimensions and levels of food security; but on the other hand, the outcomes were more often mixed and even negative. All in all, it appears that food sovereignty hasn't completely kept its promises, especially if it is considered that the increase of food security was bolstered by a slightly rising GDP and by a reduction

of the share of the population living below the poverty line – variables not dependent on food sovereignty measures. Also, the same policies that lead to improvements in food security weren't able to fight volatility, variability and instability, failing to prevent the plantation of the seeds of future food security crisis in Venezuela.

It could be argued that eventual failures weren't caused by a fallacious rationale behind the food sovereignty policies, but rather to an imperfect implementation of them. For example, Wilpert (2011) underlines that the local councils didn't perform as planned: the opposition of some members of the government, in fact, made them far less effective and unable to provide the proper feedback to the central institution. Similarly, failure in the land redistribution system could be blamed for the outcome: Enriquez (2013) thinks that the system behind it was excessively bureaucratic and slow, with the state failing to meet its obligation to give the land to the new owners and creating legal controversies. Besides, Delahaye (2002) believes that the soil redistribution may have led to the creation of a land black market, similarly to what had happened after the 1960s' reform, therefore hindering the growth in the rural areas. Moreover, Hernandez (2009) states that many missions, such as the Mercal one, lost their effectiveness once the government started to reduce the investments, since they were highly dependent on the state's funding. Others, speaking more generally, believe that the socialist approach that the state adopted for food policies is to blame (Gobry, 2016).

It is hard to say whether this alleged missteps from the Venezuelan government justify the mediocrity of the results, obtained in almost ten years of government. According to the author of this thesis, many were the shortcomings in Venezuela's plan to achieve food security. The state should have focused more on productivity increase, to achieve a prominent level of food availability without becoming vulnerable. As said before, some say that imports were used to fight inflation: so maybe the government should have found a different way to reduce it in the first place. Also, the regime should have not created such a high number of institutions that, as stated in chapter five and in this section, were sometimes both redundant and inefficient, and weren't able to prevent distortions of the system, such as the presence of a land black market. Besides, the government should have adopted a different approach to improve the economic access: state-run companies, such as Mercal, don't seem to work. Finally, Venezuela's efforts should have focused more on increasing food security among vulnerable strata of population, such as women and children: their situation, as affirmed before, didn't significantly improve.

To conclude, after all, it is probably inevitable that to so many radical reforms correspond a few setbacks. Similarly, it is impossible to prove that a more capital-based approach would have led to different outcomes – and that is not the purpose of the paper. Besides, although the theoretical framework presented in Chapter 3 appears to be less convincing now, it is not impossible that food sovereignty policies may be successful outside the Bolivarian Republic.

Ultimately, what this study can state is that if food sovereignty proponents see Venezuela as the proof that the food sovereignty receipt works – and, despite the current food crisis, some scholars still believe so (for example, Schiavoni & Camacaro, 2016) – maybe they should turn their attention elsewhere.

7.2 Limitation of the research

This study presents some limitations. The measurement would have benefitted by the availability of more information. In fact, unfortunately, it was not possible to measure the physical access to food due to lack of appropriate data; similarly, an indicator able to measure explicitly adults in food utilization, such as the percentage of adults who are underweight, was not included for the same reason. Besides, data was not always available for every year analyzed, as was the case for two food utilization indicators. Moreover, concerning the intervening variables, the only way to assess the impact of adverse climate conditions and crop or animal diseases was through the analysis of reports: statistical data, in fact, cannot depict a clear picture of such a multifaceted concept. Finally, since the contribution analysis is done not with a single policy but with a range of measures, it was not possible to directly link the food security outcomes to a specific policy.

7.3 Further research

The Venezuelan case offers significant room for further investigation. First, it may be relevant to investigate the role played by the single food sovereignty policies implemented through field interviews with those directly involved with them and with the policymakers. Second, it may be interesting to compare the effects of the 2007-2008 food crisis between Venezuela and a similar country that has followed a more neoliberal approach. Finally, it may be important to further research on the effects of food sovereignty policies if and once another country implements food sovereignty policies similar to and transformative as the Venezuelan ones.

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